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Bramford to Twinstead Reinforcement

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Contents

1. Introduction

1.1 Overview

1.1.1 National Grid Electricity Transmission plc (here on referred to as National Grid) is making an 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 For a full description of the project reference should be made to Environmental Statement (ES) Chapter 4: Project Description (**application document 6.2.4**).

1.1.3 This landscape and visual assessment methodology has been produced to support the application for development consent and the accompanying ES under the Planning Act 2008.

1.2 Purpose of this Appendix

1.2.1 This appendix has been produced to support ES Chapter 6: Landscape and Visual (**application document 6.2.6**). It provides more explanation regarding the technical methods that will be used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the significance criteria which will be used for the landscape and visual assessment.

1.2.2 Although assessed separately, landscape and visual effects are closely linked which means there is some overlap of methodology.

1.2.3 This appendix also describes the technical methods used to undertake photography and create the wirelines which will be used primarily to inform the visual assessment.

1.3 Structure of this Appendix

1.3.1 The appendix is structured as shown in Table 1.1.

Table 1.1 – Structure of this Appendix

Chapter	Content
1: Introduction	Introduces the appendix, its purpose and the structure.
2: Landscape Assessment Methodology	Outlines the methodology for the landscape assessment, including how baseline data was collected. It also describes the methodology for ascribing sensitivity, magnitude of change and significance.
3: Visual Assessment Methodology	Outlines the methodology for the visual assessment including ascribing sensitivity, magnitude of change and significance.
4: Photography and Wireline Methodology	Outlines the approach to taking photographs and producing wirelines to accompany the viewpoint assessment.

2. Landscape Assessment Methodology

2.1 Guidance Specific to Landscape Assessment

2.1.1 The assessment of landscape effects is described in the third edition of the Guidelines for Landscape and Visual Impact Assessment (GLVIA3) (Landscape Institute and Institute of Environmental Management and Assessment (IEMA), 2013) as follows:

'An assessment of landscape effects deals with the effects of change and development on landscape as a resource. The concern ... is with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.... The area of landscape that should be covered in assessing landscape effects should include the site itself and the full extent of the wider landscape around it which the proposed development may influence in a significant manner.' Paragraphs 5.1 and 5.2.

2.1.2 The term 'landscape effects', as defined in paragraph 2.21 of GLVIA3, means impacts or effects on '*the landscape as a resource in its own right*'. It includes direct impacts upon the fabric of the landscape (such as the addition, removal or alteration of structures, woodlands, trees or hedgerows), which may alter the character and perceived quality of the area, or more general impacts (indirect impacts) on landscape character and designated areas of landscape arising from the introduction of new man-made features, which may be perceived from further away. In landscapes designated or valued for their scenic or landscape quality, such as National Parks, such changes can affect the purpose of the designation or its perceived value.

2.1.3 The two categories of landscape receptor that were considered in the assessment are:

- Landscape designations at a national and local level. These include the nationally designated Dedham Vale Area of Outstanding Natural Beauty (AONB) and a number of locally designated Special Landscape Areas; and
- Landscape character (combinations of elements and aesthetic and perceptual aspects that make an area distinctive).

2.1.4 Landscape assessment follows a standard approach:

- Establish the baseline conditions against which the impacts of the project will be assessed, including judgements on the value of landscape receptors. This includes consideration of how the landscape may change in the future irrespective of the project;
- Determine the sensitivity of the landscape likely to be affected, which combines judgements about its susceptibility to change arising from a specific proposal with judgements about its value;
- Predict the nature or magnitude of the change likely to occur, which combines judgements about the likely size and scale of the change, the geographic extent of the area over which it is likely to occur, whether the impact would be direct or indirect, reversible or irreversible, short, medium or long term in duration, and whether it is positive, neutral or negative; and

- Assess the level of importance of any landscape effects and whether they are likely to be significant. This is done by considering the predicted magnitude of change together with the sensitivity of the landscape, taking into account any proposed mitigation measures.

2.2 Approaches

Approach to Identifying the Setting of the Dedham Vale AONB

2.2.1 Following engagement with Natural England, National Grid has defined what it considers the setting of the Dedham Vale AONB in the context of the project in The Dedham Vale AONB – Approach and Identification of Setting Study. The purpose of this report was to identify areas of the landscape considered to be part of the setting of the AONB in the vicinity of the project, in order to inform the assessment of effects of the project on the defined natural beauty of the AONB. The Dedham Vale AONB – Approach and Identification of Setting Study can be found in Annex A of ES Appendix 6.2: Assessment of Effects on Designated Landscapes (**application document 6.3.6.2.1**).

Approach to Assessment of the Proposed Overhead Transmission Line Component of the Project

2.2.2 The reinforcement would include approximately 18km of overhead line (consisting of approximately 50 new pylons, and conductors). 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 Network owned 132kV overhead line.

2.2.3 The assessment of the landscape impacts from the proposed 400kV overhead line component of the project is complex since it has to take account of the existing 400kV overhead line and 132kV overhead line already present in the landscape and considered as part of the baseline.

2.2.4 The presence of the existing 400kV and 132kV overhead lines was considered in the baseline and influenced the judgements relating to the susceptibility of the landscape to the project (in terms of the current influence that the existing 400kV and 132kV overhead lines have on landscape character).

2.2.5 The factors considered relevant to the assessment include:

- The distance between the existing and proposed 400kV overhead lines;
- The area of landscape likely to be affected and whether this is greater than the area currently affected by the existing 400kV overhead line and 132kV overhead line;
- The overall character of the landscape, the way that it is experienced and its sensitivity to the proposed 400kV overhead line and removal of the 132kV overhead line;
- The siting and design of sections of the proposed 400kV overhead line in relation to the existing 400kV overhead line and 132kV overhead line to be removed – for example how the design, scale and position of proposed and existing pylons relate; and

- The existing presence of other lower voltage overhead lines (to be retained), wind turbines and other vertical features which together may affect the character of the landscape.

2.3 Baseline Data Gathering

2.3.1 The first stage in the landscape assessment was to establish the nature of the existing landscape including its constituent elements and features, its character and the way this varies spatially, its history, condition, the way it is experienced and the value attached to it. This is referred to as the 'baseline landscape environment' or 'landscape baseline'.

2.3.2 The landscape baseline forms the basis for the identification and description of the landscape changes that may result from the project.

- Ordnance Survey (OS) maps and aerial photography;
- Local Development Plans and planning policy;
- Existing landscape character assessments;
- Management plans; and
- Seasonal site visits.

2.4 Evaluating Landscape Sensitivity

2.4.1 The sensitivity of landscape receptors was determined by combining judgements about the value attached to the landscape (which is established and reported as part of the baseline) with judgements about the susceptibility of the landscape to change arising from the project.

2.4.2 Judgements on the value attached to the landscape baseline are unrelated to the nature of the project proposed, whilst judgements on susceptibility may vary in response to the type of project proposed and the attributes of the area in which it is to be located.

Landscape Value

2.4.3 Irrespective of the presence, or not, of formal designation, an area of landscape may be valued for many reasons. These reasons may include its quality, scenic beauty, tranquillity or remoteness, its recreation opportunities, nature conservation or its historic and cultural associations. Development will not necessarily be incompatible with valued qualities of a landscape as this will depend on the nature of the proposal and the characteristics of the landscape.

2.4.4 In terms of landscape value, nationally and internationally designated landscapes are generally accorded the highest value. The absence of a formal landscape designation, however, does not necessarily imply that a landscape is of lower value. Paragraph 5.19 of GLVIA3 describes value as:

'…the relative value that is attached to different landscapes by society, bearing in mind that a landscape may be valued by different stakeholders for a whole variety of reasons. …[A] review of existing landscape designations is usually the starting point in understanding landscape value, but the value attached to undesignated landscapes also needs to be carefully considered…. Landscapes or their component parts may be valued at the community, local, national or international level….'

2.4.5 In response to this, Table 2.1 sets out the typical importance of landscape receptors.

Table 2.1 – Typical Importance of Landscape Receptors

Importance	Description
International/national	Landscapes which are internationally or nationally designated for their landscape value: AONBs
Regional/local	Regionally or locally designated landscapes including Special Landscape Areas
Community importance	Everyday landscape, which may be valued by the local community but has little or no wider recognition of its value.
Limited	Despoiled or degraded landscape with little or no evidence of being valued by a community.

2.4.6 The quality of a valued landscape is often explained in a citation for a designation, but where this is not available, value can be assessed through the application of a criteria-based comparative landscape approach supported by published documentation such as tourist leaflets, art and literature. This is in line with the latest guidance from Natural England (2019) and the European Landscape Convention (2006) which promote an '*all-landscapes approach'*, founded on the recognition of value in all landscapes.

2.4.7 An appraisal of value considers the following factors:

- Landscape character and quality;
- Scenic quality;
- Conservation interests;
- Recreation value;
- Perceptual aspects and tranquillity; and
- Associations.

2.4.8 Judgements regarding the value of the character of the landscape were based on published local landscape character areas. Each character area was systematically assessed against the value factors shown in Table 2.2 and judgements made on a sliding scale indicating a lower or higher value. These judgements were then considered together to inform an overall evaluation of the relative value of the landscape which were described as either high, medium-high, medium, medium-low or low.

Table 2.2 – Factors Contributing to Landscape Value

Factors Used to Judge Value	Definition	
	Lower Value	**Higher Value**
Landscape character and quality	Areas where the landscape character/quality is positive and intact are likely to have a higher value than areas where landscape character/quality has been lost or is perceived as negative. Intactness of the landscape is demonstrated by, amongst other things, presence of characteristic natural and man-made elements, which are generally in good condition; and absence of significant incongruous or detractive elements.	
	The landscape has relatively low landscape quality Indicators: *Weak or negative sense of place* *Poor condition*	⟷ The landscape has relatively high landscape quality Indicators: *Strong or positive sense of place* *Good condition*
Scenic quality	Areas of attractive scenery, sense of place and local distinctiveness will typically be more highly valued than less scenic areas. This includes landscapes designated for their natural beauty but also areas of undesignated landscape. Scenic landscapes are typically those that appeal to the senses through, for example, combinations of some of the following: distinctive, dramatic or striking landform or patterns of land cover; strong aesthetic qualities such as scale, form, colour and texture; or visual diversity which contributes to the appreciation of the landscape.	
	The area of landscape under consideration has relatively low scenic quality Indicators: *Unattractive* *Negative/weak character/sense of place*	⟷ The area of landscape under consideration has relatively high scenic quality Indicators: *Attractive* *Strong/positive character/sense of place*
Conservation interests	The presence of multiple designated cultural heritage and ecological features and designated landscapes is indicative of a higher value landscape, for example: • Where a landscape falls within a designated landscape such as a National Park, AONB, Special Landscape Area, etc., this is reflective of a more highly valued landscape; albeit value may vary locally within a designated landscape. • The presence of internationally or nationally designated heritage assets: World Heritage Sites; scheduled monuments. • The presence of historic landscape assets, which although not protected by designation are considered to be of national value: registered parks and gardens. • The presence of internationally or nationally designated natural heritage assets: Ramsar sites; Special Areas of Conservation; Special Protection Areas; Sites of Special Scientific Interest; and National Nature Reserves and ancient woodland.	

Factors Used to Judge Value	Definition		
	Lower Value		**Higher Value**
	The area of landscape under consideration has few or no designated sites		The area of landscape under consideration has a high density of designated sites
Recreation value	The extent to which experience of the landscape makes an important contribution to recreational use and enjoyment of an area is a measure of landscape value and is indicated by the presence of features such as country parks, nationally designated and regionally promoted trails, formal cycle routes, promoted viewpoints, visitor facilities such as car parks, density of the local Public Right of Way network and key focal/designated visitor attractions such as hillforts/castles/church towers. Landscapes can be highly valued at different scales ranging from large nationally valued landscapes such as National Parks, through smaller locally valued landscapes to those which are valued for recreation at a small-scale community level.		
	The area of landscape under consideration has low recreational value. Indicators: *Low density of recreational features including rights of way, open access land and visitor attractions where an appreciation of the landscape is integral to the visitor experience*		The area of landscape under consideration has relatively high recreational value. Indicators: *High density of recreational features including rights of way, open access land and visitor attractions where an appreciation of the landscape is integral to the visitor experience*
Perceptual aspects and tranquillity	The extent to which the landscape provides opportunities to experience a sense of relative remoteness and/or relative tranquillity. This may be influenced by presence or lack of overt man-made structures and visual and audible intrusions.		
	The landscape has a low relative remoteness and/or tranquillity, with overt man-made structures and/or visual and audible intrusion. Indicators: *Noisy; threatening; unattractive* *Weak or negative sense of place* *Close to visible signs of human activity and development*		The landscape has a high relative remoteness and/or relative tranquillity, including a lack of overt man-made structures, freedom from visual and audible intrusion and a perceived naturalness. Indicators: *Remote; tranquil; attractive; peaceful* *Strong or positive sense of place* *Physically or perceptually remote or tranquil – no audible, visual intrusion*

Factors Used to Judge Value	Definition	
	Lower Value	Higher Value
Associations	The extent to which the landscape is associated with particular people, such as artists or writers, or events in history that contribute to the perceptions of the natural beauty of the area.	
	The landscape has none or very few associations with particular people, such as artists or writers. Indicators: *None or very limited evidence of the fact that the landscape has associations with artists or writers.* *No or very limited evidence that the landscape has associations to events in history that contribute to the perceptions of the natural beauty of the area.*	The landscape has notable or many associations with particular people, such as artists or writers. Indicators: *Clear evidence of the fact that the landscape has strong associations with artists or writers.* *Clear evidence that the landscape has strong associations to events in history that contribute to the perceptions of the natural beauty of the area.*

Landscape Susceptibility

2.4.9 Paragraph 5.40 of GLVIA3 defines the susceptibility of the landscape as, *'the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or features, or a particular aesthetic and perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or achievement of landscape planning policies and strategies.'*

2.4.10 Unlike judgements on the value attached to the landscape, the assessment of landscape susceptibility should reflect the characteristics of the project and requires:

- Identification of the important components of the landscape that make up a particular landscape and how they are likely to be affected by the project; and
- Identification of the various aspects of the project, at all stages, that are likely to have an effect on those important components.

2.4.11 Judgements regarding the susceptibility of the character of the landscape to the project were based on published district-scale landscape character areas. A number of factors were considered (including physical, perceptual and experiential), all of which may contribute to landscape character and may be affected by the project. The existing 400kV and 132kV overhead lines were considered as components of the baseline landscape. The susceptibility of the landscape to the project differs depending on the component of the project being assessed.

2.4.12 The landscape within each character area was assessed against each of the susceptibility factors shown in Tables 2.3, 2.4 and 2.5, and judgements made on a sliding scale indicating a lower or higher susceptibility. The table also identifies which of the Holford Rules (1959) and Horlock Rules (National Grid, 2009) are applicable to each factor.

2.4.13 The susceptibility of the landscape is described as high, medium-high, medium, medium-low or low. When assessing the value, susceptibility, sensitivity and magnitude of change, some of the threshold categories were subdivided to better reflect the nuances of the local landscape or visual conditions found within the study area and therefore do not necessarily reflect the subdivisions presented in ES Chapter 5: EIA Approach and Method (**application document 6.2.5**). The rationale in support of the assessment is set out for each receptor so that it is clear how each judgement has been made.

Table 2.3 – Factors Used to Judge the Susceptibility of the Landscape to a 400kV/132kV Overhead Line

Factors Used to Judge Susceptibility	**Definition**	
	Lower Susceptibility	**Higher Susceptibility**
Landform **Holford Rules 4 and 5**	Steep, dramatic or elevated landforms will typically be more susceptible to 400kV/132kV overhead lines. This is because they are often prominent and distinctive in character and can also lead to skylining of overhead lines. Single and narrow ridges are particularly vulnerable, especially where the slopes of the ridgeline are well defined, steep or with rock outcrops. More complex landforms may provide some screening/backclothing opportunities for pylons, but care has to be taken not to dominate intricate landforms. Valleys and low rolling hills are generally less susceptible because they have greater potential to provide backclothing and enclosure, limiting the perceptibility of an overhead line. Landforms that are smooth, regular and convex, or flat and uniform, may be less susceptible to 400kV/132kV overhead lines, although this can depend on other factors such as tree cover. Flat landforms may be more susceptible where there is an absence of surrounding higher landform to provide a backcloth.	
	A 400kV/132kV overhead line may be accommodated well into the landform. Indicators: *Valleys and low rolling hills* *Simple featureless landform* *Flat and uniform landform*	A 400kV/132kV overhead line may conflict with prominent and distinctive landforms. Indicators: *Dramatic or rugged hills* *Irregular or complex landform* *Steep and elevated landforms* *Prominent or distinctive landforms*

Factors Used to Judge Susceptibility	Definition		
	Lower Susceptibility		Higher Susceptibility
Landcover **Holford Rules 5 and 6**	This factor is not concerned with the particular material sensitivity of a type of landcover (which is considered in other environmental topics such as consideration of susceptibility of habitats in Chapter 7: Biodiversity) but with the character of the landscape created through the landscape pattern. Complex landscapes comprising a variety or mosaic of characteristic or susceptible landscape features, such as trees and woodlands, hedgerows or traditional/historic field patterns, are typically more vulnerable to 400kV/132kV overhead lines than simple uncluttered landscapes where there are few characteristic landscape features, or where such patterns have been obscured. Tree and woodland cover offers the potential to screen pylons (particularly in combination with undulating landform), although care must be taken not to allow the pylons to detract from or dominate locally distinctive features such as tree knolls, ancient specimen trees or avenue trees. Where landscape complexity is due to past or current commercial/industrial influences, this indicates lower rather than higher susceptibility. Areas of commercial forestry and intensive farming may also indicate lower susceptibility.		
	A 400kV/132kV overhead line may be accommodated well within land cover. Indicators: *Low density of sensitive landscape features* *Simple, regular or uniform landscape* *Developed land, derelict or waste ground* *Commercial forestry* *Lowland farmland*	⟷	A 400kV/132kV overhead line may interrupt distinctive landcover patterns. Indicators: *High density of sensitive landscape features* *Complex, irregular or intimate landscape* *Open hillsides* *Water bodies*
Scale	Larger-scale landscapes, where pylons appear more in proportion, are typically less susceptible to 400kV/132kV overhead lines than small-scale or intimate landscapes, where pylons would be likely to be more prominent. A large height differential between valley floors and hilltops may help reduce susceptibility by lessening the perceived size of the pylons, but the apparent scale of the landform could be diminished by the height of the pylons. Comparison of pylons with landscape features such as field patterns, landform, individual trees and buildings may also emphasise their size.		
	The 400kV/132kV overhead line may be accommodated well within the scale of the landscape. Indicators: *Large-scale landscapes*	⟷	The 400kV/132kV overhead line may appear out of scale within the landscape. Indicators: *Intimate and small-scale landscapes*

Factors Used to Judge Susceptibility	Definition		
	Lower Susceptibility		Higher Susceptibility
Skylines **Holford Rule 4**	Landscapes with distinctive ridges or skylines are likely to be more susceptible to a 400kV/132kV overhead line than skylines that are less prominent or have been affected by contemporary structures. The presence of distinctive or historic landscape features, such as hilltop monuments, church towers or vernacular villages, increases susceptibility as overhead lines can detract from or conflict with these features. Skylines which form prominent settings for settlement are also likely to be more susceptible.		
	Skylines are not considered prominent and therefore are less susceptible. There would be no conflicts with strong visual features and focal points/landmarks and/or prominent settings. Indicators: *Poorly defined/less prominent skylines* *Skylines with few visual foci* *Existing vertical features (modern development)* *Cluttered skylines*		There are strong visual features and focal points/landmarks and/or prominent settings which may be highly susceptible to 400kV/132kV overhead lines. A 400kV/132kV overhead line may overwhelm these features. Indicators: *Prominent/distinctive skylines* *Strong visual features and focal points* *Uninterrupted/undeveloped skylines*
Human influence	This factor is concerned with the presence of built structures and human intervention in the landscape. The presence of modern (particularly vertical) structures, such as wind turbines, transport, utility or communication infrastructure or industrial development, may reduce landscape susceptibility to a 400kV/132kV overhead line, as may the visible influence of quarrying, commercial forestry or landfill. The frequency of built form and human intervention in more contemporary densely settled areas may also indicate a reduced susceptibility to a 400kV/132kV overhead line.		
	The landscape includes overt man-made structures or land use, and a 400kV/132kV overhead line would be relatively unobtrusive. Indicators: *Modern urban development/ infrastructure* *Inappropriate use of construction materials* *Presence of industrial-scale movement (e.g., quarrying, commercial forestry)* *Busy, frequently accessed*		The landscape does not include overt man-made structures or land use, and a 400kV/132kV overhead line may form a substantial intrusion. Indicators: *Sparsely settled/rural/farms* *Unpopulated areas* *Presence of historic/vernacular buildings/structures or settlement* *Small-scale residential settlement/no large-scale modern development* *Quiet, calm* *Rarely accessed*

Factors Used to Judge Susceptibility	Definition Lower Susceptibility		Higher Susceptibility
Settlement pattern **Holford Rules 1 and 2**	This relates to settlement pattern in relation to landscape character, rather than to visibility and views, which is discussed in the visual assessment. Because 400kV/132kV overhead lines cannot easily deviate around individual or small groups of properties, landscapes with a dense pattern of isolated properties and small settlements are considered more sensitive than landscapes where settlement is sparse.		
	Indicators: *Urban* *Villages or clusters* *No settlements or sparsely settled*		Indicators: *High density of dispersed farms/ rural properties* *Historic settlement pattern/strong time-depth*

Table 2.4 – Factors used to Judge the Susceptibility of the Landscape to Underground Cables

Factors Used to Judge Susceptibility	Definition Lower Susceptibility		Higher Susceptibility
Landform	Steep, dramatic or elevated landforms will typically be more susceptible to an underground cable. This is because they are often prominent and distinctive in character and typically require more extensive earthworks during construction. Single and narrow ridges are particularly vulnerable especially where the slopes of the ridgeline are well defined, steep or with rock outcrops. Landforms that are smooth, regular and convex, or flat and uniform, are less susceptible to an underground cable, although this can depend on other factors such as tree cover.		
	Indicators: *Flat or gently undulating areas*		Indicators: *Prominent, steep or distinctive landform*
Landcover and scale	This factor is not concerned with the particular material sensitivity of a type of landcover (which is considered in other environmental topics), but with the character of the landscape created through landcover, landscape pattern and the scale of the landscape. Open, simple and uncluttered landscapes where there are few characteristic landscape features are less susceptible to this element of the project, particularly where there is sparse tree cover. Larger-scale landscapes are also typically less susceptible to underground cables than small-scale or intimate landscapes Landscapes with a very intricate, complex mosaic of characteristic or high frequency/density of susceptible landscape features, such as trees and woodlands, hedgerows or traditional/historic field patterns, and designed landscapes with formal patterns, are typically also more vulnerable to underground cables as the scale and nature of the work may conflict with the landscape during construction. Where landscape complexity is due to past or current commercial/industrial influences, this indicates lower rather than higher susceptibility.		

Factors Used to Judge Susceptibility	Definition	
	Lower Susceptibility	**Higher Susceptibility**
	Indicators: *Flat or gently undulating areas* *Simple uncluttered landcover* *Large-scale landscapes* *Large fields and few important hedgerows* *Brownfield sites or arable land* *Trees concentrated in woodlands which can be avoided by a cable swathe*	Indicators: *Complex, irregular, mosaic or intimate landscape patterns (e.g. historic field patterns)* *Small-scale landscapes* *Small fields with many important hedgerows* *Naturalistic landcover* *High levels of tree cover, in particular high frequency of parkland trees, veteran trees and ancient woodland.* *Dense pattern of individual trees*
Human influence	This factor is concerned with the presence of built structures and human intervention in the landscape. The presence of human activity and man-made structures may reduce landscape susceptibility to an underground cable, as may the influence of quarrying, commercial forestry or landfill (in particular during the construction phase). The frequency of built form and human intervention in more contemporary densely settled areas may also indicate a reduced susceptibility. Landscapes which are more highly susceptible are those which are typically more tranquil and are much less influenced by human activity and built form, which may feel more remote and/or have a sense of naturalness.	
	Indicators: *The landscape includes overt man-made structures or land use, and this element of the project would be relatively unobtrusive.* *Active or busy landscapes* *Low scenic quality/poor condition*	Indicators: *Landscapes with little overt modern man-made influence. The landscape is largely unsettled and does not include overt man-made structures or land use and this element of the project may form a substantial intrusion.* *Relatively wild/remote or tranquil landscapes* *High scenic quality/good condition*

2.4.14 Table 2.5 sets out the factors used to judge landscape susceptibility to a cable sealing end (CSE) compound and/or grid supply point (GSP) substation. It should be noted that a GSP substation is typically larger than a CSE compound, and therefore there may be slight variances in terms of susceptibility due to the size differences. This is drawn out in the relevant definitions.

Table 2.5 – Factors Used to Judge the Susceptibility of the Landscape to a CSE compound/GSP Substation

Factors Used to Judge Susceptibility	Definition	
	Lower Susceptibility	**Higher Susceptibility**
Landform **Horlock Rule 4**	Steep, dramatic or elevated landforms will typically be more susceptible to a CSE compound or GSP substation. This is because they are often prominent and distinctive in character and typically require more extensive modification during construction. Single and narrow ridges are particularly vulnerable, especially where the slopes of the ridgeline are well defined, steep or with rock outcrops. More complex landforms may provide some screening/backclothing opportunities, but care has to be taken not to dominate intricate landforms. Valleys and low rolling hills are generally less susceptible because they have greater potential to provide backclothing and enclosure, limiting the perceptibility of a CSE compound or GSP substation. Landforms that are smooth, regular and convex, or flat and uniform, may be less susceptible, particularly if there is frequent tree cover and other man-made elements to provide screening and context. Valleys and low rolling hills are generally less susceptible because they have greater potential to provide backclothing, screening and enclosure, limiting perceptibility.	
	A new CSE compound and/or GSP substation may be accommodated well into the landform. Indicators: *Valleys and low rolling hills* *Simple featureless landform* *Flat and uniform landform*	A new CSE compound and/or GSP substation may conflict with prominent and distinctive landforms. Indicators: *Dramatic or rugged hills* *Irregular or complex landform* *Steep and elevated landforms* *Prominent or distinctive landforms*
Landcover pattern	This factor is not concerned with the particular material sensitivity of a type of landcover (which is considered in other environmental topics), but with the character of the landscape created through the landscape pattern. Open, simple and uncluttered landscapes where there are few characteristic landscape features are more susceptible, particularly where there is sparse tree cover. Landscapes with a very intricate, complex mosaic of characteristic or high frequency/density of susceptible landscape features, such as trees and woodlands, hedgerows or traditional/historic field patterns, and designed landscapes with formal patterns, are typically also more vulnerable as the scale and nature of the infrastructure may conflict with the landscape, particularly with regard to a GSP substation which will typically be larger and incorporate more equipment than a CSE compound. Where landscape complexity is due to past or current commercial/industrial influences, this indicates lower rather than higher susceptibility. Areas of commercial forestry and intensive farming may also indicate lower susceptibility.	

Factors Used to Judge Susceptibility	Definition Lower Susceptibility	Higher Susceptibility
	Agricultural landscapes which are characterised by a varied landcover pattern which incorporates frequent woodland blocks and trees are typically less vulnerable. Tree and woodland cover offers the potential to screen (particularly in combination with undulating landform), although care must be taken not to allow the project to detract from or dominate locally distinctive features such as tree knolls, ancient specimen trees or avenue trees.	
	A new CSE compound and/or GSP substation may be accommodated well within land cover. Indicators: *Medium-scale, lowland, rural landcover with small blocks of woodland and/or frequent hedgerow trees* *Developed land, derelict or waste ground* *Commercial forestry*	A new CSE compound and/or GSP substation may interrupt distinctive landcover patterns. Indicators: *High density of sensitive landscape features* *Complex, irregular or intimate landscape* *Open hillsides* *Water bodies* *Simple landscapes with low density of landscape features* *Simple, featureless, regular or uniform landscape*
Field pattern, scale and enclosure	Landscapes with more regular, medium- to large-scale field patterns are less sensitive, whereas small-scale intimate landscapes with more complex, smaller and irregular field patterns are considered to be highly sensitive, in particular in relation to GSP substations which are typically larger than CSE compounds. For instance, if a CSE compound and/or GSP substation were developed within a number of adjacent irregular and smaller sized fields, disrupting the boundaries, this could affect the perceived character, pattern and scale of the landscape. Furthermore, care has to be taken to reduce the risk that the apparent scale of the field pattern is diminished by the size of the infrastructure. Landscapes which are large to vast in scale with no field boundaries, such as flat coastal and unenclosed upland landscapes, are similarly high in sensitivity as this type of infrastructure would disrupt the distinct open character of the landscape. Landscapes which are characterised by high/overgrown hedgerows or field boundaries with frequent trees are considered less susceptible, whereas landscapes with field boundaries bounded by low, managed hedgerows, walls and fences are considered more susceptible as these are more open.	
	The CSE compound and/or GSP substation may be accommodated well within the scale of the landscape. Indicators: *Medium- to large-scale fields with frequent hedgerow trees*	The CSE compound and/or GSP substation may appear out of scale within the landscape. Indicators: *Intricate small-scale fields*

Factors Used to Judge Susceptibility	Definition	
	Lower Susceptibility	**Higher Susceptibility**
	Simple/regular/uniform field pattern *A large proportion of unmanaged/ high hedgerows/field boundaries*	*Mosaic of complex/rugged/ irregular field patterns* *Intimate landscapes* *Large to vast, unenclosed landscapes* *Ancient field patterns* *Open landscapes with field boundaries characterised by a large proportion of well-managed, low hedgerows, fences and/or walls.*
Human influence	This factor is concerned with the presence of built structures and human intervention in the landscape. The scale and style of the CSE compound and/or GSP substation is important in this regard as design can help it integrate into the context of the landscape. The presence of modern infrastructure (particularly agricultural or commercial buildings of a similar scale to a CSE compound and/or GSP substation), in addition to transport, utility or communication infrastructure or industrial development, may reduce landscape susceptibility as may the visible influence of quarrying, commercial forestry or landfill. The frequency of built form and human intervention in more contemporary, densely settled areas may also indicate a reduced susceptibility to the introduction of a CSE compound and/or GSP substation, although settlements and buildings of a more historic or of vernacular character may sit less comfortably with a CSE compound and/or GSP substation, thereby increasing sensitivity.	
	The landscape includes overt man-made structures or land use, and a new CSE compound and/or GSP substation would be relatively unobtrusive. Indicators: *Modern urban development/ infrastructure* *Inappropriate use of construction materials* *Presence of industrial-scale movement (e.g. quarrying, commercial forestry)* *Busy, frequently accessed*	The landscape does not include overt man-made structures or land use, and a new CSE compound and/or GSP substation may form a substantial intrusion. Indicators: *Sparsely settled/rural/farms* *Unpopulated areas* *Presence of historic/vernacular buildings/structures or settlement* *Small-scale residential settlement/ no large-scale modern development* *Quiet, calm* *Rarely accessed*

Landscape Sensitivity

2.4.15 The susceptibility and value of each landscape receptor were considered together to determine the sensitivity of the receptor. It should be noted that the relationship between susceptibility to change and value can be complex and is not linear. For example, a highly valued landscape (such as Dedham Vale AONB) may in some areas have a low susceptibility to change, due to the characteristics of the landscape and the nature of the project.

2.4.16 Paragraph 5.46 of GLVIA3 recognises that the complexity of the relationship between the value of a landscape (in policy terms) and its susceptibility to the project is an important consideration when assessing the changes in, or close to, designated landscapes. The following examples are provided:

- *'An internationally, nationally or locally valued landscape does not automatically, or by definition, have high susceptibility to all types of change.*
- *It is possible for an internationally, nationally or locally valued landscape to have relatively low sensitivity to change resulting from the particular type of development in question, by virtue of both the characteristics of the landscape and the nature of the proposal.*
- *The particular type of landscape change or development proposed may not compromise the specific basis for the value attached to the landscape.'*

2.4.17 GLVIA3 recognises that designated landscapes do not necessarily have high sensitivity, particularly if they lie to the edge of a designated area. This is because the boundaries of designated landscapes were often defined following roads or other physical features and potentially included land within the boundary that did not necessarily meet the designation criteria. Conversely, an area close to, but outside of, a designated area may have very high sensitivity if it forms part of the setting of the designated area. Therefore, although nationally designated landscapes, such as Dedham Vale AONB, may be accorded the highest level of value in the assessment, and the default position is that the sensitivity of the landscape is high, it may be the case that the susceptibility of the local landscape within the designated area may not be high, for example because the criteria and factors used to support the case for designation are underrepresented in the specific study area. In this case, the sensitivity of the landscape may as a result be classed as medium (where this occurs, it has been justified and documented).

2.4.18 The sensitivity of the landscape was recorded as very high, high, medium-high, medium, medium-low or low as described in Table 1.1 in ES Appendix 5.4: Assessment Criteria (**application document 6.3.5.4**).

2.5 Judging Magnitude of Change

2.5.1 As explained in paragraph 5.48 of GLVIA3, the nature or magnitude of change that is likely to occur was determined by considering the following factors:

- Size/scale;
- Geographic extent; and
- Duration and reversibility.

Size/Scale

2.5.2 The size/scale of a landscape change was determined by considering the amount of change experienced, including the extent or proportion of loss or addition of existing landscape elements, the degree to which aesthetic or perceptual aspects of the landscape may be altered and whether the change affects its key characteristics and overall character (Table 2.6).

Table 2.6 – Judging the Size/Scale of Change on Landscape

Smaller Scale		Larger Scale
The project would be accommodated satisfactorily within the landscape context (i.e., it fits into the landscape) and would not alter the perception of the landscape. It would not affect the key characteristics of the landscape.		The project would have a strong influence on perception of the landscape and would conflict with or override its key characteristics.

Geographic Extent

2.5.3 The geographic extent is the area over which changes in landscape are experienced. It is not the same as size/scale, as a small-scale change may cover a wider area, or vice versa.

2.5.4 For landscape, the geographic extent was described as being: at the site level within the Order Limits; within the immediate setting of the project; at the scale of the local character area; or, on a larger scale and affecting several character areas (Table 2.7).

Table 2.7 – Judging the Geographic Extent of Change on Landscape

Limited Extent		Wider Extent
The project would be seen only locally, with limited consequences on wider landscape character.		The project would have a widespread influence on perception of the landscape.

Duration and Reversibility

2.5.5 In accordance with GLVIA3, these are separate but linked considerations. Duration of change was described as:

- Short term (0–5 years);
- Medium term (5–15 years); or
- Long term (>15 years).

2.5.6 Reversibility refers to whether the predicted effects are reversible, rather than the development itself. Whilst in theory all landscape and visual effects are reversible, through complete removal of a proposed development and reinstatement of existing conditions, this is not always the case, whether related to reinstatement following temporary works or mitigation of effects of permanent works.

Overall Judgement on Magnitude

2.5.7 The judgements on the size/scale of changes proposed by the project, geographic extent and duration and reversibility were considered together to derive an overall magnitude of predicted change for each receptor, which was determined through informed professional judgement guided by the indicative criteria set out in Table 1.2 of ES Appendix 5.4: Assessment Criteria (**application document 6.3.5.4**).

2.5.8 The magnitude of change was recorded as large, medium-large, medium, medium-small, small, negligible or no change as defined in Table 1.2 of ES Appendix 5.4: Assessment Criteria (**application document 6.3.5.4**). The rationale in support of the assessment was explained for each receptor so that it is clear how each judgement was made.

2.5.9 The rationale in support of the assessment is set out for each receptor so that it is clear how each judgement was made. For some receptors, the judgement on magnitude was adjusted (either up or down) to reflect the duration of the change and whether it is likely to be reversible.

2.5.10 For the assessment of magnitude for construction impacts, the presence of the proposed 400kV overhead line, GSP substation and CSE compounds was not considered, in order to concentrate on the impact of the construction activities taking place. These elements were considered in terms of operational impacts.

2.6 Judging Levels of Landscape Effect and Significance

2.6.1 The final step in the assessment required the judgements of sensitivity and magnitude of effect to be considered together to make an informed judgement on the level and significance of each landscape effect. This required the application of professional judgement and experience to balance the many different variables which were given different weight according to site-specific and location-specific considerations in every instance. Judgements were made on a case-by-case basis, guided by the matrix set out in Illustration 5.1 in Chapter 5: EIA Approach and Method (**application document 6.2.5**). Significance was recorded as major, moderate, minor or neutral and as either adverse or beneficial.

2.6.2 Any effect identified as moderate or major is considered significant.

2.6.3 Each of the categories covers a broad range of effects and represents a continuum or sliding scale. Because the categories cover effects across a relatively wide range, judgements are sometimes made about whether particular effects are at the higher or lower end of a category with explanations of why these conclusions have been reached.

3. Visual Assessment Methodology

3.1 Guidance Specific to Visual Assessment

3.1.1 The term 'visual effects', as defined in paragraph 2.21 of GLVIA3, means impacts or changes to *'specific views and on the general visual amenity experienced by people'*. In accordance with GLVIA3, the assessment focused on public views experienced by those groups of people who are likely to be most sensitive to change due to the project. These include:

- Local communities (where views contribute to the landscape setting enjoyed by residents in the area);
- People using recreational routes including Public Rights of Way and cycle routes; and
- People visiting recreational features and attractions (some of which may have historic or cultural heritage importance).

3.1.2 The visual assessment followed a standard approach:

- Establish baseline conditions against which the impacts of the project are assessed. This includes consideration of the future baseline;
- Determine the nature of the visual receptor likely to be affected, i.e., its sensitivity (which in turn combines judgements about its susceptibility to change arising from a specific proposal with judgements about the value attached to it);
- Predict the nature or magnitude of the change likely to occur, which combines judgements about the likely size and scale of the change, the extent of the area over which it is likely to occur, whether the impact would be direct or indirect, reversible or irreversible, short, medium or long term in duration and whether it is positive, neutral or negative; and
- Assess the level of importance of any visual effects and whether they are likely to be significant. This is done by considering the predicted magnitude of change together with the sensitivity of the landscape, taking into account any proposed mitigation measures.

3.2 Approaches

Approach to Assessment of the 400kV Overhead Line Component

3.2.1 The assessment of the visual impacts arising from the overhead line component of the project had to take account of the existing 400kV overhead line and 132kV overhead line already present in the landscape and considered as part of the baseline.

3.2.2 The existing 132kV overhead line would be removed as part of this project. Much of the proposed 400kV overhead line would comprise sections of new overhead line parallel to the existing 400kV or a new 400kV overhead line which deviates away from the existing 400kV overhead line. The project includes modifications to the existing 400kV overhead line, for example around Hintlesham Woods, where it is not simply the removal and

reinforcement of the 132kV overhead line along its current route. The factors which were considered relevant to the assessment comprise:

- The distance between the two 400kV overhead lines;
- The extent of the view they are likely to affect and whether this would be greater than the area currently affected by the existing 400kV overhead line and the 132kV overhead line to be removed;
- The overall character and value of the existing view;
- The siting and design of the two overhead lines, as it is important to avoid pylons of markedly different designs or scales being located or viewed in juxtaposition with each other;
- The presence of other lower voltage overhead lines, wind turbines and other vertical features which together may affect the character of the landscape; and
- The potential for mitigation either through undergrounding of lower voltage lines or planting.

3.3 Baseline Data Gathering

Visual Baseline

3.3.1 The first stage in the visual assessment was to establish the nature of the existing views and visual amenity experienced by people in the locality, as this formed the basis for the identification and description of the likely visual changes that may result from the project.

3.3.2 This involved establishing the areas from where the project may be seen, the different groups of people who may have views of the different components of the project, the locations or viewpoints where they would be affected, and the nature of the existing views experienced at those viewpoints. This is referred to as the 'baseline visual environment' or 'visual baseline'.

3.3.3 The landscape (and therefore views) is dynamic and is influenced by social, economic, technological and climatic changes, all of which can influence patterns of land use, land cover and land management. As such, the baseline for the visual assessment is constantly evolving.

3.3.4 Information was gathered from a wide range of sources including:

- Ordnance Survey maps and aerial photography;
- Stakeholder feedback;
- Local Development Plans and planning policy; and
- Seasonal site visits.

Surveys

3.3.5 The findings of the desk-based study were supplemented with a programme of seasonal site surveys undertaken during April 2021, May 2021 and March 2022 to fully understand the visual baseline.

Communities

3.3.6 In order to assess the impacts on communities, the study area was divided into community areas, which were defined using the local parish boundaries.

Viewpoint Surveys

3.3.7 A series of visual site surveys were undertaken for a selection of agreed representative public viewpoints, representing a variety of receptor types and a range of distances from the project. Viewpoint locations were discussed with the relevant stakeholders, including the relevant planning authorities and Natural England in May 2021. Surveys included viewpoint photography, which were supplemented by wireframes as presented in ES Appendix 6.4: Viewpoint Assessment (**application document 6.3.6.4.1** to **6.3.6.4.7**).

3.3.8 Viewpoints were selected to represent the different groups of people likely to be affected by the project. It should be noted that it is the people who would be experiencing the view from the viewpoint that are the receptor, not the viewpoint itself. The location affords the view to the recipient, and whilst the location cannot change, the opinion of the viewer can be variable. These people generally have different responses to a change in view depending on their location, the activity they are engaged in and other factors, including the weather and the time of day/year.

3.3.9 The selection of viewpoints was informed by the Zone of Theoretical Visibility analysis, by site visits, by desk-based research on access and recreation (including footpaths, bridleways and public land), tourism including popular vantage points, and by the distribution of the different groups of visual receptor.

3.3.10 It should be noted that the visual assessment has been undertaken based on an eye level of 1.5m to 1.7m (GLVIA3). Where located on bridleways, it is acknowledged that the eye level of a receptor may be higher but would be variable based on the height of the rider and size of horse. It is unlikely that the visual effects for riders would differ substantially from a normal eye height in most cases and therefore is not considered in this assessment.

3.3.11 Viewpoints were examined in detail to determine the value of the view and the magnitude of change that would be likely to arise from the project during construction, operation in Year 1 and operation Year 15. The value of a view and magnitude of change does not change depending on the receptor and can therefore be reported on by viewpoint. Reinstatement hedgerow and tree planting was taken into account at Year 1 as this would be in place immediately following construction activities. The benefits of planting vegetation for screening purposes were not taken into account at Year 1 but were considered at Year 15 when planting would be established.

3.3.12 Viewpoint analysis involved visiting each viewpoint location and viewing wireframes prepared for each location. The fieldwork was conducted in a range of conditions, all viewpoints being visited at least once in fine weather condition in leaf cover.

3.3.13 The visual assessment focused on the wider visual amenity of people living and moving around settlements or aggregated groups of dispersed properties. Wherever practicable, viewpoints were selected to represent several different receptor groups (e.g., on the edge of a settlement where a footpath leaves the village, at a car park and picnic site on a promoted footpath, or at a trig point in an area of open access land).

3.4 Evaluating Visual Sensitivity

Value of the View

3.4.1 Judgements on the value attached to a view are unrelated to the nature of the project, whilst judgements on susceptibility may vary depending on the type of receptor and the level of interest they may have in their surroundings.

3.4.2 In terms of value, at one end of the scale are locations where receptors experience a highly valued, impressive or well composed view, with no detracting features. These locations are likely to be frequented by relatively high numbers of people. At the other end of the scale are locations where the nature of the view is of limited value or poorly composed with numerous detracting features. Such locations are less likely to be popular.

3.4.3 An overall evaluation of the relative value of the view was made and recorded as either very high, high, medium or low as described in Table 1.1 of ES Appendix 5.4: Assessment Criteria (**application document 6.3.5.4**).

Susceptibility of Visual Receptors

3.4.4 In terms of peoples' susceptibility to changes to their view, GVLIA3 defines this as, '*the ability of a defined visual receptor to accommodate the specific proposed development without undue negative consequences*'.

3.4.5 The primary determinant of visual susceptibility is the main activity of the receptor. For example, people engaged in outdoor recreation where the focus of the activity is on the enjoyment of the landscape, are assessed to be of high susceptibility. People who are travelling on road, rail or other transport routes tend to be less sensitive and placed in the medium or low category. Exceptions to this include a road that is specifically recognised as a scenic route when awareness of the landscape is likely to be particularly high. People engaged in outdoor recreation or sport which does not involve or depend on an appreciation of the landscape and people at their place of work, where the setting is not important to the quality of working life, are assessed to be of low susceptibility. Susceptibility was recorded as high, medium or low.

3.4.6 These divisions are not black and white and the nature of the groups of people who are likely to be affected and the extent to which their attention is likely to be focused on views and visual amenity, as well as the nature of the baseline view, had to be carefully considered. The specific circumstances behind individual judgements was explained in each case and linked back to the visual baseline assessments.

Sensitivity of Visual Receptors

3.4.7 An assessment of the sensitivity of visual receptors was made by combining judgements about the value attached to the view (which is established and reported as part of the baseline) with judgements about the susceptibility of the receptor to change arising from the project. However, for visual receptors the sensitivity is primarily derived from the susceptibility of the visual receptor to the project.

3.4.8 The sensitivity of a visual receptor was recorded as very high, high, medium or low as defined in Table 1.1 of ES Appendix 5.4: Assessment Criteria (**application document 6.3.5.4**).

3.5 Judging Magnitude of Change

Factors Contributing to Magnitude

3.5.1 As explained in paragraph 6.38 of GLVIA3, the nature or magnitude of change that is likely to occur was determined by considering the following factors:

- Size/scale;
- Geographic extent; and
- Duration and reversibility.

Size/Scale

3.5.2 The size/scale of visual change was determined by considering the amount of change experienced by a receptor, which is influenced by a combination of the following factors:

- Scale: The scale of change in the view with respect to the loss or addition of features in the view and changes in its composition including the proportion of the view occupied by the project. This was described in the assessment by reference to the size of the pylons and the field of view that they occupy using words such as 'dominant', 'prominent' and 'noticeable';
- Contrast: The degree of contrast or integration of any new features or changes in the view with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour and texture. Developments which contrast or appear incongruous with their surroundings are more likely to be visible and lead to a higher magnitude of change;
- Duration: Whether the change in the view is temporary or permanent;
- Speed of travel: This affects how long a view would be experienced (continuously, intermittently, glimpsed either once or repeatedly and sequentially along a route) and the possibility that a development would be noticed;
- Screening: Screening by buildings, landform or vegetation (including seasonal variations in deciduous leaf cover) may wholly or partly obstruct or screen views of the project. Visual receptors with open views are more likely to experience a larger magnitude of visual change; and
- Skylining/backgrounding: Whether a development is viewed against the sky or against a solid background such as landform or vegetation can affect the level of contrast and scale. For example, pylons, conductors and other electricity infrastructure are more difficult to discern when viewed against a textured background than against an open sky background. Any backgrounding reduces the scale of change on the view as is acknowledged in the Holford Rules.

Geographic Extent

3.5.3 The geographic extent is the area over which visual change is experienced. It is not the same as size/scale as a small-scale change may cover a wider area, or vice-versa.

3.5.4 The geographic extent varies with different viewpoints and reflects:

- Angle of view: This applies both horizontally and vertically. Views up to a development are generally considered to be of greater magnitude due to the enhanced vertical height of the structures than views down to a development where the apparent height appears reduced. Developments which would be seen directly in front of the viewer are likely to be more visible than developments which would be seen obliquely. Road users are typically more aware of the views in the direction of travel, whilst rail users tend to be more aware of views to the side;
- Distance: The distance of the viewpoint from development is measured objectively and used to determine the apparent height of the project in the landscape at the viewpoint. Apparent height or angular size of an object is the height that an object appears at arm's length and is calculated by considering the known height of an object and distance from that object. For information, for a 50m tall pylon, the apparent height at 10km is 0.31cm, at 5km is 0.61cm, at 3km is 1.02cm and at 1km is 3.05cm. Distance can be a strong indicator of the magnitude of visual change, although apparent height of a development can be affected by the landscape surrounding it; and
- Extent of visibility: The geographic extent of the area over which the changes to the view would be visible, which is defined by the distance, area and the horizontal and vertical field of the view affected.

Duration and Reversibility

3.5.5 In accordance with GLVIA3, these are separate but linked considerations. Duration of effect was described as:

- Short term (0–5 years);
- Medium term (5–15 years); or
- Long term (>15 years).

3.5.6 Reversibility refers to whether the predicted effects are reversible, rather than the project itself. Whilst, in theory, all landscape and visual effects are reversible, through complete removal of a project and reinstatement of existing conditions, this is not always the case, whether related to reinstatement following temporary works or mitigation of effects of permanent works.

Overall Judgement on Magnitude

3.5.7 The judgements on the size/scale of changes proposed by the project, geographical extent and duration and reversibility were considered together to derive an overall magnitude of predicted change for each receptor, which was determined through informed professional judgement guided by the indicative criteria set out in Table 1.2 of ES Appendix 5.4: Assessment Criteria (**application document 6.3.5.4**).

3.5.8 The magnitude of change was recorded as large, medium-large, medium, medium-small, small, negligible or no change as defined in Table 1.2 of ES Appendix 5.4: Assessment Criteria (**application document 6.3.5.4**). The rationale in support of the assessment was explained for each receptor so that it is clear how each judgement was made.

3.5.9 For some receptors, the judgement on magnitude may have been adjusted (either up or down) to reflect the duration of the change and whether it is likely to be reversible.

3.5.10 For the assessment of magnitude for construction impacts, the presence of the proposed 400kV overhead line, GSP substation and CSE compounds was considered, so as to concentrate on the impact of the construction activities taking place. These elements were considered in terms of operational impacts.

3.6 Judging Levels of Visual Effect and Significance

3.6.1 The final step in the assessment required the judgements of sensitivity and magnitude of effect to be considered together to make an informed professional assessment on the level and significance of each visual effect. This required the application of professional judgement and experience to balance the many different variables which were given different weight according to site-specific and location-specific considerations in every instance. Judgements were made on a case-by-case basis, guided by the matrix set out in Illustration 5.1 in Chapter 5: EIA Approach and Method (**application document 6.2.5**). Significance was recorded as major, moderate, minor or neutral and as either adverse or beneficial.

3.6.2 Any effect identified as moderate or major is considered significant.

3.6.3 Each of the categories covers a broad range of effects and represents a continuum or sliding scale. Because the categories cover effects across a relatively wide range, judgements were sometimes made about whether particular effects are at the higher or lower end of a category with explanations of why these conclusions were reached.

3.6.4 Paragraph 6.42 of GLVIA3 notes that significance of visual effects is not absolute and *'can only be defined in relation to each development and its specific location'*.

3.6.5 Paragraph 6.44 of GLVIA3 notes that:

- *'effects on people who are particularly sensitive to changes in views and visual amenity are more likely to be significant;*
- *effects on people at recognised and important viewpoints or from recognised scenic routes are more likely to be significant;*
- *large-scale changes which introduce new, non-characteristic or discordant or intrusive components into the view are more likely to be significant than small changes or changes involving features already present in the view; and*
- *where assessments of significance place visual effects between these extremes, judgements must be made about whether or not they are significant, with full explanations of why these conclusions have been reached.'*

4. Photography and Wireline Methodology

4.1 General Site Photography

4.1.1 Site photography was undertaken during the site visits. For each of the representative viewpoints, a panoramic photograph was taken for use on viewpoint sheets and as a record of the site visit. Photography was undertaken using the following method:

- An overlap of at least 25% between shots to create the panoramic photo;
- In relation to panoramic photography, professional judgement was applied. Full 360-degree photography was only taken where access (e.g., not in proximity to residential properties) and safety allowed. In all other cases, photographic coverage was proportionate to the coverage required to illustrate the visual effects of the project in context. Generally, for panoramas, 180-degree coverage was sufficient;
- When taking photographs, the photographer turned the camera round with the lens directly over their left foot in portrait orientation. This is regarded as best practice for taking panoramic photography in the field without a tripod;
- The camera was focused once to the middle distance and then set to manual focus so that all shots are consistent in focus distance; and
- All images were captured in jpeg format.

4.1.2 Panoramas were produced by stitching multiple site photographs into single panoramic images (using PTGui stitching software).

4.1.3 Single shot images were also taken to capture particular landscape features/elements for use in the understanding of landscape character.

4.2 Wirelines

4.2.1 Wireframe diagrams were prepared showing the outline of the project superimposed on a baseline photograph. These are computer-generated line drawings, based on the digital terrain model combined with information about the location and scale of components of the project, to give a relatively simple indication of how the project would appear from different viewpoints. Wireframe diagrams were produced for all viewpoints in order to assist the assessment process.

4.2.2 For each viewpoint, wireframe renders were generated using software called TrueViewVisuals. These were produced based on a digital terrain dataset (Ordnance Survey (OS) Terrain 50) using a model of the project to provide an accurate depiction of the appearance of the project.

4.2.3 The wireframes represent the maximum theoretical visibility of the project on bare ground (i.e., assuming no vegetation, buildings or other vertical structures are present to provide any screening). In reality, the visibility of the project would be variable and would also depend on both the weather and the lighting conditions.

4.2.4 As the existing 400kV overhead line to be retained and the 132kV overhead line to be removed are integral parts of the baseline, they were included on the baseline wireframes for comparison against the wireframes of the project. Existing pylons, gantries and conductors which are being retained are depicted in black. The project, including pylons,

gantries, CSE compounds and GSP substation are shown in red. Pylon locations are based on the Proposed Alignment as shown on ES Figure 4.1: The Project (**application document 6.4**).

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