Scottish & Southern Electricity Networks

TRANSMISSION

Hurlie 400kV Substation
Environmental Impact Assessment (EIA)
Volume 4 | Appendix 8.1

LVIA and Visualisations Methodology

November 2024

Scottish & Southern Electricity Networks

TRANSMISSION

CONTENTS

1. INTRODUCTION

1.1.1 This appendix presents the detailed methodology used for the Hurlie 400 kV Substation Landscape and Visual Impact Assessment (LVIA), including cumulative assessment, which is contained in **Chapter 8: Landscape and Visual Amenity, Volume 2 of the Environmental Impact Assessment Report (EIA)**.

1.1.2 Landscape and visual assessments are separate, although linked, processes. LVIA therefore considers the potential effects of a proposed development on:

- Landscape as a resource in its own right (caused by changes to the constituent elements of the landscape, its specific aesthetic or perceptual qualities and the character of the landscape); and
- Views and visual amenity as experienced by people (caused by changes in the appearance of the landscape).

1.1.3 Whilst landscape and visual effects are linked, this LVIA deals with landscape and visual effects separately, followed by an assessment of cumulative landscape and visual effects where relevant.

1.1.4 This appendix also sets out the approach to viewpoint photography, visualisation production and zone of theoretical visibility (ZTV) mapping.

1.1.5 It should be read in conjunction with **Chapter 8: Landscape and Visual Amenity** and **Chapter 3: Project Description** of the EIA Report for full details of the Proposed Development.

2. GUIDANCE

2.1.1 This methodology has been developed by Chartered Landscape Architects (Chartered Members of the Landscape Institute (CMLI)) at LUC, who have extensive experience in the assessment of landscape and visual effects arising from electricity transmission infrastructure (e.g. overhead transmission lines, substation infrastructure etc.) and a wide range of other types and scale of development.

2.1.2 The methodology has been developed primarily in accordance with the principles contained within the Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3)[1]. NatureScot (formerly Scottish Natural Heritage (SNH)) cumulative guidance[2] also informs the approach to the assessment of cumulative landscape and visual effects. Whilst this NatureScot guidance has been prepared in relation to onshore wind energy development the overarching principles of cumulative assessment are of relevance to this methodology.

2.1.3 The methodology for the production of accompanying visualisations used in the LVIA is based on current good practice guidance[3] as set out by NatureScot[4] and the Landscape Institute[5,6].

2.1.4 A full list of guidance that has been used to inform the LVIA is provided in section 8.3 of **Chapter 8: Landscape and Visual Amenity**.

[1] The Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition

[2] NatureScot (2021). Assessing the cumulative impact of onshore wind energy developments

[3] Current good practice guidance valid as of October 2022 was considered when undertaking the assessment

[4] Scottish Natural Heritage (2017) Visual Representation of Wind Farms Guidance, Version 2.2

[5] The Landscape Institute (2019). Advice Note 01/11 Photography and photomontage in landscape and visual impact assessment

[6] The Landscape Institute (2017) Technical Guidance Note 02/17: Visual Representation of Development Proposals

3. SCOPE OF ASSESSMENT

3.1.1 An LVIA considers physical changes to the landscape as well as changes in landscape character. It also considers changes to areas designated for their scenic or landscape qualities, and the visual impacts of a proposed development on publicly available views as perceived by people.

3.1.2 All potentially significant landscape and visual effects (including cumulative effects) are examined, including those relating to construction and operation of the Proposed Development.

3.1.3 Where, based on professional judgement, it is established that significant effects are unlikely to occur, the assessment of potential effects on some receptors may be 'scoped out'. For an EIA development this is usually agreed at scoping stage, or through the iterative detailed design of the Proposed Development through the EIA process. Effects assessed in full and effects scoped out of the LVIA are detailed in **Chapter 8: Landscape and Visual Amenity**.

4. LVIA ASSESSMENT METHODOLOGY

4.1 Study Area

4.1.1 The study area is determined by the nature and scale of the development proposed and the nature of the surrounding area (e.g. complex topography or extensive tree cover leading to visually enclosed areas may limit the extent of likely significant effects). For the purposes of the LVIA a study area of 5 km radius from the proposed Hurlie Substation was proposed and agreed with statutory consultees including Aberdeenshire Council and NatureScot as detailed in **Chapter 8: Landscape and Visual Amenity**, **Table 8.1**.

4.2 Methodological Overview

The key steps in the methodology for assessing landscape and visual effects are as follows:

- the landscape of the study area is analysed and landscape receptors identified, informed by desk study and field survey;
- the area over which the development will potentially be visible is established through the creation of an initial ZTV plan[7];
- the visual baseline is recorded in terms of the different receptors (groups of people) who may experience views of the development (informed by the initial ZTV) and the nature of their existing views and visual amenity;
- potential assessment viewpoints are selected, as advocated by GLVIA3, to represent a range of different receptors and views, (in consultation with statutory consultees including Aberdeenshire Council and NatureScot), including:
  - *"**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 particular 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" (GLVIA3, Para 6.19, Page 109)*
- likely significant effects on both the landscape as a resource and visual receptors are identified; and
- the level (and significance) of landscape and visual effects are judged with reference to the nature of the receptor (commonly referred to as the sensitivity of the receptor), which considers both susceptibility and value, and the nature of the effect (commonly referred to as the magnitude of change), which considers a combination of judgements including size/scale, geographical extent, duration and reversibility.

4.3 Description of Effects

4.3.1 As required by the EIA Regulations[8], the assessment must also identify the effects as either being beneficial (or positive), adverse (or negative) or neutral.

4.3.2 The landscape, visual and cumulative effects (**beneficial, adverse** or **neutral**) are determined in relation to the degree to which the proposal fits with the existing landscape character or views, and the contribution to the landscape or views that a proposed development makes, even if it is in contrast to the existing character of the landscape or views. With

[7] A ZTV indicates areas from where a development is theoretically visible, but they cannot show what it would look like, nor indicate the nature or magnitude of landscape or visual impacts

[8] The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017

regard to electricity transmission infrastructure an assessment is required to take an objective approach. Therefore, to address the 'maximum case effect' situation, potential landscape and visual effects relating to the introduction of electricity transmission infrastructure are generally assumed to be adverse (negative).

5. METHOD FOR ASSESSING LANDSCAPE EFFECTS

5.1.1 As outlined in GLVIA3: "*an assessment of landscape effects deals with the effects of change and development on landscape as a resource*" (GLVIA3, Para 5.1, Page 70). Changes may affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.

5.1.2 An assessment of landscape effects requires consideration of the nature of landscape receptors (sensitivity of receptor) and the nature of the effect on those receptors (magnitude of change). GLVIA3 states that the nature of landscape receptors, commonly referred to as their sensitivity, should be assessed in terms of the susceptibility of the receptor to the type of change proposed, and the value attached to the receptor. The nature of the effect on each landscape receptor, commonly referred to as its magnitude, should be assessed in terms of size and scale of effect, geographical extent, duration and reversibility.

5.1.3 These aspects are considered together, to form a judgement regarding the overall significance of landscape effects (GLVIA3, Figure 5.1 Page 71). The following sections set out the methodology used to evaluate sensitivity and magnitude.

5.2 Sensitivity of Landscape Receptors

5.2.1 The sensitivity of a landscape receptor to change is defined as **high**, **medium** or **low** and is based on weighing up professional judgements regarding susceptibility and value, as set out below.

Table 5.1 Sensitivity of Landscape Receptors

	Higher	←→	Lower
Susceptibility	Attributes that make up the character of the landscape offer very limited opportunities for the accommodation of change without key characteristics being fundamentally altered by electricity transmission infrastructure, leading to a different landscape character.	←→	Attributes that make up the character of the landscape are resilient to being changed by electricity transmission infrastructure.
Value	Landscapes with high scenic quality, high conservation interest, recreational value, important cultural associations or a high degree of rarity. Areas or features designated at a national level e.g. National Parks or National Scenic Areas or key features of these with national policy level protection.	←→	Landscapes of poor condition and intactness, limited aesthetic qualities, or of character that is widespread. Areas or features that are not formally designated.

5.3 Susceptibility of Landscape Receptors

5.3.1 Susceptibility is defined by GLVIA3 as "*the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular type or area, or an individual element and/or feature, or a particular aesthetic and perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies*" (GLVIA3 paragraph 5.40).

5.3.2 A series of criteria are used to evaluate the susceptibility of Landscape Character Types (LCTs) to electricity transmission infrastructure as set out in **Table 5.2** Aspects Influencing Susceptibility of Landscape Receptors to Electricity Transmission Infrastructurebelow. Aspects of these criteria are drawn from a range of published sources relating to electricity transmission infrastructure, including the Holford Rules[9], The Horlock Rules[10] and GLVIA3.

5.3.3 Landscape susceptibility is recorded as **high**, **medium** or **low**.

[9] The Holford Rules: Guidelines for the Routeing of New High Voltage Overhead Transmission Lines (with NGC 1992 and SHETL 2003 Notes)

[10] The Horlock Rules: NGC Substations and the Environment: Guidelines on Siting and Design (2006)

Table 5.2 Aspects Influencing Susceptibility of Landscape Receptors to Electricity Transmission Infrastructure

Criteria	Aspects indicating greater susceptibility to electricity transmission infrastructure	⟷	Aspects indicating reduced susceptibility to electricity transmission infrastructure
Scale	Smaller Scale	⟷	Larger Scale
Topography and landform	Presence of strong topographical variety or distinctive landform features Absence of strong topographical variety, featureless, convex or flat with little opportunity for screening and back clothing of electricity transmission infrastructure	⟷	Undulating and valley landscapes which offer opportunities for screening and back clothing of electricity transmission infrastructure
Landcover, pattern and complexity	Limited woodland/forestry cover to help reduce views of electricity transmission infrastructure (e.g. providing screening or back clothing of infrastructure) Complex Rugged and irregular	⟷	Extensive areas of woodland/forestry cover to reduce views of electricity transmission infrastructure (e.g. providing screening or back clothing of infrastructure) Simple Regular or uniform
Settlement and man-made influence	Absence of modern development Presence of small scale, historic or vernacular settlement	⟷	Presence of contemporary structures e.g. utility, infrastructure or industrial elements
Ridges and Skylines	Distinctive, undeveloped skylines Skylines that are highly visible over large areas or exert a large influence on landscape character Skylines with important historic landmarks	⟷	Non-prominent/screened skylines Presence of existing modern man-made features (e.g. other electricity transmission infrastructure, telecommunications masts or wind turbines)
Inter-visibility with adjacent landscapes	Strong inter-visibility with sensitive landscapes Forms an important part of a view from sensitive viewpoints Visually open	⟷	Little inter-visibility with adjacent sensitive landscapes or viewpoints Visually enclosed
Perceptual aspects	Remote from visible or audible signs of human activity and development	⟷	Close to visible or audible signs of human activity and development

5.4 Value of Landscape Receptors

5.4.1 The European Landscape Convention advocates that all landscape is of value, whether it is the subject of defined landscape designation or not: "*The landscape is important as a component of the environment and of people's surroundings in both town and country and whether it is ordinary landscape or outstanding landscape*."[11] The Landscape Institute also provides guidance on assessing landscape value outside of national landscape designations[12] which has been used to inform the LVIA. The value of a landscape receptor is recognised as being a key contributing factor to the sensitivity of landscape receptors.

5.4.2 The value of landscape receptors is determined with reference to:

- Review of relevant designations and the level of policy importance that they signify (such as landscapes designated at international, national or local level); and/or

[11] Council of Europe, (2000). The European Landscape Convention – Council of Europe Treaty Series No. 176.

[12] Landscape Institute (2021) Technical Guidance Note 02/21 Assessing landscape value outside national designations.

- Application of criteria that indicate value (such as scenic quality, rarity, recreational value, representativeness, conservation interests, perceptual aspects and artistic associations) as described in GLVIA3, paragraphs 5.44 - 5.47.

5.4.3 Internationally and nationally designated landscapes would generally indicate landscape of higher value whereas those without formal designation (such as a widespread or common landscape type without high scenic quality) are likely to be of lower value, bearing in mind that all landscapes are valued at some level. There is however variation across both designated and undesignated areas, and so judgements regarding value are also informed by fieldwork.

5.4.4 Landscape value is described as being **high**, **medium** or **low**, as set out in **Table 5.3** below.

Table 5.3 Value of Landscape Receptors

Value	Indicative Criteria
High	Landscapes with high scenic quality, high conservation interest, recreational value, important cultural associations or a high degree of rarity. Areas or features designated at a national level e.g. National Parks or National Scenic Areas or key features of these with national policy level protection.
Medium	Landscapes potentially designated at a regional or local level e.g. Regional Scenic Areas (RSAs), Special Landscape Areas (SLAs) or similar, or areas which in part may be designated in relation to their scenic quality or distinctiveness e.g. Forest Parks or Conservation Areas.
Low	Landscape of poor condition and intactness with limited aesthetic qualities, or of character that is widespread. Areas or features that are not formally designated.

5.5 Sensitivity of Landscape Receptors

5.5.1 The sensitivity of a landscape receptor to change is defined as **high**, **medium** or **low** and is based on weighing up professional judgements regarding susceptibility and value, as set out in **Table 5.4** below.

Table 5.4 Sensitivity of Landscape Receptors

	Higher	⟷	Lower
Susceptibility	Attributes that make up the character of the landscape offer very limited opportunities for the accommodation of change without key characteristics being fundamentally altered by electricity transmission infrastructure, leading to a different landscape character.	⟷	Attributes that make up the character of the landscape are resilient to being changed by electricity transmission infrastructure.
Value	Landscapes with high scenic quality, high conservation interest, recreational value, important cultural associations or a high degree of rarity. Areas or features designated at a national level e.g. National Parks or National Scenic Areas or key features of these with national policy level protection.	⟷	Landscape of poor condition and intactness, with limited aesthetic qualities, or of character that is widespread. Areas or features that are not formally designated.

5.6 Magnitude of Landscape Change

5.6.1 The overall judgement of magnitude of a landscape change is based on combining professional judgements on size and scale, geographical extent, duration and reversibility. Further information on the criteria is provided below.

Size and Scale of Effect

5.6.2 For landscape elements/features this depends on the extent of existing landscape elements that would be lost or changed, the proportion of the total extent that this represents, and the contribution of that element to the character of the landscape.

5.6.3 In terms of landscape character, this reflects the degree to which the character of the landscape would change as a result of removal or addition of landscape components, and how the changes would affect key characteristics.

5.6.4 The size and scale of the effect is described as being **large**, **medium**, **small**, or **barely perceptible**.

Geographical Extent of Effect

5.6.5 The geographical extent over which the landscape effect would arise is described as being **large** (widespread or scale of the landscape character type, affecting several landscape types or character areas), **medium** (more immediate surroundings) or **small** (localised, for example at a site level).

Duration of Effect

5.6.6 GLVIA3 states at paragraph 5.51 on page 91 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 is often determined in relation to the phases of the substation, as follows:

5.6.7 **Short-term** effects are those that occur during construction, and may extend into the early part of the operational phase, e.g. construction activities (generally lasting 0 - 5 years); and

5.6.8 **Long-term** effects are those which occur throughout the operational phase, e.g. presence of electricity transmission infrastructure (generally lasting 5-80 years).

Reversibility of Effect

5.6.9 In accordance with the principles contained within GLVIA3, reversibility is reported as **reversible, partially reversible** or **irreversible** (i.e. permanent), and is related to whether the change can be reversed at the end of the phase of development under consideration (i.e. at the end of construction or at the end of the operational lifespan of the development).

5.6.10 Judgements on the magnitude of landscape change (nature of landscape effect) are recorded as **high, medium, low** or **barely perceptible** and are guided by **Table 5.5** below, based on combining professional judgements on size and scale, geographical extent, duration and reversibility.

Table 5.5 Magnitude of Landscape Change

	Higher	⟷	Lower
Size/Scale	Extensive loss of landscape features and/or elements, and/or change in, or loss of key landscape characteristics, and/or creation of new key landscape characteristics	⟷	Limited loss of landscape features and/or elements, and/or change in or loss of some secondary landscape characteristics
Geographical Extent	Change in landscape features and/or character extending considerably beyond the immediate site and potentially affecting multiple landscape character types/areas	⟷	Change in landscape features and/or character extending contained within or local to the immediate site and affecting only a small part of the landscape character type/area
Duration	Changes experienced for a period of around 5 years or more	⟷	Changes experienced for a shorter period of up to 5 years
Reversibility	Change to features, elements or character which cannot be undone or are only partly reversible after a long period	⟷	A temporary landscape change which is largely reversible following the completion of construction, or decommissioning of the development

5.7 Judging Levels of Landscape Effect and Significance

5.7.1 The final step in the assessment requires the judgements of sensitivity and magnitude of change to be combined to make an informed professional assessment on the significance of each landscape effect (GLVIA3, Figure 5.1, Page 71).

5.7.2 There may be a complex relationship between the value attached to a landscape and the susceptibility of the landscape to a specific change. Therefore, the rationale for judgements on the sensitivity of landscape receptors needs to be clearly set out for each receptor. It should be noted that whilst landscape designations at an international or national level are likely to be accorded the highest value, it does not necessarily follow that such landscapes all have a high susceptibility to all types of change, and conversely, undesignated landscapes may also have high value and susceptibility to change (GLVIA3, Page 90).

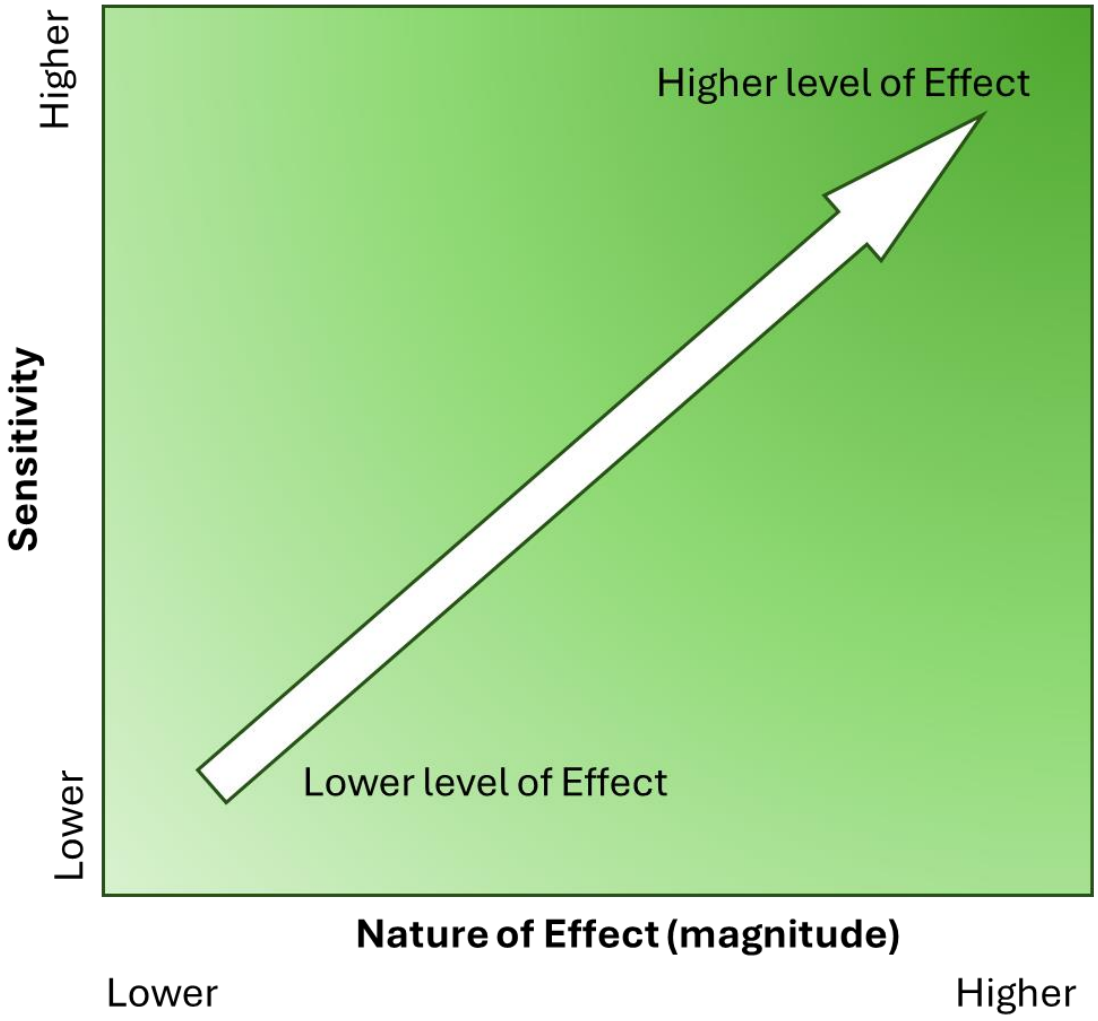
5.7.3 This determination requires the application of professional judgement and experience to take on board the many different variables which need to be considered, and which are given different weight according to site-specific and location-specific considerations in every instance. Judgements are made on a case by case basis, guided by the principles set out in **Diagram 1** below and the example descriptions/definitions detailed in the table below. A rigid matrix-type approach, which does not take on board professional judgement and experience, and where the level of effect is defined simply based on the level of sensitivity (nature of receptor) combined with the magnitude of change (nature of effect), is not used. As such, the conclusion on the level of effect is not always the same for similar receptors, or determined through a formulaic process.

5.7.4 Although a numerical or formal weighting system is not applied, consideration of the relative importance of each aspect is made to inform the overall decision as to the likely effect. Levels of effect are identified as none, minor, moderate or major as set out in **Table 5.6** below, where moderate and major effects are considered significant in the context of the EIA Regulations.

Table 5.6 Level and Significance of Landscape Effects

Level and Significance of Landscape Effect	Indicative Description
Major (significant)	The Proposed Development will result in an obvious change in landscape characteristics and character, likely affecting a landscape with a moderate or high susceptibility to that type of change. This level of effect may also occur when a medium scale of effect acts on a nationally valued landscape. The effect is likely to be long-term and affect a relatively large area.
Moderate (significant)	The Proposed Development will result in a noticeable change in landscape characteristics and character, likely affecting a landscape with a moderate susceptibility to that type of change. This level of effect may also occur when a smaller scale of effect acts on a more widely valued landscape, or a larger scale of effect acting on a landscape valued at a more local level. This level of effect may also occur when a large scale of effect occurs over a relatively short period or over a small area.
Minor (not significant)	The Proposed Development will result in a small change in landscape characteristics and character over a long-term duration. This level of effect may also occur when a larger scale of effect is of short-term duration or confined to the site.
None (not significant)	The Proposed Development will not result in a noticeable (barely perceptible) change in landscape characteristics/character.

Diagram 1: Judging levels of effect - Landscape or Visual (including cumulative)



6. METHOD FOR ASSESSING VISUAL EFFECTS

6.1 Significance of Visual Effects

6.1.1 As outlined in GLVIA3 "*An assessment of visual effects deals with the effects of change and development on views available to people and their visual amenity*" (GLVIA3, Para 6.1, Page 98). Changes in views may be experienced by people at different locations within the study area including from static locations (normally assessed using representative viewpoints) and whilst moving through the landscape (normally referred to as sequential views, e.g. from roads and walking routes).

6.1.2 Visual receptors are individuals or groups of people who may be affected by changes in views and visual amenity. They are usually grouped by their occupation or activity (e.g. residents, motorists, recreational users, tourists visiting a specific location or area) and the extent to which their attention is focused on the view (GLVIA3, Paras. 6.31 - 6.32, Page 113).

6.1.3 GLVIA3 states that the sensitivity of visual receptors should be assessed in terms of the susceptibility of the receptor to change in views and/or visual amenity and the value attached to particular views. The magnitude of change should be assessed in terms of the size and scale, geographical extent, duration and reversibility of the effect.

6.1.4 These aspects are considered together, to form a judgement regarding the overall significance of visual effect (GLVIA3, Figure 6.1 Page 99). The following sections set out the methodology used to evaluate sensitivity and magnitude.

6.2 Sensitivity of Visual Receptors

Sensitivity of Visual Receptor

6.2.1 The sensitivity of a visual receptor to change is defined as **high**, **medium** or **low** and is based on weighing up professional judgements regarding susceptibility and value, and each of their component considerations, as set out in the below.

Table 5.7 Sensitivity of Visual Receptors

	Higher	⟷	Lower
Susceptibility	Viewers whose attention or interest is focussed on their surroundings, including communities / individual residential receptors / people engaged in outdoor recreation / visitors to heritage assets or other attractions where views of surrounding area are an important contributor.	⟷	People whose attention is not on their surroundings (and where setting is not important to the quality of working life) such as commuters / people engaged in outdoor sports / people at their place of work.
Value	Views may be recorded in management plans, guide books, and/or which are likely to be experienced by large numbers of people. Views may be associated with nationally designated landscapes; local authority designated landscapes; designed views recorded in citations for historic parks, gardens, schedules monuments etc.	⟷	Views which are not documented or protected. Views which are more incidental, and less likely to be associated with somewhere people travel to or stop, or which may be experienced by smaller numbers of people.

Susceptibility of Visual Receptors

6.2.6 The susceptibility of visual receptors to changes in views/visual amenity is a function of the occupation or activity of people experiencing the view and the extent to which their attention is focused on views (GLVIA 3, para 6.32). This is recorded as **high**, **medium** or **low** informed by **Table 5.8** below.

Table 5.8 Susceptibility of Visual Receptors

High	Medium	Low
Viewers whose attention or interest is focussed on their surroundings, including: ▪ communities where views contribute to the landscape setting enjoyed by residents; ▪ people engaged in outdoor recreation (including users of cycle routes, footpaths and public rights of way whose interest is likely to be focused on the landscape); ▪ visitors to heritage assets or other attractions where views of surroundings are an important contributor to experience; formal or promoted stopping places on scenic or tourist routes.	People travelling in vehicles on scenic routes and tourist routes, where attention is focused on the surrounding landscape, but is transitory; People at their place of work whose attention is focused on the surroundings and where setting is important to the quality of working life.	People travelling more rapidly on more major roads, rail or transport routes (not recognised as scenic routes); People engaged in outdoor sport or recreation which does not involve or depend upon appreciation of views of the landscape; People at their place of work whose attention is not on their surroundings (and where setting is not important to the quality of working life).

Value of View or Visual Amenity

6.2.7 GLVIA3 also requires evaluation of the value attached to the view or visual amenity and relates this to planning designations and cultural associations (GLVIA3, Para. 6.37, Page 114).

6.2.8 Recognition of the value of a view is determined with reference to:

- planning designations specific to views;
- whether it is recorded as important in relation to designated landscapes (such as views specifically mentioned in the special qualities of a National Scenic Area);
- whether it is recorded as important in relation to heritage assets (such as designed views recorded in citations of Gardens and Designed Landscapes (GDL) or views recorded as of importance in Conservation Area Appraisals); and
- the value attached to views by visitors, for example through appearances in guide books or on tourist maps, provision of facilities for their enjoyment and references to them in literature and art.

6.2.9 A designated viewpoint or scenic route advertised on maps and in tourist information, or which is a significant destination in its own right, such as a Munro summit, is likely to indicate a view of higher value. High value views may also be recognised in relation to the special qualities of a designated landscape or heritage asset, or it may be a view familiar from photographs or paintings.

6.2.10 Views experienced from viewpoints or routes not recognised formally or advertised in tourist information, or which are not provided with interpretation or, in some cases, formal access, are likely to be of lower value.

6.2.11 Judgements on the value of views or visual amenity are described as being **high**, **medium** or **low**, as set out in **Table 5.9** below.

Table 5.9 Value of Views and Visual Amenity

Value	Indicative Criteria
High	Views may be recorded in management plans, guide books, and/or which are likely to be experienced by large numbers of people. Views may be associated with internationally or nationally designated landscapes; designed views recorded in citations for Gardens and Designed Landscapes (GDLs)/Scheduled Monuments etc.
Medium	Views may be associated with regionally or locally designated landscapes; designed views recorded in citations for historic parks, gardens designated at a

Value	Indicative Criteria
	regional or local level, or documented in local planning policy (e.g. landmark hills/views, promoted viewpoints).
Low	Views which are not documented or protected but may be valued at a local level. Views which are more incidental, and less likely to be associated with somewhere people travel to or stop, or which may be experienced by smaller numbers of people.

6.3 Magnitude of Visual Change

6.3.1 The overall judgement of magnitude of visual change (nature of visual effect) is based on weighing up professional judgements on size and scale, geographical extent, duration and reversibility. Further information on the criteria is provided below.

Size and Scale

6.3.2 The size and scale of a visual change depends on:

- the scale of the 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 Proposed Development;
- 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; and
- the nature of the view of the Proposed Development, in terms of the relative amount of time over which it will be experienced and whether views will be full, partial or glimpsed.

6.3.3 All changes are assumed to be during winter, representing a 'maximum effect' scenario with minimal screening by deciduous vegetation and trees. Wireframes and ZTVs prepared to illustrate potential visual effects are initially calculated on the basis of a 'Bare Earth' Digital Terrain Model (DTM) and therefore demonstrate the maximum extent of visibility possible, in the absence of buildings, woodland, vegetation or other surface features which may otherwise screen of filter views of the Proposed Development.

6.3.4 Where known surface features such as coniferous forestry are present, consideration is given to potential changes in the existing composition felling regimes where screening provided by existing forestry is likely to change notably during the lifetime of the substation.

6.3.5 In this assessment size/scale of visual change is described as being **large**, **medium**, **small** or **barely perceptible**.

Geographical Extent

6.3.6 The geographical extent of a visual change records the extent of the area over which the changes will be visible e.g. whether this is a unique viewpoint from where the proposed electricity transmission infrastructure can be glimpsed, or whether it represents a larger area from which similar views are gained. Geographical extent is described as being **large** (widespread), **medium** or **small** (localised).

Duration

6.3.7 The duration of visual effects is reported as **short-term** or **long-term**, as defined for the duration of landscape effects (see above).

Reversibility

6.3.8 Reversibility is reported as **irreversible** (i.e. permanent), **partially reversible** or **reversible**, and is related to whether the visual change can be reversed at the end of the phase of development under consideration (i.e. at the end of construction or at the end of the operational lifespan of the development). Operational visual effects associated with the proposed substation has been considered to be irreversible due to the operational lifetime of the infrastructure and long-term network requirements.

6.3.9 Judgements on the magnitude of visual change are recorded as **high**, **medium**, **low** or **barely perceptible** guided by **Table 5.10** below, based on combining professional judgements on size and scale, geographical extent, duration and reversibility.

Table 5.10 Magnitude of Visual Change

	Higher	⟷	Lower
Size/scale	A large visual change resulting from the Proposed Development is the most notable aspect of the view, perhaps as a result of the development being in close proximity, or because a substantial part of the view is affected, or because the development introduces a new focal point and/or provides contrast with the existing view and/or changes the scenic qualities of the view.	⟷	A small or some visual change resulting from the Proposed Development as a minor or generally unnoticed aspect of the view, perhaps as a result of the development being in the distance, or because only a small part of the view is affected, and/or because the development does not introduces a new focal point or is in contrast with the existing view and/ does not change the scenic qualities of the view.
Geographical Extent	The assessment location is clearly representative of similar visual effects over an extensive geographic area.	⟷	The assessment location clearly represents a small geographic area.
Duration	Visual change experienced over around 5 years or more	⟷	Visual change experienced over a short period of up to 5 years.
Reversibility	A permanent visual change which is not reversible or only partially reversible following decommissioning of the Proposed Development.	⟷	A temporary visual change which is largely reversible following the completion of construction, or decommissioning of the Proposed Development.

6.4 Judging the Level of Visual Effect and Significance

6.4.1 As for landscape effects, the final step in the assessment requires the judgements on sensitivity of visual receptor and magnitude of visual change to be combined to make an informed professional assessment on the significance of each visual effect.

6.4.2 The evaluations of the individual aspects set out above (susceptibility, value, size and scale, geographical extent, duration and reversibility) are considered together to provide an overall profile of each identified visual effect. An overview is then taken of the distribution of judgements for each aspect to make an informed professional assessment of the overall level of effect, drawing on good practice guidance provided in GLVIA3.

6.4.3 The sensitivity of visual receptors may involve a complex relationship between a visual receptors' (e.g., people's) susceptibility to change and the value attached to a view. Therefore, the rationale for judgements of sensitivity is clearly set out for each receptor in relation to both its susceptibility to the type of change proposed, and its value.

6.4.4 A rigid matrix-type approach, where the level of visual effect is defined simply based on the level of sensitivity combined with the magnitude of change is not used. As such, the conclusion on the level of effect is not always the same for similar receptors. Although a numerical or formal weighting system is not applied, consideration of the relative importance of each aspect is made to feed into the overall decision. Levels of visual effect are identified as **none**, **minor**, **moderate** or **major**, where moderate and major visual effects are considered **significant** in the context of the EIA Regulations.

6.4.5 This determination requires the application of professional judgement and experience to take on board the many different variables which need to be considered, and which are given different weight according to site-specific and location-specific considerations in every instance. As such, the conclusion on the level of effect is not always the same for similar receptors. Judgements are made on a case-by-case basis, guided by the principles illustrated in **Diagram 1** above, and the example descriptions/definitions detailed in **Table 5.11** below.

Table 5.11 Level and Significance of Visual Effects

Level and Significance of Landscape Effect	Indicative Description
Major (significant)	The Proposed Development will result in an obvious change in 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 scale of effect 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.
Moderate (significant)	The Proposed Development will result in a noticeable change in a 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 scale 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.
Minor (not significant)	The Proposed Development will result in a small change in 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.
None (not significant)	The Proposed Development will not result in a noticeable (barely perceptible) change in views.

7. CUMULATIVE LANDSCAPE AND VISUAL IMPACT ASSESSMENT (CLVIA)

7.1.1 The aim of a Cumulative Landscape and Visual Impact Assessment (CLVIA) is to identify any interactions with other types of development (including transmission infrastructure, wind farms or other large scale development) which could result in further significant landscape and visual effects not identified within the LVIA.

7.1.2 The cumulative assessment focuses on the total (also referred to as combined) cumulative change which may result from the introduction of a Proposed Development alongside other proposed and consented developments. A cumulative assessment considers the potential interactions between different types of development (including wind farms, other energy generation stations or other large scale development) if these are likely to result in similar landscape and visual impacts.

7.1.3 As with LVIA, CLVIA deals with cumulative landscape and visual effects separately.

7.2 Differences between LVIA and CLVIA

7.2.1 Although both LVIA and CLVIA look at the effects of a Proposed Development on the landscape and on views, there are differences in the baseline against which the assessments are carried out.

7.2.2 For the 'primary' LVIA, the baseline includes existing developments (including transmission infrastructure, wind farms other large scale development) which are present in the landscape at the time of undertaking the assessment, which may be either operational or under construction, and as such they are assumed to form a part of the baseline situation. Their presence has the potential to influence the assessment of effects on landscape (including its character) and the assessment of effects on views.

7.2.3 For the CLVIA the baseline is partially speculative and in addition to the Proposed Development, other proposed developments within the Study Area that are considered reasonably foreseeable to the Applicant are considered within the assessment of potential future cumulative effects, as they may give rise to different potential future cumulative baseline scenarios. Reasonably foreseeable projects include those with planning consent, with valid planning applications, or other projects where sufficient information is available to inform a cumulative assessment. The developments considered within the CLVIA are listed within **Table 8.4** in **Chapter 8: Landscape and Visual Amenity** and shown on **Figure 5.1**.

7.2.4 Operational and under construction developments form part of the baseline for the LVIA and therefore inform the 'primary' LVIA assessment.

7.2.5 The cumulative assessment considers the operational and under construction sites, as well as consented and proposed sites, and differs from that contained in the LVIA in that it focuses specifically on the cumulative effects of the Proposed Development arising in association with all other transmission infrastructure, wind farms or other large scale developments, and assesses the relationship between them.

7.3 Types of Cumulative Effects

7.3.1 Assessing the Cumulative Impact of Onshore Wind Energy Developments states that "*cumulative landscape effects can change either the physical fabric or character of the landscape, or any special values attached to it*" (NatureScot, 2021).

7.3.2 Three types of cumulative effects on visual amenity are considered in the assessment: combined, successive and sequential:

- **Combined** effects occur where a static viewer is able to view two or more developments from a viewpoint within the viewers' same arc of vision (assumed to be about 90 degrees for the purpose of the assessment);
- **Successive** effects occur where a static viewer is able to view two or more developments from a viewpoint, but needs to turn to see them; and

- **Sequential** effects occur when a viewer is moving through the landscape from one area to another, for instance when a person is travelling along a road or footpath, and is able to see two or more developments at the same, or at different times as they pass along the route. Frequently sequential effects occur where developments appear regularly, with short time lapses between points of visibility. Occasionally sequential effects occur where long periods of time lapse between views of developments, depending on speed of travel and distance between viewpoints.

7.4 Assessing Cumulative Effects

Assessment Methodology for CLVIA

7.4.1 The CLVIA considers the potential effects of the Proposed Development, alongside transmission infrastructure, wind farms/ other energy generation infrastructure or other larger scale development that may or may not be present in the landscape in the future, i.e. developments that are consented but not yet built, and/or undetermined planning applications, and/or at pre-application stage but where sufficient information is available to inform a cumulative assessment.

7.4.2 The methodology for the CLVIA follows that of the primary LVIA, which considers the introduction of a proposed development to a baseline which includes existing (operational and under construction) developments. The size and scale of cumulative change focusses on:

- the number of existing, consented and/or proposed developments;
- the pattern and arrangement of developments in the landscape or view, e.g. developments seen in one direction or part of the view (combined views), or seen in different directions (successive views in which the viewer must turn) or developments seen sequentially along a route;
- the relationship between the scale of the developments (similar scale developments or scales of development which are clearly at odds with each other);
- the position of the developments in the landscape, e.g. in similar landscape or topographical context;
- the position of the developments in the view, e.g. on the skyline or against the backdrop of land; or how the Proposed Development will be seen in association with another development (separate, together, behind etc.); and
- the distances between developments, and their distances from the viewer.

Study Area

7.4.3 The study area for a CLVIA is determined by the nature and scale of the development proposed, the nature of the surrounding area (e.g. complex topography or extensive tree cover leading to visually enclosed areas may limit the extent of likely significant effects), and informed by the location, pattern and distribution of existing, consented and proposed developments which may give rise to similar landscape and visual effects as the substation. For the purposes of the CLVIA assessment, other developments within a study area of 5 km radius from the Site boundary were considered. The importance of the cumulative assessment was highlighted by statutory consultees (e.g. Aberdeenshire Council and NatureScot).

Significance of Cumulative Effects

7.4.4 The likely significance of cumulative landscape and visual effects is judged using the same principles as the main LVIA, as set out in section 4 above. Using these principles, an understanding of the sensitivity and magnitude of cumulative landscape and visual were combined to make an informed professional assessment on the significance of each cumulative landscape and visual effect.

7.4.5 The CLVIA considers the significant effects of the Proposed Development as set out in the primary LVIA, and the likely significant effects of each of the cumulative schemes (as set out in **Table 8.4** in **Chapter 8: Landscape and Visual**

Amenity). It considers whether the Proposed Development alongside each of the cumulative schemes would result in cumulative landscape and visual effects which are judged likely to be significant.

7.4.6 GLVIA 3 states *'The most significant cumulative landscape effects are likely to be those that would give rise to changes in the landscape character of the study area of such an extent as to have major effects on its key characteristics and even, in some cases, to transform it into a different landscape type. This may be the case where the project being considered itself tips the balance through its additional effects. The emphasis must always remain on the main project being assessed and how or whether it adds to or combines with the others being considered to create a significant cumulative effect'* (paragraph 7.28, page 129).

7.4.7 Significant landscape effects are likely where:

- a proposed development extends or intensifies a landscape effect;
- a proposed development 'fills' an area such that it alters the landscape resource; and / or
- the interaction between a proposed development and other developments means that the total effect on the landscape is greater than the sum of its parts.

7.4.8 Significant visual effects are likely where:

- a proposed development extends or intensifies a visual effect;
- a proposed development 'fills' an area such that it alters the view/visual amenity;
- the interaction between a proposed development and other developments means that the total visual effect is greater than the sum of its parts; and/or
- a proposed development will lengthen the time over which effects are experienced (sequential effects).

7.4.9 This determination of cumulative landscape and visual effects requires the application of professional judgement and experience to take on board the many different variables which need to be considered, and which are given different weight according to site-specific and location-specific considerations in every instance. Judgements are made on a case-by-case basis, guided by the same principles as set out in **Diagram 1**, and the typical descriptions/definitions of potential landscape effects set out above.

8. ZONE OF THEORETICAL VISIBILITY (ZTV) PRODUCTION

8.1.1 Evaluation of the theoretical extent to which both the proposed substation infrastructure is visible across the study area is undertaken by establishing a ZTV.

8.1.2 The following heights were applied to the proposed infrastructure, control building (5.9 m), component covers (15 m), fence line (3.9 m), electrical equipment (13.5 m).

8.1.3 A ZTV has been prepared based on a 'Bare Earth' computer generated DTM which does not take account of potential screening by buildings, woodland, vegetation or other surface features. In addition, a screening ZTV has been prepared using screening features including proposed modelled earthworks, forest and woodland features and buildings. Further detail about how the ZTVs have been generated and the data used is provided below.

8.1.4 The bare earth and screening ZTV were calculated using ArcGIS Pro 3.3.1 software.

8.2 Bare Earth ZTV

8.2.1 The bare earth DTM is comprised of OS Terrain® 5 (5m resolution) data across the 5 km study area. It should be noted that the software uses raster height data, but while it is defined as continuous data (with each grid square referred to as a 'cell'), it assumes a single height value from the centre of that cell for the whole cell. Therefore, any height variations between centre points of cells will not be recognised.

8.2.2 The DTM data has not been altered (i.e. by the addition of local surface screening features) for the production of the Bare Earth ZTV. No significant discrepancies have been identified between the DTM used and the actual topography around the study area. The effect of earth curvature and light refraction has been included in the Bare Earth ZTV analysis and a viewer height of 2 m above ground level has been used.

- There are limitations in the use and reliance on this theoretical visibility, and these should be considered in the interpretation and use of the ZTV:
- The ZTV uses a 'bare ground' DTM model, and does not consider the screening effects of vegetation, buildings, or other local features that may prevent or reduce visibility;
- The ZTV is considered to over emphasise the extent of visibility of the proposed overhead transmission infrastructure and therefore represents a 'maximum potential visibility' scenario; and
- There is often a wide range of variation within the visibility illustrated by a ZTV, for example, an area shown as having visibility of a larger number of proposed steel lattice towers or wood poles may in reality only be the result of only a small proportion of the structures, which can make a considerable difference in the potential effects of the Proposed Development on receptors within the area affected by visibility.

8.2.3 In light of these limitations, whilst ZTVs are used as a starting point to inform the assessment, providing an indication of where the Proposed Development will theoretically be visible, the information drawn from the ZTV was verified with reference computer generated wireline images of the Proposed Development in the field, to ensure that the assessment conclusions represent the visibility of the Proposed Development reasonably accurately.

8.3 Screening ZTV

8.3.1 The screening ZTV comprised of combining OS Terrain® 5 (5 m resolution) DTM data with the proposed modelled earthworks (see **Figure 3.3: Landscape Design**), Forestry Commissions National Forest Inventory (2022) and OS Vector Map District buildings. The following categories from the national forest inventory were included in the screening layer, broadleaved, conifer, mixed mainly broadleaved, mixed mainly conifer and young trees. The woodland screening features have been set to a height of 15 m with the exception of young trees which was set to 5 m. A height of 8 m was assigned to the OS Vector Map District buildings. All screening features have been clipped to 5 km of the red line boundary. Overlaps between the national forest inventory data and OS buildings were removed before combining with the OS Terrain® 5 (5m resolution) DTM data. **Chapter 7: Forestry** summarises the proposed felling locations. For the

purpose of the screening ZTV, woodland blocks were removed from the screening layer based on the Proposed Development felling plan (**Figure 7.3: Proposed Development Felling Plan**).

8.3.2 It should be noted that the software uses raster height data, but while it is defined as continuous data (with each grid square referred to as a 'cell'), it assumes a single height value from the centre of that cell for the whole cell. Therefore, any height variations between centre points of cells will not be recognised.

9. PHOTOGRAPHY

9.1 Viewpoint photography

9.1.1 Viewpoint photography was undertaken from five number of assessment viewpoint locations to capture the existing baseline view in compliance with Landscape Institute Advice Note 06/19 - Visual Representation of Development Proposals (The Landscape Institute, 2019). Photography was undertaken by LUC from November 2023 to October 2024.

9.1.2 A series of overlapping photographs to an extent of 360 degrees were taken with either a Nikon D750 or D600 Full Frame digital SLR camera, with a fixed 50 mm focal length lens using a fully levelled tripod with Manfrotto panoramic head.

9.1.3 A tripod with vertical and horizontal spirit levels was used to provide stability and to ensure a level set of adjoining images. A panoramic head was used to ensure the camera rotated about the no-parallax point of the lens to eliminate parallax errors between the successive images and enable accurate stitching of the images. The camera was moved through increments of 24 degrees and rotated through a full 360 degrees at each viewpoint. 15 photographs were taken for each 360-degree view.

9.1.4 The location of each viewpoint was recorded (GPS grid reference, location map and photograph of the tripod) in accordance with NatureScot and Landscape Institute guidance

9.1.5 Weather conditions and visibility were considered an important aspect of the field visits for the photography. Where possible, visits were planned around clear days with good visibility. Viewpoint locations were visited at times of day to ensure, as far as possible, that the sun lit the scene from behind, or to one side of the photographer. Photography opportunities facing into the sun were avoided where possible.

Photography Stitching

9.1.6 Photography stitching software (PTGui© version 12.24) was used to stitch together the adjoining images to form panoramic images in cylindrical projection. A selection of identical control points was created within each of the adjoining frames to increase the level of accuracy when stitching the 360° panoramic photography.

10. VISUALISATION PRODUCTION

10.1 Photomontage Visualisations

10.1.1 The 3D development proposal model of the substation was provided in Revit and DXF formats (provided August 2024). The models contained the proposed Hurlie Substation and connecting OHLs, including proposed pylon locations, ancillary infrastructure and landscape cut and fill. CAD layouts of mitigation planting proposals, along with species mix and growth heights were also included.

10.1.2 Due to the cumulative OHL model of the pylons being incomplete, placeholder towers were used in some locations to represent those still under design. The chosen placeholder tower is AS4_AD_E12+(4x6 m LE) and was chosen based on it being consistent in arm length and height, and slightly wider than the typical towers used elsewhere.

10.1.3 Software packages Autodesk 3DS Max© and Blender version 4.2.0.0 was used to view the Proposed Development from the selected viewpoints. 3DS Max was used as the primary modelling and render software. Blender (using the GIS add on) was used to manage, convert and render terrain models).

10.1.4 Environment Agency Composite 2m LiDAR Digital Terrain Model (DTM) was used to obtain accurate z value heights for all viewpoint locations. This data has a vertical accuracy of +/-15cm. This data provided a detailed and reliable representation of the topography for the model views.

10.1.5 The DTM was imported into Blender using the GIS Add on and exported as an FBX for use within the 3DS Max model to render only parts of the substation and OHL model that weren't obscured from view by terrain.

10.1.6 The viewpoint locations were then added to the 3DS Max environment model using the on-site photography GPS coordinate positions, cross-referenced and micro-sited with high-resolution aerial photography. The model views were created to replicate the camera lens parameters and perspective geometry of the baseline photography. Exposure settings (Aperture, ISO and Shutter speed) contained within the metadata of each photograph was also matched to the model cameras. The DTM renders provided an accurate guide for skewing the baseline photography to match the 3D terrain.

10.1.7 Viewer height was set to 1.5 m above ground level. On limited occasions this viewer height was increased by a small increment to achieve a closer match between the terrain data and photographic landform content.

10.1.8 Control points, including existing pylons, buildings and other notable landmarks, identified in high-resolution aerial photography were used to aid alignment of the model and photographic views, along with the rendered terrain model.

10.1.9 90° sections of the baseline photographs were linked as a background to each model view which allowed accurate horizontal and vertical alignment of the proposed overhead line within the view.

10.1.10 The presentation of fully rendered photomontages involved additional stages as follows

10.1.11 3DS Max software was used to render the substation, pylons, mitigation planting and associated infrastructure. A daylight system was created in the 3D model view with lighting strength and direction applied to closely represent the conditions present at the date and time when each photograph was taken.

10.1.12 The next stage required the 3D model views to be rendered, composited and aligned with the baseline photography using Adobe Photoshop© software and allowed, where relevant, for infrastructure or parts of infrastructure to be masked (removed) where they were located behind foreground elements that appeared in the original photograph.

10.1.13 Adobe InDesign© software was used to present the figures. The dimensions for each image (printed height and field of view) are in accordance with NatureScot requirements. Photography information and viewing instructions are provided on each page.

10.1.14 All viewpoints have been presented as separate images with a cylindrically projected 90° horizontal field of view (FOV) and a planar projected 53.5° horizontal FOV.

10.1.15 The elongated A1 width format pages (841 x 297mm) presented for each viewpoint are set out as follows:

10.1.16 Viewpoint location plan – basemap with OS 50K basemapping showing viewpoint location and illustrating the 90˚ view directions shown in subsequent pages.

1. Baseline Photograph - 90˚ baseline photography to illustrate the wider landscape and visual context. These are shown in cylindrical projection and presented on an A1 width page. Additional pages in the same format are provided where relevant to illustrate wider cumulative visibility up to 360˚.
2. Photomontage at Year 0- 90˚ montage at Type 4/AVR2 level of detail. The photomontage matches the same formatting as the baseline photograph above, with fully rendered models representing the Substation. Mitigation Planting is depicted at a height consistent with species growth in its first year since planting.
3. Photomontage at Year 0- 53.5˚ montage at Type 4/AVR2 level of detail. The photomontage matches the same formatting as the baseline photograph above, with fully rendered models representing the Substation. Mitigation Planting is depicted at a height consistent with species growth in its first year since planting.
4. Photomontage at Year 10 - 90˚ montage at Type 4/AVR2 level of detail. The photomontage matches the same formatting as the baseline photograph above, with fully rendered models representing the Substation. Mitigation Planting is depicted at a height consistent with species growth in its tenth year since planting.
5. Photomontage at Year 0- 53.5˚ montage at Type 4/AVR2 level of detail. The photomontage matches the same formatting as the baseline photograph above, with fully rendered models representing the Substation. Mitigation Planting is depicted at a height consistent with species growth in its first year since planting.
6. Photomontage at Year 0 with cumulative OHL- 90˚ montage at Type 4/AVR2 level of detail. The photomontage matches the same formatting as the baseline photograph above, with fully rendered models representing the Substation. Mitigation Planting is depicted at a height consistent with species growth in its first year since planting. Wireline overlays depict the position of OHL towers within a 5 km radius surrounding the substation.