The Great Grid Upgrade

North Humber to High Marnham

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North Humber to High Marnham

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1. Introduction

1.1 Overview

1.1.1 This Appendix to **Application Document 6.7 Chapter 7 Visual** describes the methodology used in the production of **Application Document 6.7 Chapter 7 Visual**. It describes the methods used to determine the baseline conditions, sensitivity of the receptors, the magnitude of change and the approach to judging the level or importance of likely visual effects.

1.1.2 The methodology is an updated version of that submitted as part of **Application Document 6.5.A1 Appendix 5.1 Environmental Impact Assessment Scoping Report** and takes into account comments received as part of **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion** and statutory consultation.

1.1.3 The visual assessment considers the changes to specific views and general visual amenity experienced by people (visual receptors) whilst the assessment of landscape effects considers the changes to the landscape as a resource in its own right (landscape receptors).

1.1.4 Landscape and visual assessments are inter-related. Visual effects can be considered independently of the effect on the landscape in which it is seen, but landscape effects require consideration of the visual effects of the Project.

1.2 Guidance Specific to Visual Assessment

1.2.1 In accordance with the approach to the Environmental Impact Assessment (EIA) outlined in **Application Document 6.5 Chapter 5 Environmental Impact Assessment Approach and Methodology**, the visual assessment, cumulative visual assessment, and presentation of visual effects adhere to relevant legislation. Additionally, the assessment follows the applicable guidelines, as they apply to the Project, including:

- Guidelines for Landscape and Visual Impact Assessment – 3rd Edition (GLVIA3) (Landscape Institute and IEMA, 2013);
- Technical Guidance Note (TGN) 01/24 Notes and Clarifications on aspects of the 3rd Edition Guidelines for Landscape and Visual Impact Assessment (Landscape Institute, 2024);
- Technical Guidance Note 02/19 Residential Visual Amenity Assessment (RVAA) (Landscape Institute, 2019);
- Technical Guidance Note 06/19 Visual Representation of Development Proposals (Landscape Institute, 2019); and
- Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (Planning Inspectorate, 2024);

1.3 Definition of Visual Effects

Visual Receptors

1.3.1 The assessment of visual effects, as defined in paragraph 2.21 of GLVIA3 (Landscape Institute and IEMA, 2013), means *'specific views and the general visual amenity experienced by people'*.

1.3.2 In accordance with GLVIA3 (Landscape Institute and IEMA, 2013), the assessment focuses on public views experienced by those groups of people who are likely to be most sensitive to change and therefore most likely to experience significant visual effects from the Project. These include:

- People living and moving around defined settlements, smaller scattered communities, and more isolated individual residences (where views contribute to the landscape setting enjoyed by residents in the area).
- People using recreational routes including nationally designated trails, promoted regional trails and National Cycle Network (NCN) routes where the wider landscape and views may be appreciated whilst undertaking the activity.
- People visiting recreational features and attractions (some of which may have historic or cultural heritage importance) where an appreciation of the wider landscape and views is an integral part of the activity. This includes people visiting designated landscapes.

1.3.3 The Planning Inspectorate agreed in their comments (ID 3.28 and 3.29) in **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion** that effects on people using the road or rail network or those working within the study area, could be scoped out of further assessment as an appreciation of the wider landscape and views is generally not integral to their activities. These receptors are typically considered to have lower susceptibility to changes in the view and will often share views of the Project with receptors who have a greater susceptibility.

Residential Visual Amenity

1.3.4 The routeing process has sought to avoid potential effects on the views and visual amenity of residential receptors wherever possible. The effects on private visual amenity at individual properties is considered in **Application Document 6.7.A5 Appendix 7.5 Residential Visual Amenity Assessment** which has followed guidance in TGN 02/19 (Landscape Institute, 2019) as explained in section 3.

2. Approach to Visual Assessment

2.1 Assessing Visual Effects

2.1.1 The methodology used for conducting the visual assessment builds upon the general assessment methodology for the EIA outlined in **Application Document 6.5 Chapter 5 Environmental Impact Assessment Approach and Methodology**. This ensures that the visual assessment follows a consistent and structured approach in line with the overall EIA methodology.

2.1.2 Guidelines for Landscape and Visual Impact Assessment – 3rd Edition (Landscape Institute and IEMA, 2013) and associated TGN 01/24 Notes and Clarifications (Landscape Institute, 2024) are the established good practice guidance for landscape assessment and comply with the requirements of National Policy Statement (NPS) for Energy (EN-1) (Department for Energy Security & Net Zero, 2025) and NPS for Electricity Networks (EN-5) (Department for Energy Security & Net Zero, 2025).

2.1.3 It is emphasised in GLVIA3 (Landscape Institute and IEMA, 2013) that the assessment should reflect the scale and complexity of the development, focusing on the likely significant effects rather than every possible effect. This approach allows for scoping out receptors where significant effects are unlikely, resulting in a more concise and meaningful assessment.

2.1.4 The GLVIA3 (Landscape Institute and IEMA, 2013) approach to assessing visual effects is summarised as follows:

- **Identify a study area**: This is the geographical area where potential visual effects from the Project could be experienced. The extent of the study area is determined by preparing Zone of Theoretical Visibility (ZTV) maps, which indicate the visual receptors likely to be affected by the presence of the Project. The ZTV maps help define the spatial scope for assessing visual impacts.
- **Establish baseline conditions**: This involves collating baseline information through desk studies and field/photographic surveys to evaluate the current visual conditions across the study area. The baseline includes the identification of visual receptors who are of higher susceptibility to the Project, an appraisal of existing views and visual amenity, and a professional judgement on the relative value of the views and general visual amenity currently experienced. Recognising that landscapes are dynamic, potential future changes independent of the Project are also considered, although these do not form the basis of the assessment.
- **Determine visual receptor sensitivity**: This involves making separate professional judgements on the relative value of the view and the susceptibility of the visual receptors to changes introduced by the Project.
- **Assess effects on visual receptors**: This involves evaluating effects based on their size/scale, geographical extent, and their duration and reversibility. This analysis helps determine the magnitude of change likely to occur.
- **Apply professional judgement**: This requires making an overall judgement on the significance of effects by weighing the value of the view and susceptibility of

the visual receptors with the magnitude of the anticipated change introduced by the Project.

2.1.5 This structured process allows for a comprehensive evaluation of how views would be impacted and whether the changes are likely to result in significant effects.

2.2 Assessing Cumulative Effects

2.2.1 There are two major sources of cumulative effects: 'intra-project' and 'inter-project' effects as described below:

- Intra-project effects (also referred to as combined or interactive effects) occur when a single receptor is affected by multiple sources of impact from within the same project, where different aspects of the project act together to influence that receptor.
- Inter-project cumulative effects arise when a receptor is affected by impacts from two or more separate projects at the same time, which may increase the overall level of effect. Although each individual project's effects may not be significant on their own, their combined influence could result in a significant cumulative effect.

2.2.2 For the purposes of assessing the cumulative effects of the Project, existing developments, such as wind turbines and other vertical infrastructure (e.g., overhead lines and telecommunications masts), are treated as part of the baseline environment, as detailed in section 7.6 of **Application Document 6.7 Chapter 7 Visual**.

2.2.3 The assessment of cumulative effects for the Project is presented in **Application Document 6.20 Chapter 20 Intra-project Cumulative Effects** and **Application Document 6.21 Chapter 21 Inter-project Cumulative Effects**. These consider the contribution of the Project to the total cumulative landscape effect created by the construction and operation of the relevant developments that are listed in **Application Document 6.21 Chapter 21 Inter-project Cumulative Effects**.

2.3 Study Area

2.3.1 The study area for the visual assessment was determined by the potential visibility of the Project in the landscape and is proportionate to the size and scale of the Project and nature of the surrounding landscape. Paragraph 5.2 of GLVIA3 (Landscape Institute and IEMA, 2013) states that the study area should include:

'the full extent of the wider landscape around it which the Proposed Development may influence in a significant manner'.

2.3.2 The study area for the assessment extends 5 km from the Limits of Deviation (LoD)[1].

2.3.3 To inform the assessment, a ZTV map has been produced based on the pylon heights for the proposed overhead line, as set out in **Application Document 6.4.A1 Appendix 4.1 Indicative Pylon Schedule** and following the approach set out in this appendix. The ZTV map is shown on **Application Document 6.7.F2 Figure 7.2**

[1] At scoping a 5 km offset from the Project was assumed as a worst-case scenario but as the Project continued to be reviewed during the assessment process (and following receipt of early design information), it became apparent that likely significant effects would derive from activities and infrastructure within the LoD. Therefore, for proportionality reasons, a more focussed study area was adopted based on an offset from the LoD.

Zone of Theoretical Visibility and indicates the geographical area over which the proposed overhead line could potentially give rise to visual effects.

2.3.4 A 10 km ZTV is typically prepared when assessing the effects of pylons, even where the detailed 5 km study area is limited to 5 km. This is to ensure that the full theoretical extent of visibility is understood and to avoid artificially truncating visibility patterns at the 5 km study area boundary. The approach allows the wider landscape context to be considered and ensures that any unusually tall elements, such as the pylons at the River Ouse crossing, which may be visible over a wide area, are fully evaluated. However, significant landscape and visual effects are generally unlikely beyond 5 km due to reduced scale and perceptibility with distance. Therefore, the main assessment focuses on the 5 km study area, where significant effects are most likely to occur due to proximity to the Project and/or receptor sensitivity, and where a proportionate level of detail is required in line with best-practice guidance (Landscape Institute and IEMA, 2013). This approach avoids unnecessary assessment of areas where effects are expected to be negligible (such as longer-range views with very limited visibility).

2.3.5 Where sensitive receptors have been identified outside the 5 km study area that warranted consideration, the residual effects have been identified on a case-by-case basis.

2.3.6 The 10 km ZTV has been used to inform the assessment of potential cumulative effects as presented in **Application Document 6.21 Inter-project Cumulative Effects.**

Approach to Defining the Study Area

2.3.7 The study area was informed by guidance on the perceived height of pylons when seen at varying distances (Gillespies, 2014). This study used a mathematical model to calculate the apparent height of a pylon when its true height and distance from a viewer are known.

2.3.8 The apparent height of a pylon is defined as the height that the structure would appear at arm's length (61 cm) from the viewer (i.e. the structure would appear to be the same height as an 'X' cm high object held at arm's length (61 cm) from the viewer). Using this calculation the apparent height of a 50 m tall pylon was calculated for varying distances from a viewpoint. The results are shown in Table 2.1. A 50 m high pylon was used in the calculation as an example this is the approximate height of the pylons proposed for the Project.

Table 2.1 – Apparent height of 50 m structure when viewed at arm's length

Distance	Apparent Height
100 m	30.50 cm
200 m	15.25 cm
300 m	10.16 cm
400 m	7.63 cm
500 m	6.10 cm

Distance	Apparent Height
1000 m (1 km)	3.05 cm
2000 m (2 km)	1.53 cm
5000 m (5 km)	0.61 cm
10000 m (10 km)	0.31 cm

2.3.9 At 5 km, which is the extent of the study area for the visual assessment, the apparent height of a 50 m high pylon is 0.61 cm. At this apparent height, the pylons are highly unlikely to have a significant visual effect. At 10 km, which is the extent of the study area for the cumulative visual assessment, the apparent height of a 50 m high pylon is 0.31 cm. At this apparent height, the pylons alone would not give rise to significant visual effects but when seen alongside another development, the overall effect of both projects may be considered significant.

2.4 Baseline Data Gathering

2.4.1 The visual baseline has established the general area from which the Project may be visible. In accordance with page 32, paragraph 3.15 of GLVIA3 (Landscape Institute and IEMA, 2013) this includes:

'the different groups of people who may experience views of the development, the places where they will be affected and the nature of the views and the visual amenity at those points'.

2.4.2 Changes in views may be experienced by people at different locations within the study area including from static locations and when moving through the landscape (normally referred to as sequential views, e.g., from footpaths, cycle routes or canals).

2.4.3 The baseline describes the current visual conditions across the study area and includes an assessment of any changes that would occur without the Project i.e., the future baseline.

2.4.4 The baseline has been established using published landscape character assessments, which are then verified through field surveys to ensure accuracy and sufficient detail for the visual assessment.

Viewpoint Selection

2.4.5 Visual effects are reported by reference to the jurisdiction boundaries of parishes across the 5 km study area. The views experienced by visual receptors within the parishes are illustrated by representative viewpoints that have been agreed with local planning authorities and other relevant stakeholders. Additional viewpoints were added in response to comments received at statutory consultation.

2.4.6 Viewpoint locations have been carefully selected to provide suitable representation of the likely visibility of the Project. These representative viewpoints are all in publicly accessible locations. The final viewpoint locations were confirmed by way of field survey and microsited to take account of the presence of localised screening. Each viewpoint has been visited and photography from each of the viewpoints undertaken

in accordance with TGN 06/19 (Landscape Institute, 2019) to illustrate the existing characteristics of the view. These characteristics are detailed in the baseline descriptions provided in **Application Document 6.7.A3 Appendix 7.3 Viewpoint Assessment**, prior to undertaking the assessment of visual effects. More information on photography is available in section 4.1.

2.4.7 As stated, viewpoint selection is based on desk-top analysis, consultation feedback and site survey. GLVIA3 Page 109, para 6.19 (Landscape Institute and IEMA, 2013) notes that viewpoints can be representative, specific or illustrative, as it states:

- *'representative viewpoints, selected to represent the experience of different types of visual receptor, where larger numbers of viewpoints cannot all be included individually and where the significant effects are unlikely to differ – for example, certain points may be chosen to represent the views of users of selected public footpaths and bridleways;*
- *specific viewpoints, chosen because they are key and sometimes promoted viewpoints within the landscape, including for example specific local visitor attractions, viewpoints in areas of particularly noteworthy visual and/or recreational amenity such as landscapes with statutory landscape designations, or viewpoints with particular cultural landscape associations; and*
- *illustrative viewpoints, chosen specifically to demonstrate a particular effect or specific issues, which might, for example, be the restricted visibility at certain locations.'*

2.4.8 For clarity, 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 vary as people will 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.

Method for Assessing Visual Effects

2.4.9 GLVIA3 (Landscape Institute and IEMA, 2013) states that the sensitivity of visual receptors should be assessed in terms of the susceptibility of the receptor to a change in view and/or visual amenity and the value attached to that view. The magnitude of change should be assessed in terms of the size and scale, geographical extent, duration and reversibility of the effect.

2.4.10 These aspects are considered together, to form a professional judgement regarding the overall significance of visual effect, as illustrated in GLVIA3 Figure 6.1 (Landscape Institute and IEMA, 2013). The remainder of this appendix sets out the methodology in more detail.

Value of the View

2.4.11 The baseline includes a description of the relative value of the view experienced at each viewpoint location and is unrelated to the nature of the Project.

2.4.12 GLVIA3 (Landscape Institute and IEMA, 2013) explains at paragraph 6.37 that the value of a view depends on:

- *'recognition of the value attached to particular views, for example in relation to heritage assets, or through planning designations; and*

- *indicators of the value attached by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment… and references to them in literature or art…'*

2.4.13 A professional judgement on the value of a view is provided in the baseline description for each viewpoint based on desk-based study and field survey. Each viewpoint location has been visited to inform the assessment. Photographs illustrating the view at each location are included in the baseline description provided in **Application Document 6.7.A3 Appendix 7.3 Viewpoint Assessment**.

2.4.14 The value of the view has been categorised as very high, high, medium, or low by applying the indicators listed in Table 2.2. Professional judgements are supported by narrative descriptions linked back to evidence from the baseline study to explain the conclusions reached.

Table 2.2 – Indicators of view value

Category	Indicators
Very High	Iconic view of national or international importance, or a view which is associated with a nationally or internationally designated landscape or heritage asset, the cultural associations of which are widely recognised in art, literature, or other media.
High	View with a generally high scenic value, typically associated with a landscape or heritage asset of national importance. Elements or features within the view are likely to be in good condition, with few discordant features. Little potential for substitution of elements within the view. The view may be within, from or towards a designated heritage asset, or a planning policy designation; and/or mentioned in several guidebooks or on tourist maps; and/or referenced in art and literature but there may be some incongruous features or elements within the view.
Medium	View of scenic value, with moderate local importance and scenic quality. Some potential for substitution of elements within the view. Although the view may be valuable to the local community, the location has no formal planning status, is in an area of ordinary landscape value and potentially includes some discordant elements or features. The value of such views to the local community may have been identified as part of the consultation process and through site visits. People are unlikely to visit the viewpoint to experience the view.
Low	View is within an area of low or very low landscape quality (e.g., industrial estate/busy main road) that has very few positive characteristics and many and/or dominant discordant features. The experience of the view is negative.

Establishing Visual Sensitivity

2.4.15 The next step in assessing the importance of the likely visual effects is to determine the sensitivity of the visual receptors to the Project.

2.4.16 The sensitivity of visual receptors has been assessed through two separate considerations:

- Value - established and reported as part of the baseline assessment as explained above.
- Susceptibility to change - determined through informed professional judgement, guided by the indicators set out in Table 2.3.

2.4.17 This approach involves separating sensitivity into value and susceptibility, which slightly differs from the general assessment methodology presented in **Application Document 6.5 Chapter 5 Environmental Impact Assessment Approach and Methodology**. However, it aligns with guidance in GLVIA3 (Landscape Institute and IEMA, 2013) and associated TGN 01/24 Notes and Clarifications (Landscape Institute, 2024).

2.4.18 The susceptibility of the visual receptors to change has been categorised as very high, high, medium, or low by applying the indicators listed in Table 2.3. Professional judgements are supported by narrative description linked back to evidence from the baseline study to explain the conclusions reached.

Table 2.3 – Indicators of visual receptor susceptibility

Category	Indicators
Very High	People visiting locations purely to experience the view and where there is typically a prolonged viewing opportunity. Examples include: • People living and moving around communities where the views are widely recognised as being of the outstanding scenic quality (typically within or to a nationally designated landscape). • People engaged in outdoor recreation where the views are of the highest scenic quality (including views from nationally designated or regionally promoted trails and panoramic viewpoints – often marked on Ordnance Survey plans and providing interpretation facilities). • Visitors to heritage assets or other tourist and visitor attractions where the views are of the highest scenic quality and make an important contribution to the experience.
High	People whose attention or interest is likely to be focused on the view and where there is typically a prolonged viewing opportunity. Examples include: • People living and moving around communities where views contribute to the landscape setting enjoyed by residents. • People engaged in outdoor recreation (including public rights of way) whose interest is likely to be focused on the landscape.

Category	Indicators
	• Visitors to heritage assets where views of the surrounding landscape make an important contribution to the experience. • People travelling on scenic and tourist routes, where attention is focused on the surrounding landscape.
Medium	People whose attention or interest may partially be on the appreciation of their surroundings. Examples include: • People travelling on local roads who may have some interest in their surroundings, but the view is transitory. • People at their place of work whose attention is on their surroundings and where the setting is important to their quality of working life. • People taking part in outdoor sport or recreation where there may be some appreciation of views or the landscape within which the activity is taking place.
Low	People whose attention or focus is on other activities, not on their surroundings. Examples include: • Travellers on major road or rail routes, which are not scenic or tourist routes and where the view is typically experienced at speed. • People at their place of work whose attention is not on their surroundings and where setting is not important to their quality of working life. • People taking part in outdoor sport or recreation which does not involve appreciation of the view.

2.4.19 Paragraph 6.35 of GLVIA3 (Landscape Institute and IEMA, 2013) notes that:

'these divisions are not black and white and in reality, there will be gradation in susceptibility to change. Each project needs to consider the nature of the groups of people who will be affected and the extent to which their attention is likely to be focused on views and visual amenity'.

2.4.20 In accordance with paragraph 5.5 of GLVIA3 (Landscape Institute and IEMA, 2013) and note 5(9) of the TGN 01/24 Notes and Clarifications (Landscape Institute, 2024) professional judgements on view value and visual receptors' susceptibility have not be combined to arrive at a professional judgement on sensitivity but have separately influenced the assessment as part of the overall profile approach which is explained later in this appendix.

1.1 Predicting Magnitude of Change

2.4.21 Paragraph 6.38 of GLVIA3 (Landscape Institute and IEMA, 2013) sets out the criteria which should be considered in reaching a professional judgement on the magnitude of visual change[2]. These include:

'its size or scale, the geographical extent of the area influenced, and its duration and reversibility'.

2.4.22 Page 7 Note 3(3) of the GLVIA3 TGN 01/24 Notes and Clarifications (Landscape Institute, 2024), explains that:

'For magnitude of effect, it is likely that the size/scale of effect will be the most important factor, with geographical extent and duration/reversibility considered as 'modifiers'. When taking account of geographic extent and duration, care should be taken to ensure that the resulting magnitude of effect judgement is not understated'.

Size and Scale of Change

2.4.23 The size and scale of visual change is dependent on the range of factors listed below and has been assessed using professional judgement as large, medium, small or very small:

- The composition of the view with respect to the loss or addition of features in the view, including the nature of the view (full, partial, glimpsed) and the proportion of the view occupied by the Project.
- The distance of the viewpoint from the Project and how this affects its prominence.
- The angle of view affected which affects how much of the view is altered.
- The degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour, and texture.
- The presence of landform, buildings, or vegetation (including seasonal effects due to variations in deciduous leaf cover) which may wholly or partly obstruct views of the Project, allowing only partial or glimpsed views.
- The duration and nature of the visual effect. This can depend on the speed of travel which 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.
- The background or backdrop against which the Project is viewed as this can affect the degree of contrast and scale. For example, pylons, conductors, and other electricity infrastructure are more difficult to discern when viewed against a textured backdrop such as landform or vegetation than against an open sky background.

2.4.24 Other considerations that can influence the magnitude of visual change include the level of activity in a scene, presence of noise or lighting, traffic movement, peoples' likely preferences and expectations, character and quality of the existing view

[2] It is noted that GLVIA3 (Landscape Institute, 2024) uses the term *'magnitude of effect'*, however, the word effect in this methodology is reserved for use when discussing overall levels of effect and significance.

(inevitably a point of professional judgement), nature of the scene (open and directionless, or visually contained by enclosing features) and any other elements that affect how people experience a view.

2.4.25 Wireline visualisations have been prepared to illustrate the existing views from each viewpoint and a selection of viewpoints will be illustrated with photomontage visualisations to provide a photorealistic illustration of the likely changes to a selection of views. Wirelines are included in **Application Document 6.7.A3 Appendix 7.3 Viewpoint Assessment** and photomontages presented in **Application Document 7.16 Photomontages**.

Geographical Extent

2.4.26 Geographical extent in the context of visual assessment refers to the area over which changes would be noticeable, for example whether the Project is visible from a single location or represents a larger area with similar views. Geographical extent is described as large, medium, or small. Professional judgements are informed by the spatial distribution and the level of effect identified at each representative viewpoint. Page 16 Note 6(8) of the GLVIA3 TGN 01/24 Notes and Clarifications (Landscape Institute, 2024), explains that:

'Geographical extent should reflect the relevance of the location and spread of effect.... For example, in considering views from a long-distance footpath it may be relevant to consider both the frequency of use of particular parts of the route and the degree to which visibility arises from those parts of the route. Open views of a development from long stretches of a more frequently used section would be expected to contribute to a greater extent (and magnitude) of effect than a glimpsed view from an overgrown section with little sign of recent use'.

2.4.27 This explanation also allows for the number of people that would experience a change to their view to be brought into the assessment, whether the identified effect affects a relatively small or relatively large number of people.

Duration and Reversibility

2.4.28 The design life of the Project is at least 80 years but with regular maintenance is likely to extend further.

2.4.29 Paragraph 5.51 of GLVIA3 (Landscape Institute and IEMA, 2013) states that duration *'can usually be simply judged on a scale such as short term, medium term or long term'*. For the purposes of the assessment, duration has been determined in relation to the phases of the Project, as follows:

- **Short term** – assumed to cover construction plus one-year reinstatement.
- **Medium term** – assumed to be 2-15 years post construction and include the effects of permanent vegetation loss on the baseline environment.
- **Long term** – assumed to be of a duration that extends longer than 15 years post construction once any committed mitigation planting has achieved its design intention.

2.4.30 The duration of the effect can also be described as temporary, transient (whether continuous or intermittent) or seasonal (views which would be subject to seasonal leaf cover).

2.4.31 In relation to reversibility, GLVIA3 (Landscape Institute and IEMA, 2013) requires consideration of whether effects are likely to be reversible or irreversible (permanent). This is related to whether the change can be reversed – for example following the completion of construction activities – or at the end of the operational lifespan of the Project.

2.4.32 As noted in **Application Document 6.5 Chapter 5 Environmental Impact Assessment Approach and Methodology**, the decommissioning phase of the Project has been scoped out of the EIA on the basis that the Project will remain in place and be operational for an indeterminate timescale. Accordingly, the visual assessment adopts a worst-case assumption that all reported operational effects of the Project will be irreversible (i.e. permanent).

Making Professional Judgements

2.4.33 Combining the three separate considerations (size/scale of effect, geographical extent of the effect, and duration and reversibility) in one rating for magnitude of change can distort the aim of identifying significant effects. For example, an increased magnitude of change, based on size/scale, may be reduced to a lower rating if it occurred in a localised area or for a short duration. This might mean that a potentially significant effect may be overlooked if impacts are moderated down due to their geographical extents and/or duration/reversibility. To address this, professional judgements on magnitude are initially based on the size/scale of the change and have then been adjusted to account for the duration of the change and its reversibility. Additionally, a separate description of the geographical distribution of effects across the study area has been provided in the visual assessment summary to ensure that significant effects are not overlooked.

2.4.34 The magnitude of visual change is categorised as large, medium, small, or very small by applying the indicators listed in Table 2.4. Professional judgements are supported by narrative description linked back to evidence from the baseline study to explain the conclusions reached.

Table 2.4 – Indicators of magnitude of visual change

Category	Indicators
Large	The Project would be prominent in the view and result in a substantial change to the composition and character of the existing view and how it is perceived. Typically, this would be where the Project would be seen in close proximity. Much of the view would be affected and there would be little backgrounding to reduce the degree of visual contrast. The duration/reversibility of effect is likely to be long-term and potentially reversible.
Medium	The Project would be very noticeable and result in a noticeable change to the composition and character of the existing view and how it is perceived. Typically, this would be where the Project would be seen in mid-range views but would still be conspicuous and well-defined. Only part of the view may be affected and there may be some backgrounding to reduce the degree of visual contrast. The duration/reversibility of effect is likely to be long-term and irreversible (permanent).

Category	Indicators
Small	The Project would form a small part of the view and result in a slight change to the composition and character of the existing view and how it is perceived. Typically, this would be where the Project would be seen in mid-range or distant views but would be indistinct and/or partially obscured. Only a small part of the view would be affected and there may be a high level of backgrounding to reduce the degree of visual contrast. The duration/reversibility of effect is likely to be medium-term and potentially reversible.
Very small	The Project would be very indistinct and result in a barely perceptible change to the character and quality of the existing view and how it is perceived. Typically, this would be where a development would form part of a long-distance panoramic view and/or where a very small proportion of the view is affected. There may be a high level of backgrounding to reduce the degree of visual contrast. The duration/reversibility of effect is likely to be short-term and reversible.

2.4.35 The assessment also identifies areas where no visual change is anticipated. In these instances, 'no change' is inserted into the appropriate magnitude of change column and the resulting effect is identified as 'no effect'.

2.5 Judging Levels of Visual Effect

2.5.1 The final step in the assessment involves combining professional judgements on sensitivity and magnitude of change to arrive at an informed, professional evaluation of the significance of each visual effect.

1.1.1 In accordance with GLVIA3 (Landscape Institute and IEMA, 2013) and associated TGN 01/24 Notes and Clarifications (Landscape Institute, 2024), a rigid matrix approach where effect levels are determined solely by combining sensitivity (nature of receptor) with magnitude of change (nature of effect), is not applied.

1.1.2 Instead, the evaluations of individual aspects described above (value, susceptibility, size and scale, geographical extent, duration, and reversibility) have been considered together to build an overall profile for each identified effect. An overview of the distribution of professional judgements for these aspects has then been taken, allowing for a more complete understanding of how various factors collectively contribute to the overall landscape effect. This process draws on good practice principles outlined in GLVIA3 (Landscape Institute and IEMA, 2013) and is guided by the indicators in Table 2.5

1.1.3 Levels of effect are categorised as negligible, minor, moderate, or major. Effects judged to be moderate or major are considered significant under The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (HM Government, 2017).

1.1.4 Given the nature of the Project, the direction of change is considered adverse unless otherwise stated.

Table 2.5 – Categories and indicators of significance

Category	Indicators	Significant effect
Major	The Project will result in an obvious change in the view, likely affecting a visual receptor with a moderate or high susceptibility to that type of change. This level of effect may also occur when a medium magnitude of change acts on a nationally valued view and/or a high susceptibility receptor. The effect is likely to be long-term and affect a relatively large area or relatively large number of people.	**Yes**
Moderate	The Project will result in a noticeable change in the view, likely affecting a viewer with a moderate susceptibility to that type of change and or locally valued view. This level of effect may also occur when a smaller magnitude of change acts on a higher susceptibility receptor or affects a large number of people, or a larger scale of effect acting on a lower susceptibility receptor or affecting fewer people. This level of effect may also occur when a large scale of effect occurs over a relatively short period or over a small area/affects few people.	**Yes**
Minor	The development will result in a small change in the view over a long-term duration, likely affecting a smaller geographic extent and/ or fewer people. This level of effect may also occur when a larger scale of effect is of short-term duration or is confined in its geographical extent.	No
Negligible	The Project will result in a barely perceptible alteration to the view.	No

2.5.2 The assessment considers the effects at construction, in year 1 operation, and year 15 operation.

- **Construction Phase** - During this phase, the assessment will evaluate the visual effects of construction activities.
- **Year 1 of Operation** - At this stage, the assessment examines the effects once the Project is operational but without the full benefit of any mitigation measures (like newly planted trees or vegetation). It focuses on the initial operation impacts, such as the presence of the new infrastructure and any mitigation earthworks.
- **Year 15 of Operation** - By this time, any mitigation strategies such as new planting should be fully established and fulfilling their intended function. The assessment will examine the long-term effects, taking into account how the mature vegetation has helped reduce the impacts.

2.5.3 This approach ensures a comprehensive evaluation of both immediate and long-term effects.

1.2 Mitigation and Residual Effects

2.5.4 The design has been developed iteratively with the assessment process. This means that measures to avoid or reduce potentially significant adverse effects have been incorporated where possible.

2.5.5 The most effective mitigation measures are ones which are integral to the Project. A distinction is therefore made between measures designed as an intrinsic part of the Project (embedded mitigation measures) and those which are intended to specifically counteract any potential residual negative effects of the Project (additional mitigation measures). Where appropriate, **Application Document 7.8 Outline Landscape and Ecology Management Plan** sets out monitoring requirements in relation to mitigation measures.

2.5.6 Significant residual visual effects remaining after proposed mitigation are summarised as the final step in the assessment process. Each of the significance categories covers a broad range of effects and represents a continuum or sliding scale. Where an effect falls at the upper or lower end of the category, this has been noted and explained as part of the detailed assessment presented in **Application Document 6.7 Chapter 7 Visual**.

3. Residential Visual Amenity

3.1 Background

3.1.1 The Landscape Institute's (LI) RVAA guidance TGN 02/19 (Landscape Institute, 2019) sets out an approach to the assessment of potential effects on residential visual amenity. Paragraph 1.2 of TGN 02/19 (Landscape Institute, 2019) defines residential visual amenity as:

'*the overall quality, experience and nature of views and outlook available to occupants of residential properties, including views from gardens and domestic curtilage'.*

3.1.2 Residential visual amenity is one component of 'Residential Amenity' which also includes other components of residential amenity including noise, vibration, air quality, access to daylight etc. and which may otherwise be referred to collectively *as 'living conditions*'.

3.1.3 The main difference between RVAA and landscape and visual impact assessment (LVIA) is that RVAA focuses on private views from individual properties whilst LVIA focusses on public views and wider visual amenity.

3.1.4 Paragraph 6.17 of GLVIA3 (Landscape Institute and IEMA, 2013) reinforces TGN 02/19 (Landscape Institute, 2019), stating that:

'*Effects of development on private property are frequently dealt with mainly through residential amenity assessments. These are separate from LVIA although visual effects assessment may sometimes be carried out as part of a residential amenity assessment, in which case this will supplement and form part of the normal LVIA for a project'*.

3.1.5 Changes in views and visual amenity because of development are considered in the planning process. In respect of private views and visual amenity, it is widely accepted that no one has *'a right to a view'* (Aldred's Case, 1610). This includes situations where a residential property's outlook is judged to be 'significantly' affected by a proposed development, a matter which has been confirmed in several appeal/public inquiry decisions.

3.1.6 It is not uncommon for significant adverse effects on views and visual amenity to be experienced by people at their place of residence because of new development being introduced into the landscape. This does not in itself necessarily cause particular planning concern. However, there are situations where the views of a proposed development from a property or its curtilage are judged to be so overbearing or unavoidable that it is not generally considered to be in the public interest to permit such conditions to occur where they did not exist before.

3.1.7 Paragraph 2.1 of TGN 02/19 (Landscape Institute, 2019) introduces an approach to considering a potential '*Residential Visual Amenity Threshold'* (RVAT), beyond which effects may be of:

'*such nature and/or magnitude that it potentially affects 'living conditions' or residential amenity'*.

3.1.8 Determining whether the threshold has been reached requires informed professional judgement.

3.1.9 Landscape and Visual Assessment findings of significant (adverse) visual effects at a residential property do not automatically imply the need for an RVAA. However, for properties close to a development proposal, and which experience a large magnitude of visual change and major adverse effect, an RVAA may be appropriate to establish whether the RVAT is likely to be, or has been, reached.

3.2 Methodology for RVAA

3.2.1 Section 4 of TGN 02/19 (Landscape Institute, 2019) recommends a four-step approach which draws heavily on the GLVIA3 (Landscape Institute and IEMA, 2013) principles and process.

3.2.2 The first three steps of the approach:

'fall broadly within the normal scope of LVIA consisting of an assessment of the magnitude and significance of visual effect (in the EIA context) and change to visual amenity likely to be experienced by occupants at those individual residential properties which were identified'.

3.2.3 The fourth step:

'requires a further assessment of change to visual amenity examining whether the Residential Visual Amenity Threshold is likely to be, or has been, reached. Whether or not this final step is engaged depends on the circumstances specific to the case'.

3.2.4 The following text summarises the four steps and how they are applied to the Project.

Step 1: Definition of Study Area and Scope of the Assessment

3.2.5 In accordance with the principles of the Holford Rules (National Grid, 1992), avoiding settlements and residential properties is an important consideration of the routeing process for the Project in order to avoid or minimise the potential for significant effects on the views and visual amenity of residential receptors.

3.2.6 The suggested study area for RVAA in TGN 02/19 (Landscape Institute, 2019) is up to 150 m when assessing overhead transmission lines. The detailed routeing process has made every effort to maintain a minimum distance of 150 m between a residential property and the Project, although this has not always been possible. Details of the routeing process are set out in **Application Document 7.18 Corridor and Preliminary Routeing and Siting Study**. In addition, the routeing process has sought to avoid introducing pylons into the key/principal views from residential properties. This has been informed by observations made during field work which has considered the orientation of properties, the likely availability of views from the property and its curtilage and the presence of intervening screening features (e.g., localised landform, woodland, forestry and vegetation, buildings and other landscape features). Nevertheless, given the nature of the development, the potential is likely to remain for significant visual effects in relation to views and visual amenity, experienced from residential properties near the Project.

3.2.7 To determine whether more detailed consideration of effects on views and visual amenity from residential properties is required in the form of an RVAA, any property where occupants are likely to experience significant adverse effects that are judged to be major have been included in the assessment. This included a review of properties up to 400 m from the Project that could have open views of a long section

of the Project, so above the 150 m study area suggested in the TGN 02/19 (Landscape Institute, 2019).

3.2.8 Properties have been assessed individually, but if their outlook and/or views are in all aspects the same (for example if a development is visible from the rear gardens only of a small row of houses) they have been assessed as one group. This is at the discretion of the assessor and is supported by a clear explanation of the reason for the grouping or clustering.

Step 2: Evaluation of Baseline Visual Amenity and Receptor Sensitivity

3.2.9 As outlined in paragraph 4.23 of TGN 02/19 (Landscape Institute, 2019), residents at home are considered to have high susceptibility to changes in their view, whether from the property itself, its curtilage or its access.

3.2.10 Paragraph 6.36 of GLVIA3 (Landscape Institute and IEMA, 2013) states that:

'in the assessment of visual effects it will be important to recognise that residents may be particularly susceptible to changes in their visual amenity - residents at home, especially using rooms normally occupied in waking or daylight hours, are likely to experience views for longer than those briefly passing through an area'.

3.2.11 Whilst an appreciation of the surrounding views is often material to the quality of life experienced by residents, and therefore the value of their private views is typically considered by residents to be high, this is not always the case. Professional judgment has been applied to describe the views experienced in terms of their nature, extent, and quality through desk based studies and field surveys. This included determining the following information:

- The location of the residential elements of each property;
- The orientation and likely views from each property (including principal/primary aspects and presence of windows);
- Layout and orientation of the gardens and property curtilage;
- Means of access and the likely views from private or shared driveways and/or access tracks (if applicable), experienced when approaching or departing from the property;
- The nature of existing views from the properties and their gardens, including the proximity and relationship of the properties to surrounding landform, landcover and presence of other existing transmission infrastructure; and
- Potential screening provided by local variations in topography, the built environment and vegetation/tree cover within the surrounding landscape.

3.2.12 Field surveys were undertaken in Winter 2025. This enabled the worst-case scenario to be assessed, on the basis that any available screening offered by deciduous vegetation was at a minimum during Winter months.

3.2.13 Taking account of the high susceptibility of receptors and assuming that the value of the views is high, the overall sensitivity of residential receptors is typically judged to be high.

Step 3: Assessment of Likely Change to Visual Amenity Experienced by Residents

3.2.14 Step 3 identifies those properties requiring further assessment in Step 4 by reviewing the results of the viewpoint assessment to identify residential properties where the effect on the residents' visual amenity is so great that the Project is against the public interest as explained in TGN 02/19 (Landscape Institute, 2019). This is most likely in locations where major visual effects are predicted.

3.2.15 Considerations set out in TGN 02/19 (Landscape Institute, 2019) which provide a framework for describing and evaluating the predicted magnitude of visual change and related visual amenity effects which have led to the property being considered in Step 4 include:

- *'distance of property from the proposed development having regard to its size scale and location relative to the property (e.g. on higher or lower ground);*
- *type and nature of the available views (e.g. panoramic, open, framed, enclosed, focused etc.) and how they may be affected, having regard to seasonal and diurnal variations;*
- *direction of view/aspect of property affected, having regard to both the main/primary and peripheral/secondary views from the property;*
- *extent to which development/landscape changes would be visible from the property (or parts of) having regard to views from principal rooms, the domestic curtilage (i.e. garden) and the private access route, taking into account seasonal and diurnal variations;*
- *scale of change in views having regard to such factors as the loss or addition of features and compositional changes including the proportion of view occupied by the development, taking account of seasonal and diurnal variations;*
- *degree of contrast or integration of new features or changes in the landscape compared to the existing situation in terms of form, scale and mass, line, height, colour and texture, having regard to seasonal and diurnal variations;*
- *duration and nature of the changes, whether temporary or permanent, intermittent or continuous, reversible or irreversible etc.; and*
- *mitigation opportunities – consider implications of both embedded and potential further mitigation'.*

3.2.16 This step has involved involve both desk study and detailed field surveys, but has not required visits to individual properties which, for the purposes of this step, can generally be assessed from the nearest publicly available vantage/access point. Magnitude of change is described as very small, small, medium or large, as set out in Table 2.4, and the visual effect is described as negligible, minor, moderate or major, as set out in Table 3.1.

Table 3.1 – Level of Visual Effect Categories

Level of Effect	Description (Magnitude of Change)
Major (significant)	The property would be affected by a large magnitude change to views/visual amenity. For example, the Project will be a key/defining

Level of Effect	Description (Magnitude of Change)
	element in a view from the property and garden, especially if it is in the primary outlook, or will be clearly discernible from more than one aspect (including the primary outlook of the property).
Moderate (significant)	The property would be affected by a medium magnitude of change to views/visual amenity. For example, the Project will be clearly discernible from at least one aspect of the house and/or garden but will not be the key defining feature of views experienced from the property (either because of the distance from the pylons, location of pylons in relation to the property or the presence of screening).
Minor (not significant)	The property would be affected by a small magnitude of change to views/visual amenity. For example, the Project will be visible but will have relatively little influence on visual amenity of residents using the house and/or garden, perhaps due to distance from the Project or the presence of screening.
Negligible (not significant)	The property would be affected by a very small magnitude of change to views/visual amenity. For example, the Project may go unnoticed, or is not visible, and therefore has not been assessed in the detailed assessment.

3.2.17 Step 3 concludes by identifying which properties should be assessed further in the final step in order to reach a professional judgement regarding the RVAT.

3.2.18 For properties experiencing a large magnitude of visual change that would cause a **major (significant)** effect at Step 3, a judgement of whether the predicted change in views and visual amenity reaches the RVAT is made, i.e. 'is the effect of the development on Residential Visual Amenity of such nature and/or magnitude that it potentially affects 'living conditions' or 'Residential Amenity', as described in TGN 02/19 (Landscape Institute, 2019).

3.2.19 For properties experiencing **negligible**, **minor** or **moderate** effects after Step 3 in the RVAA, it is considered that there is no potential for *'living conditions'* to be affected, and this final stage in considering the RVAT is therefore not undertaken.

Step 4: Forming the Residential Visual Amenity Professional Judgement

3.2.20 The final step of RVAA involves a more detailed examination of the predicted effects on the residential visual amenity at those properties identified for further assessment in the previous step. There is an important distinction between this concluding step of RVAA and the preceding one.

3.2.21 In Step 3 the assessment has reached a conclusion with respect to magnitude and (EIA) significance of visual effect, and the change in visual amenity at the property. In this final step, properties that are predicted to experience the highest category of visual effect (major) are subject to a further professional judgement associated with the RVAT to determine an effect on '*living conditions*'.

3.2.22 As detailed in TGN 02/19 (Landscape Institute, 2019):

'*This concluding judgement should advise the decision maker whether the predicted effects on visual amenity and views at the property are such that it has reached the Residential Visual Amenity Threshold, therefore potentially becoming a matter of Residential Amenity. This judgement should be explained in narrative setting out why the effects are considered to reach the Residential Visual Amenity Threshold. Equally, judgements should explain why the threshold has not been reached*'.

3.2.23 The main point regarding Step 4 is that the professional judgement required in this final, concluding step:

'*goes beyond the assessment undertaken in Step 3 which is restricted to judging the magnitude and significance of visual effect, typically as a supplement to the accompanying LVIA*'.

3.2.24 This judgement is intended to assist the decision maker in coming to the wider planning judgement on overall residential amenity, when considered within the context of other components (e.g. noise, dust and vibration). A property experiencing a large magnitude of change to Residential Visual Amenity will not necessarily experience effects which are judged to breach the RVAT.

3.2.25 The RVAT is judged by considering whether one or more of the following apply:

- Blocks the only available view from a property;
- Is overwhelming in views in all directions from the property;
- Is unpleasantly encroaching; and
- Is inescapably dominant from the property.

3.2.26 Where the Project is considered to potentially breach the RVAT upon a property/group of properties, further analysis is provided within Step 4.

4. Technical Information

4.1 Baseline Photography

General Site Photography

4.1.1 Baseline photographs have been taken using a Canon EOS digital SLR camera with a full frame sensor (36 x 24 mm) using a 50 mm fixed focal length lens. Photographs are taken in accordance with best practice guidance, including the Landscape Institute's TGN 06/19 (Landscape Institute, 2019), and their location recorded using an on-site handheld GPS (known as Type 3). Where required, the resulting images have been stitched together using specialist PTGui software to create 90° panoramic baseline views. The time at which the photographs are taken, and the prevailing weather conditions have been recorded for each viewpoint. For general site photography, 360° panoramas have been taken unless there are privacy issues in relation to nearby properties.

4.1.2 Photographs have been taken in clear lighting conditions wherever possible.

Photography for Photomontage

4.1.3 Baseline photography is required for the production of photomontages to accurately represent the Project. This type of photography requires a higher level of accuracy and has been subject to additional survey methods in line with TGN 06/19 (Landscape Institute, 2019). A full methodology for the photography for photomontage (known as Type 4) is presented in **Application Document 7.16 Photomontages**.

4.2 Wireframes

4.2.1 Wireframe diagrams (known as Type 2 in Landscape Institute's TGN 06/19 (Landscape Institute, 2019)) have been prepared showing the outline of the Project. 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 have been produced for all viewpoints and are presented in **Application Document 6.7.A3 Appendix 7.3 Viewpoint Assessment**.

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

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 also depends on both the weather and the lighting conditions. The existing 400 kV overhead lines to be retained have also been included on the baseline wireframes for comparison against the wireframes of the Project

4.3 Zone of Theoretical Visibility

4.3.1 Zone of Theoretical Visibility maps have been created using recent topographic data and assume an eye level of 1.6 m (representing an average-height person) and are based on the pylon schedule presented in **Application Document 6.4.A1 Appendix 4.1 Indicative Pylon Schedule**. The accuracy of the maps has then been verified on-site. This approach ensures that the potential visual impact of the Project has been assessed comprehensively and in line with professional standards.

4.3.2 Zone of Theoretical Visibility maps take account of the following factors:

- The existing topography using OS terrain 50 data;
- Existing buildings by applying an 8 m average height to the OS Mastermap layer; and
- Existing woodland cover by applying a 15 m average height to the National Forest Inventory (Forestry Commission, 2024) which is produced by the Forestry Commission and records all forests and woodlands with an area of 0.5 ha and over.

4.3.3 Individual and small groups of trees are excluded, as particularly during Winter, these will provide only minimal screening of the Project.

4.3.4 The maximum vertical LoD was not used for the ZTV. The requirement to increase the height of a pylon would be localised and would not be used throughout and only by exception. Using this additional height for pylons would have exaggerated the ZTV. The ZTVs were primarily used to identity study areas and viewpoint locations and therefore the indicative pylon heights presented in column four of **Application Document 6.4.A1 Appendix 4.1 Indicative Pylon Schedule** are more appropriate to illustrate. This is considered a proportionate approach and is in line with other similar projects for which development consent has been granted e.g. the Bramford to Twinstead Connection Project.

4.4 Assumptions and Limitations

4.4.1 The visual assessment relies on professional judgement.

4.4.2 All baseline surveys have been conducted on publicly accessible land. If access was not possible from publicly accessible areas, professional judgement has been used to estimate and document the likely effects.

4.4.3 Zone of Theoretical Visibility maps have not been prepared for the construction phase of the Project due to the significant variability in the extent and duration of visibility of construction activities.

4.4.4 The tallest equipment is anticipated to be mobile cranes used for pylon erection. The crane would be lifting all sections of each pylon into place; however, it would be extended for several hours only and would be retracted when not in use. Cranes would be moved consecutively along the route so any effects would be transient and short term. As with other projects of this type, the Applicant has not prepared a ZTV for the construction phase of the Project. As the presence of the cranes will be temporary, in many cases being only several of hours at one location and being retracted when not in use, the assessment of construction effects presented in this chapter uses professional judgement to take account of the presence of cranes

where relevant. The ZTV production is based on the assumption that the greatest visual effects would be during the operational phase and would arise from the presence of tall pylons in the landscape.

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National Grid plc
National Grid House,
Warwick Technology Park,
Gallows Hill, Warwick.
CV34 6DA United Kingdom

Registered in England and Wales
No. 4031152
nationalgrid.com