CALEDONIA
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Volume 7E Proposed Development (Onshore) Appendices

Appendix 4-1 Landscape and Visual Impact Assessment Methodology

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Acronyms and Abbreviations

CIA	Cumulative Impact Assessment
CLVIA	Cumulative Landscape and Visual Impact Assessment
CMOS	Complementary metal oxide semiconductor
FFL	Finished Floor Level
FoV	Field Of View
GIS	Geographic Information Systems
GLVIA3	Guidelines for Landscape and Visual Impact Assessment
IEMA	Institute of Environmental Management and Assessment
km	Kilometre
LVIA	Landscape and Visual Impact Assessment
m	Metre
OS	Ordnance Survey
SLR	Single Lens Reflex
ZTV	Zone of Theoretical Visibility

1 Landscape and Visual Impact Assessment Methodology

1.1 Introduction

1.1.1.1 This technical appendix supports Volume 5, Chapter 4: Landscape and Visual of the Environmental Impact Assessment Report (EIAR).

1.1.1.2 The purpose of this appendix is to present the methodology used in the preparation of the Landscape and Visual Impact Assessment (LVIA) presented within the EIAR.

1.1.1.3 The LVIA has been undertaken in accordance with Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3) (Landscape Institute and Institute of Environmental Management and Assessment (IEMA) 2013[1]) and other best practice guidance, listed in paragraph 1.1.1.9. An overview of the LVIA process is provided below.

1.1.1.4 The LVIA is undertaken using the following steps:

- The features of the Proposed Development (Onshore) that may result in landscape and visual effects are described;
- The overall scope of the assessment is defined, including the study area and range of possible landscape and visual effects;
- The landscape baseline is established using landscape character assessment and the Zone of Theoretical Visibility (ZTV) maps, to identify landscape receptors that may be affected and their key characteristics and value;
- The visual baseline is established by identifying the extent of possible visibility, identifying the people who may be affected, identifying visual receptors and selecting viewpoints;
- A preliminary assessment is undertaken of landscape and visual receptors to identify which landscape and visual receptors are unlikely to be significantly affected; and those that are more likely to be significantly affected and which require more detail assessment;
- Interactions are identified between the Proposed Development (Onshore) and landscape and visual receptors to predict potentially significant effects arising and measures are proposed to mitigate effects;
- An assessment of the susceptibility of landscape and visual receptors to specific change and the value attached to landscape receptors and views is undertaken, combining these judgements to assess the sensitivity of the landscape and visual receptor to the Proposed Development (Onshore);
- An assessment of the size/scale of landscape effect, the degree to which landscape elements are altered and the extent to which the effects change the key characteristics of the landscape is undertaken, combining these judgements to assess the magnitude of change on the landscape receptor;

- An assessment of the size/scale of visual effect, the extent to which the change would affect views, whether this is unique or representative of a wider area, and the position of the Proposed Development (Onshore) in relation to the principal orientation of the view and activity of the receptor. These judgements are combined to assess the magnitude of change on the visual receptor; and
- The assessments of sensitivity to change and magnitude of change are combined to assess the significance of landscape and visual effects.

1.1.1.5 GLVIA3 (Landscape and IEMA, 2013[1]) sets out an approach to the assessment of magnitude of change in which three separate considerations are combined within the magnitude of change rating. These are the size or scale of the effect, its geographical extent and its duration and reversibility. Notably GLVIA3 (Landscape and IEMA, 2013[1]) is not a prescriptive methodology but guidance. The guidance suggests that this approach is to be applied in respect of both landscape and visual receptors. It is considered that the process of combining all three considerations in one rating can distort the aim of identifying likely significant effects of development. For example, a high magnitude of change, based on size or scale, may be reduced to a lower rating if it occurred in a localised geographical area and for a short duration. This might mean that a potentially significant effect would be overlooked if effects are diluted down due to their limited geographical extents and/or duration or reversibility.

1.1.1.6 As advocated by GLVIA3 (Landscape and IEMA, 2013[1]) the assessment has used professional judgement in defining the methodology for the LVIA. GLVIA3 (Landscape and IEMA, 2013[1]) (paragraphs 2.23-2.24) states that:

"Professional judgement is a very important part of LVIA……Professional judgements must be based on both training and experience and in general suitably qualified and experienced landscape professionals should carry out Landscape and Visual Impact Assessments. Even with qualified and experienced professionals there can be differences in the judgements made. This may result from using different approaches or different criteria, or from variation in judgements based on the same criteria."

1.1.1.7 In this LVIA, the consideration of the size or scale of the effect, its geographical extent and its duration and reversibility has been undertaken separately, by basing the magnitude of change on size or scale to determine where significant and not significant effects occur, and then describing the geographical extents of these effects and their duration and reversibility separately. Duration and reversibility are stated separately in relation to the assessed effects (i.e., as short/medium/long-term and temporary/permanent) and are considered as part of drawing conclusions about likely significance, combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant.

1.1.1.8 The assessment methodology utilises six scales of magnitude of change - high, medium-high, medium, medium-low, low and negligible/none; which are

preferred to the 'maximum of five categories' suggested in GLVIA3 as a means of clearly defining and summarising magnitude of change judgements.

1.1.1.9 Volume 5, Chapter 4: Landscape and Visual has followed the methodology set out in this appendix of the EIAR. Specific to the assessment of LVIA, the following guidance documents have also been considered:

- Visual Representation of Development Proposals (Landscape Institute, 2019[2]);
- Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3) (Landscape Institute and IEMA, 2013[1]);
- Assessing the Cumulative Impact of Onshore Wind Energy Developments (NatureScot, 2021[3]); and
- Guidance for applicants on using the design envelope for applications under Section 36 of the Electricity Act 1989 (Scottish Government, 2022[4]).

1.2 Approach to Assessment and Assessment Criteria

1.2.1 Design Envelope Approach

1.2.1.1 Consideration of the Proposed Development (Onshore) and its landscape and visual impact is based on a 'Design Envelope' approach following the Guidance for applicants on using the design envelope for applications under Section 36 of the Electricity Act 1989 (Scottish Government, 2022[4]). A design envelope assessment approach is used in the LVIA as Caledonia Offshore Wind Farm Ltd (the Applicant) is seeking planning permission in principle and due to the uncertainty of the detail of the final Proposed Development (Onshore), due to the nature of the Proposed Development (Onshore) and evolving technology.

1.2.1.2 In accordance with the guidance the LVIA will:

- be undertaken on the basis of the relevant design parameters applicable to the characteristics of the Proposed Development (Onshore) identified within Volume 1, Chapter 4: Proposed Development (Onshore) Description; and
- for each of the different receptors, establish those maximum design parameters likely to result in the maximum adverse effect (the worst-case scenario) and an assessment be undertaken accordingly to determine significance.

1.2.2 Categories of Effects

1.2.2.1 In this assessment, potential effects on the landscape and visual resource are grouped into four categories:

- Effects on Physical Landscape Elements: are restricted to the area within the Onshore Transmission Infrastructure (OnTI) Red Line Boundary (RLB) and are the direct effects on the existing fabric of the Proposed Development (Onshore). This category of effects is made up of landscape elements, which are the components of the landscape, such as trees and hedges, that may be directly and physically affected by the Proposed Development (Onshore);
- Effects on Landscape Character: landscape character is the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and the way that this pattern is perceived. Effects on landscape character arise either through the removal of elements and/or introduction of new elements that physically alter the pattern of elements, or through visibility of the Proposed Development (Onshore), which may alter the way in which the pattern of elements is perceived. This category of effects is made up of landscape character receptors, which fall into two groups; landscape character types and landscape-related designated areas;
- Effects on Views: the assessment of effects on views is an assessment of how the introduction of the Proposed Development (Onshore) would affect views throughout the study area. The assessment of effects on views is carried out in two parts:
  - an assessment of the effects that the Proposed Development (Onshore) would have on a series of viewpoints, which may also represent views from principal visual receptors; and
  - an assessment of the effects that the Proposed Development (Onshore) would have on views from principal visual receptors, which include relevant settlements and routes throughout the study area.

1.2.3 Physical Landscape Elements

1.2.3.1 The sensitivity of a physical landscape element is an expression of its ability to accommodate the Proposed Development (Onshore). This is dependent on the value of the landscape element and its susceptibility to the change that would arise from the addition of the Proposed Development (Onshore).

Value of the landscape element

1.2.3.2 The value of a landscape element is a reflection of its importance in the pattern of elements which constitute the landscape character of the area. For example, the value of woodland is likely to be increased if it provides an important component of the local landscape character. If a landscape element is particularly rare - as a remnant of a historic landscape layout for example - its value is likely to be increased.

Landscape element susceptibility to change

1.2.3.3 The susceptibility of a landscape element is a reflection of the degree to which the element can be restored, replaced or substituted. For example, it may be possible to restore ground cover following the excavation required for the building of turbine foundations, and this would reduce the susceptibility of this element.

Landscape element sensitivity rating

1.2.3.4 The sensitivity of each landscape element is a product of the specific combination of value and susceptibility to the Proposed Development (Onshore) as evaluated by professional judgement. The evaluation of sensitivity is described for each receptor in the assessment, and levels of sensitivity - high, medium or low - are applied. Interim levels of sensitivity – medium-high and medium-low - may also be applied where appropriate for the combination of value and susceptibility.

2.2.1 Landscape elements magnitude of change

1.2.3.5 The magnitude of change on landscape elements is quantifiable and is expressed in terms of the degree to which a landscape element would be removed or altered by the Proposed Development (Onshore). Definitions of magnitude of change are applied in order that the process of assessment is made clear.

- High: where the Proposed Development (Onshore) would result in the complete or substantial removal of a key landscape element;
- Medium: where the Proposed Development (Onshore) would result in the removal of or major alteration to a notable part of a key landscape element;
- Low: where the Proposed Development (Onshore) would result in the removal of or alteration to a minor part of a key landscape element; and
- Negligible/none: where the alteration to the landscape element is barely discernible or there is no change.

1.2.3.6 There may also be intermediate levels of magnitude of change – medium-high and medium-low - where the change falls between two of the definitions.

Evaluating effects on landscape elements and their significance

1.2.3.7 The significance of the effect on landscape elements is dependent on all of the factors considered in the sensitivity of the receptor and the magnitude of change upon it. A significant effect would occur where the degree of removal or alteration of a key landscape element is such that the form of this element would be redefined. If the landscape element is of a high sensitivity, a significant effect can occur with a relatively limited degree of removal or alteration. A not significant effect would occur where the landscape element is not a key landscape element, and/or is not redefined as a result of the Proposed Development (Onshore). If the landscape element is of lower sensitivity, it may undergo a higher level of removal or alteration yet remain as a not significant effect.

1.2.4 Landscape Character

Sensitivity of landscape receptor

1.2.4.1 The sensitivity of a landscape character receptor is a combination of the judgements made about the value associated with that receptor and the susceptibility of the receptor to the Proposed Development (Onshore).

Value of the landscape receptor

1.2.4.2 Guidance within Assessing Landscape Value Outside National Designations, Technical Guidance Note 02/21 (Landscape Institute, 2021[5]) informs the appraisal of landscape value. The value of a landscape character receptor is a reflection of the value that society attaches to that landscape. The assessment of the landscape value is classified as high, medium-high, medium, medium-low or low and the basis for this assessment is made clear using evidence and professional judgement, based on the following range of factors.

1.2.4.3 Landscape designations - A receptor that lies within the boundary of a recognised landscape related planning designation is of increased value, depending on the proportion of the receptor within it and the level of importance of the designation which may be international, national, regional or local. The absence of designations does not however preclude value, as an undesignated landscape character receptor may be valued as a resource in the local or immediate environment.

1.2.4.4 Landscape quality - The quality of a landscape character receptor is a reflection of its attributes, such as scenic quality, sense of place, rarity and representativeness and the extent to which its valued attributes have remained intact. A landscape with consistent, intact, well-defined and distinctive attributes is considered to be of higher quality and, in turn, higher value, than a landscape where the introduction of elements has detracted from its character.

1.2.4.5 Landscape experience - The experiential qualities that can be evoked by a landscape receptor can add to its value and relates to a number of factors including:

- the perceptual responses it evokes;
- the cultural associations that may exist in literature or history, or the iconic status of the landscape in its own right;
- the recreational value of the landscape; and
- the contribution of other values relating to the nature conservation or archaeology of the area.

Landscape susceptibility to change

1.2.4.6 The susceptibility of a landscape character receptor to change is a reflection of its ability to accommodate the changes that would occur as a result of the addition of the Proposed Development (Onshore). Some landscape receptors are better able to accommodate change as a result of the development than others due to certain characteristics that are indicative of capacity to accommodate change. These characteristics may or not also be special landscape qualities that underpin designated landscapes.

1.2.4.7 The assessment of the susceptibility of the landscape receptor to change is classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement. The following indicators of landscape susceptibility are considered in the context of the Proposed Development (Onshore):

- Overall strength and robustness: Collectively the overall characteristics and qualities of a particular landscape result in a strong and robust landscape that is capable of reasonably accommodating the influence of the Proposed Development (Onshore) without undue adverse effects on the special landscape qualities (in the case of a designated landscape) or the key characteristics;
- Landscape scale and topography: The scale and topography are large enough to physically accommodate the influence of the Proposed Development (Onshore). Topographical features such as more complex, distinctive or small-scale coastal landforms are likely to be more susceptible than simple, broad and homogenous coastal landforms;
- Openness and enclosure: Openness in the landscape may increase susceptibility to change because it can result in wider visibility, however an open landscape may also be larger scale and simple, which would decrease susceptibility. Conversely, enclosed landscapes can offer more screening potential, limiting visibility to a smaller area, however they may also be smaller scale and more complex which would increase susceptibility;

- Skyline: Prominent and distinctive skylines and horizons with important landmark features that are identified in the landscape character assessment, are generally considered to be more susceptible to development in comparison to broad, simple skylines which lack landmark features or contain other infrastructure features;
- Relationship with other development and landmarks: Contemporary landscapes where there are existing similar developments or other forms of development (industry, mineral extraction, masts, urban fringe/large settlement, major transport routes) that already have a characterising influence result in a lower susceptibility to development in comparison to areas characterised by limited development or smaller scale, historic development and landmarks;
- Perceptual qualities: Notable landscapes that are acknowledged to be particularly scenic, wild or tranquil are generally considered to be more susceptible to development in comparison to ordinary, cultivated or farmed/developed landscapes where perceptions of 'wildness' and tranquility are less tangible. Landscapes which are either remote or appear natural may vary in their susceptibility to development; and
- Landscape context and association: the extent to which the Proposed Development (Onshore) would influence the character of landscape receptors across the study area relates to the associations that exist between the landscape receptor within which the Proposed Development (Onshore) is located and the landscape receptor from which the Proposed Development (Onshore) is experienced. In some situations, this association is strong, where the landscapes are directly related, and in other situations weak, where the landscape association is weak. The context and visual connection to areas of adjacent landscape character or designations has a bearing on the susceptibility to development.

Landscape sensitivity rating

1.2.4.8 An overall sensitivity assessment of the landscape receptor is made by combining the assessment of the value of the landscape character receptor and its susceptibility to change. The evaluation of landscape sensitivity has been applied for each landscape receptor - high, medium-high, medium, medium-low and low - by combining individual assessments of the value of the receptor and its susceptibility to change.

Landscape character magnitude of change

1.2.4.9 The magnitude of change affecting landscape receptors is an expression of the scale of the change that would result from the Proposed Development (Onshore) and is dependent on a number of variables regarding the size or scale of the change and the geographical extent over which the change would be experienced.

Size or scale of change

1.2.4.10 This criterion relates to the size or scale of change to the landscape that would arise as a result of the Proposed Development (Onshore), based on the following factors.

- Landscape elements: The degree to which the pattern of elements that makes up the landscape character is altered by the Proposed Development (Onshore), by removal or addition of elements in the landscape. The magnitude of change will generally be higher if the features that make up the landscape character are extensively removed or altered, and/or if many new elements are added to the landscape;
- Landscape characteristics: The extent to which the effect of the Proposed Development (Onshore) changes, physically or perceptually, the key characteristics of the landscape that may be important to its distinctive character. This may include, for example, the scale of the landform, its relative simplicity or irregularity, the nature of the landscape context, the grain or orientation of the landscape, the degree to which the receptor is influenced by external features and the juxtaposition of the Proposed Development (Onshore) in relation to these key characteristics. If the Proposed Development (Onshore) is located in a landscape receptor that is already affected by other similar development, this may reduce the magnitude of change, particularly if there is a high level of integration and the developments form a unified and cohesive feature in the landscape;
- Landscape designation: In the case of designated landscapes, the degree of change is considered in light of the effects on the special landscape qualities which underpin the designation and the effect on the integrity of the designation. All landscapes change over time and much of that change is managed or planned. Often landscapes will have management objectives for 'protection' or 'accommodation' of development. The scale of change may be localised, or occurring over parts of an area, or more widespread affecting whole landscape receptors and their overall integrity;
- Distance: The size and scale of change is also strongly influenced by the proximity of the Proposed Development (Onshore) to the receptor. Distance may be an influential factor to the extent that over a long range the scale of the influence on landscape receptors may be small or very limited. Conversely, landscapes closest to the development are likely to be most affected. Where the development is located within a 'host' landscape character area this would be directly affected whilst adjacent areas of landscape character would be indirectly affected; and
- Amount and nature of change: The amount of the Proposed Development (Onshore) that is seen. Generally, the greater the amount of the Proposed Development (Onshore) that can be seen, the higher the scale of change. Generally, the magnitude of change is likely to be lower where the Proposed Development (Onshore) is largely perceived to be at a distance, rather than 'within' the landscape being considered.

Landscape magnitude of change rating

1.2.4.11 The 'magnitude' or 'degree of change' resulting from the Proposed Development (Onshore) is described as 'high', 'high-medium', 'medium', 'medium-low' 'low' or 'negligible'. In assessing magnitude of change, the assessment focuses on the size or scale of change, its geographical extent and its duration and reversibility, are stated separately in relation to the assessed effects.

Evaluating landscape effects and significance

1.2.4.12 The level of landscape effect is evaluated primarily through the combination of landscape sensitivity and magnitude of change. Once the level of effect has been assessed, a judgement is then made as to whether the level of effect is 'significant' or 'not significant'. This process is assisted by the matrix in Table 1-1 which is used to guide the assessment. Geographical extent and duration and reversibility are considered relevant in drawing conclusions about significance, combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant.

1.2.4.13 Further information is also provided about the nature of the effects (whether these would be direct/indirect; temporary/permanent/reversible; beneficial/neutral/adverse or cumulative).

1.2.4.14 A significant effect occurs where the combination of the variables results in the Proposed Development (Onshore) having a defining effect on the landscape receptor, or where changes of a lower magnitude affect a landscape receptor that is of particularly high sensitivity. A major loss or irreversible effect over an extensive area or landscape character, affecting landscape elements, characteristics and/or perceptual aspects that are key to a nationally valued landscape are likely to be significant, particularly if they are of long duration and irreversible.

1.2.4.15 A non-significant effect would occur where the effect of the Proposed Development (Onshore) is not defining, and the landscape character of the receptor continues to be characterised principally by its baseline characteristics. Equally a small-scale change experienced by a receptor of high sensitivity may not significantly affect the special landscape qualities or integrity of a designation. Reversible effects, on elements, characteristics and character that are of small-scale or geographical extent or affecting lower value receptors, are unlikely to be significant.

1.2.5 Views

1.2.5.1 Effects on views are concerned wholly with the effect of the Proposed Development (Onshore) on views, and the general visual amenity. Visual Effects are defined by the Landscape Institute in GLVIA 3 (Landscape Institute and IEMA, 2013[1]) (paragraph 6.1) as follows:

"An assessment of visual effects deals with the effects of change and development on views available to people and their visual amenity. The concern ... is with assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views."

1.2.5.2 Visual effects are identified for different receptors (people) who would experience the view at their place of residence, within their community, during recreational activities, at work, or when travelling through the area. The visual effects may include the following:

- Visual effect: a change to an existing static view, sequential views, or wider visual amenity as a result of development or the loss of particular landscape elements or features already present in the view; or
- Cumulative visual effects: the cumulative or incremental visibility of similar types of development may combine to have a cumulative visual effect.

1.2.5.3 The level of visual effect (and whether this is significant) is determined through consideration of the sensitivity of the visual receptor and their view and the magnitude of change that would be brought about by the [Proposed Development (Onshore)].

Zone of Theoretical Visibility

1.2.5.4 Plans mapping the ZTV are used to analyse the extent of theoretical visibility of the maximum design parameters of the Onshore Substations. The ZTVs provide a starting point in the assessment process and tend towards giving the greatest calculation of the theoretical visibility.

Viewpoint Analysis

1.2.5.5 Viewpoint analysis is used to assist the assessment and is conducted from selected viewpoints within the study area. The purpose of this is to assess both the level of visual effect for particular receptors and to help guide the design process and focus of the assessment. A range of viewpoints are examined in detail and analysed to determine whether a significant visual effect would occur.

1.2.5.6 The assessment involves visiting the viewpoint location and viewing visualisations prepared for each viewpoint location. Field survey is generally conducted in periods of fine weather with good visibility and considers seasonal changes such as reduced leaf cover or hedgerow maintenance. The viewpoint analysis is used to assist in the assessment of effects on visual receptor locations as well as landscape character effects reported in the LVIA.

Evaluating visual sensitivity to change

1.2.5.7 In accordance with GLVIA3 (Landscape Institute and IEMA, 2013[1]) (paragraphs 6.31-6.37), the sensitivity of visual receptors is determined by a combination of the value of the view and the susceptibility of the visual receptors to the change likely to result from the Proposed Development (Onshore) on the view and visual amenity.

Value of view

1.2.5.8 The value of a view or series of views reflects the recognition and the importance attached either formally through identification on mapping or being subject to planning designations, or informally through the value which society attaches to the view(s). The value of a view has been classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement, based on the following criteria.

- Formal recognition - The value of views can be formally recognised through their identification on Ordnance Survey (OS) or tourist maps as formal viewpoints, sign-posted and with facilities provided to add to the enjoyment of the viewpoint such as parking, seating and interpretation boards. Specific views may be afforded protection in local planning policy and recognised as valued views. Specific views can also be cited as being of importance in relation to landscape or heritage planning designations, for example the value of a view has been increased if it presents an important vista from a designed landscape or lies within or overlooks a designated area, which implies a greater value to the visible landscape; and
- Informal recognition - Views that are well-known at a local level and/or have particular scenic qualities can have an increased value, even if there is no formal recognition or designation. Views or viewpoints are sometimes informally recognised through references in art or literature and this can also add to their value. A viewpoint that is visited or appreciated by a large number of people will generally have greater importance than one gained by very few people.

Susceptibility to change

1.2.5.9 Susceptibility relates to the nature of the viewer experiencing the view and how susceptible they are to the potential effects of the Proposed Development (Onshore). A judgement to determine the level of susceptibility therefore relates to the nature of the viewer and their experience from that particular viewpoint or series of viewpoints, classified as high, medium-high, medium, medium-low or low and based on the following criteria:

- Nature of the viewer - The nature of the viewer is defined by the occupation or activity of the viewer at the viewpoint or series of viewpoints. The most common groups of viewers considered in the visual assessment include residents, motorists, and people taking part in recreational activity or working. Viewers, whose attention is focused on the landscape, or with static long-term views, are likely to have a higher susceptibility. Viewers travelling

in cars or on trains will tend to have a lower susceptibility as their view is transient and moving. The least sensitive viewers are usually people at their place of work as they are generally less susceptible to changes in views; and

- Experience of the viewer - The experience of the visual receptor relates to the extent to which the viewer's attention or interest may be focused on the view and the visual amenity they experience at a particular location. The susceptibility of the viewer to change arising from the Proposed Development (Onshore) may be influenced by the viewer's attention or interest in the view, which may be focused in a particular direction, from a static or transitory position, over a long or short duration, and with high or low clarity. For example, if the principal outlook from a settlement is aligned directly towards the Proposed Development (Onshore), the experience of the visual receptor is altered more notably than if the experience relates to a glimpsed view seen at an oblique angle from a car travelling at high speed. The visual amenity experienced by the viewer varies depending on the presence and relationship of visible elements, features or patterns experienced in the view and the degree to which the landscape in the view may accommodate the influence of the Proposed Development (Onshore).

Visual sensitivity rating

1.2.5.10 An overall level of sensitivity is applied for each visual receptor or view - high, medium-high, medium, medium-low or low by combining individual assessments of the value of the view and the susceptibility of the visual receptor to change. Each visual receptor, meaning the particular person or group of people likely to be affected at a specific viewpoint, is assessed in terms of their sensitivity.

Visual magnitude of change

1.2.5.11 The visual magnitude of change is an expression of the scale of the change that will result from the Proposed Development (Onshore) and is dependent on a number of variables regarding the size or scale of the change. A separate assessment is also made of the geographical extent, duration and reversibility of visual effects.

Size or scale of change

1.2.5.12 An assessment is made regarding the size or scale of change in the view that is likely to be experienced as a result of the Proposed Development (Onshore), based on the following criteria:

- Distance: the distance between the visual receptor/viewpoint and the Proposed Development (Onshore). Generally, the greater the distance, the lower the magnitude of change, as the Proposed Development (Onshore) will constitute a smaller scale component of the view.
- Size: the proportion and size of the [Proposed Development (Onshore)] that is seen. Visibility may range from small or partial visibility of the [Proposed Development (Onshore)] to wider visibility of the onshore elements. Generally, the larger and greater number of elements of the [Proposed

Development (Onshore)] that appear in the view, the higher the magnitude of change. This is also related to the degree to which the Proposed Development (Onshore) may be wholly or partly screened by landform, vegetation (seasonal) and/or built form. Conversely open views are likely to reveal more of the Proposed Development (Onshore), particularly where this is a key characteristic of the landscape context.

- Scale: 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. The scale of the Proposed Development (Onshore) may appear larger or smaller relative to the scale of the receiving landscape.
- Field of view: the vertical/horizontal Field of View (FoV) and the proportion of the view that is affected by the Proposed Development (Onshore). Generally, the more of the proportion of a view that is affected, the higher the magnitude of change. If the Proposed Development (Onshore) extends across the whole of the open part of the outlook, the magnitude of change is higher as the full view has been affected. Conversely, if the Proposed Development (Onshore) covers just a narrow part of an open, expansive and wide view, the magnitude of change is likely to be reduced as it will not affect the whole open part of the outlook. This can in part be described objectively by reference to the horizontal/vertical FoV affected, relative to the extent and proportion of the available view.
- Contrast: the character and context within which the Proposed Development (Onshore) are seen and the degree of contrast or integration of any new features with existing landscape elements, in terms of scale, form, mass, line, height, colour, luminance and motion. Developments which contrast or appear incongruous in terms of colour, scale and form are likely to be more visible and have a higher magnitude of change.
- Consistency of image: the consistency of image of the Proposed Development (Onshore) in relation to other developments. The magnitude of change due to the Proposed Development (Onshore) is likely to be lower if its layout design is broadly similar to other developments in the landscape, in terms of its scale, form and general appearance. New development is more likely to appear as logical components of the landscape with a strong rationale for their location.
- Skyline/background: whether the Proposed Development (Onshore) would be viewed against the skyline or a background landscape may affect the level of contrast and magnitude. If the Proposed Development (Onshore) adds to an already developed skyline the magnitude of change would tend to be lower.
- Number: generally, the greater the number of the Proposed Development (Onshore)'s separate elements seen simultaneously or sequentially, the higher the magnitude of change. Further effects could also occur in the case of separate developments and their spatial relationship to each other would affect the magnitude of change. For example, development that appears as an extension to an existing development would tend to result in a lower magnitude of change than a separate, new development.

- Nature of visibility: the nature of visibility is a further factor for consideration. The Proposed Development (Onshore) may be subject to various phases of development change and the manner in which the Proposed Development (Onshore) may be viewed could be intermittent or continuous and/or vary seasonally, due to periodic management or leaf fall.

Visual magnitude of change rating

1.2.5.13 The 'magnitude' or 'degree of change' resulting from the Proposed Development (Onshore) is described as 'high', 'high-medium', 'medium', 'medium-low' 'low' and 'negligible'. In assessing the magnitude of change the assessment focuses on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects (i.e., as short/medium/long-term and temporary/permanent). The basis for the assessment of magnitude for each receptor is made clear using evidence and professional judgement.

Evaluating visual effects and significance

1.2.5.14 The level of visual effect is evaluated through the combination of visual sensitivity and magnitude of change. Once the level of effect has been assessed, a judgement is then made (using professional judgement) as to whether the level of effect is 'significant' or 'not significant'. This process is assisted by the matrix in Table 1-1 which is used to guide the assessment. Geographical extent and duration and reversibility are considered as part of drawing conclusions about significance, combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant. Further information is also provided about the nature of the effects (whether these would be direct/indirect; temporary/permanent/reversible; beneficial/neutral/adverse or cumulative).

1.2.5.15 A significant effect is more likely to occur where the Proposed Development (Onshore) would have a defining effect on the view or visual amenity or where changes affect a visual receptor that is of high sensitivity.

1.2.5.16 A non-significant effect is more likely to occur where the Proposed Development (Onshore) would have a non-defining effect on the view or visual amenity or where changes affect a visual receptor that is of low sensitivity.

1.2.6 Evaluation of Significance

1.2.6.1 The matrix in Table 1-1 is used as a guide to help inform the threshold of significance when combining sensitivity and magnitude to assess significance. On this basis likely significant effects are assessed as negligible, minor, moderate-minor, moderate, moderate-major and major. In those instances where the magnitude has been assessed as 'no change', the level of effect is recorded as 'no effect'.

1.2.6.2 For the purposes of this assessment, any effects with a significance level of major and moderate-major have been assessed as significant (dark shaded boxed in Table 1-1). Moderate levels of effect have the potential, subject to the assessor's professional judgement, to be considered as significant or not significant, depending on the sensitivity and magnitude of change factors evaluated. These assessments are explained as part of the assessment, where they occur. Significance can therefore occur at a range of levels depending on the magnitude and sensitivity, however in all cases, a significant effect is considered more likely to occur where the Proposed Development (Onshore) would have a defining effect on the landscape character or view. Definitions are not provided for the individual categories of significance shown in the matrix and the reader should refer to the detailed definitions provided for the factors that combine to inform sensitivity and magnitude.

1.2.6.3 Effects assessed as being either moderate-minor, minor or negligible level are assessed as not-significant (white shaded boxes in Table 1-1:).

1.2.6.4 In line with the emphasis placed in GLVIA3(Landscape Institute and IEMA, 2013[1]) upon the application of professional judgement, an overly mechanistic reliance upon a matrix is avoided through the provision of clear and accessible narrative explanations of the rationale underlying the assessment made for each landscape and visual receptor.

Table 1-1: Matrix used to guide determination of effect significance

Sensitivity	Magnitude					
	High	**Medium-high**	**Medium**	**Medium-low**	**Low**	**Negligible/ No change**
High	Major (Significant)	Major (Significant)	Major - moderate (Significant)	Moderate (either significant or not significant)	Moderate - minor (Not significant)	Minor (Not significant)
Medium-high	Major (Significant)	Major-moderate (Significant)	Moderate (either significant or not significant)	Moderate (either significant or not significant)	Moderate - minor (Not significant)	Minor (Not significant)
Medium	Major - moderate (Significant)	Moderate (either significant or not significant)	Moderate (either significant or not significant)	Moderate - minor (Not significant)	Minor (Not significant)	Minor (Not significant)
Medium-low	Moderate (either significant or not significant)	Moderate (either significant or not significant)	Moderate - minor (Not significant)	Minor (Not significant)	Minor (Not significant)	Negligible (Not significant)

Sensitivity	Magnitude					
	High	**Medium-high**	**Medium**	**Medium-low**	**Low**	**Negligible/ No change**
Low	Moderate (either significant or not significant)	Moderate - minor (Not significant)	Minor (Not significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)

Nature of effects

1.2.6.5 Guidance provided in GLVIA3 (Landscape Institute and IEMA, 2013[1]) on the nature of effect states that "in the LVIA, thought must be given to whether the likely significant landscape and visual effects are judged to be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity", but it does not provide guidance as to how that may be established in practice. The nature of effect is therefore one that requires interpretation and, where applied, this involves reasoned professional opinion.

1.2.6.6 Beneficial or neutral effects may arise in certain situations and are stated in the assessment where relevant, based on the following definitions.

- Beneficial effects - contribute to the landscape and visual resource through the enhancement of desirable characteristics or the introduction of new, beneficial attributes. The Proposed Development (Onshore) contributes to the landscape by virtue of good design or the introduction of new landscape planting. The removal of undesirable existing elements or characteristics can also be beneficial, as can their replacement with more appropriate components;
- Neutral effects - occur where the Proposed Development (Onshore) fits with the existing landscape character or visual amenity. The Proposed Development (Onshore) neither contributes to nor detracts from the landscape and visual resource and can be accommodated with neither beneficial or adverse effects, nor where the effects are so limited that the change is hardly noticeable. A change to the landscape and visual resource is not considered to be adverse simply because it constitutes an alteration to the existing situation; and
- Adverse effects - are those that detract from the landscape character or quality of visual attributes experienced, through the introduction of elements that contrast, in a detrimental way, with the existing characteristics of the landscape and visual resource, or through the removal of elements that are key in its characterisation.

Extent and Duration of Effects

1.2.6.7 The geographic extent over which the landscape and visual effects are experienced is also assessed, which is distinct from the size or scale of effect. This evaluation is not combined in the assessment of the level of magnitude, but instead expresses the extent of the receptor that will experience a particular magnitude of change and therefore the geographical extents of the significant and non-significant effects and is described in terms of the physical area or location over which it is experienced (described as a linear or area measurement).

1.2.6.8 The extent of the effects will vary depending on the specific nature of the Proposed Development (Onshore) and is principally assessed through analysis of the extent of perceived changes to the landscape character through visibility of the Proposed Development (Onshore).

1.2.6.9 The duration and reversibility of landscape and visual effects are based on the period over which the Proposed Development (Onshore) is likely to exist (during construction, operation and decommissioning).

1.2.6.10 Long-term, medium-term and short-term landscape effects are defined as follows:

- long-term - more than 10 years (or defined as permanent/irreversible);
- medium-term - 5 to 10 years; and
- short-term - 0 to 5 years.

1.3 Cumulative, Landscape and Visual Effects

1.3.1.1 NatureScot's guidance, 'Assessing the Cumulative Impact of Onshore Wind Energy Developments' (NatureScot, 2021[6]) is widely used across the UK to inform the specific assessment of the cumulative landscape and visual effects of different types of development. Whilst the focus of the NatureScot guidance relates to wind farm development, both GLVIA3 (Landscape Institute and IEMA, 2013[1]) and NatureScot's guidance provides the basis for the methodology for the cumulative LVIA and is relevant to the LVIA.

1.3.1.2 NatureScot's guidance states that:

"The purpose of a Cumulative Landscape and Visual Impact Assessment (CLVIA) is to describe, visually represent and assess the ways in which a proposed wind farm would have additional impacts when considered with other consented or proposed wind farms. It should identify the significant cumulative impacts arising from the proposed wind farm."

1.3.1.3 In terms of the assessment, NatureScot's guidance (NatureScot, 2021[6]) says that:

"The assessment should be proportionate to the likely impacts and all CLVIA should accord with the guidelines within GLVIA3 (Landscape Institute and IEMA, 2013[1]). The emphasis should be on the production of relevant and useful information, highlighting why the proposals assessed have been included and why others have been excluded, rather than the provision of a large volume of information."

1.3.1.4 NatureScot's guidance (NatureScot, 2021[6]) notes that "Cumulative landscape impacts can change either the physical fabric or character of the landscape, or any special values attached to it " and that "Cumulative impacts on visual amenity can be caused by 'combined visibility' and/or 'sequential impacts."

1.3.1.5 GLVIA3 (Landscape Institute and IEMA, 2013[1]) (p120) highlights that "the focus of the cumulative assessment will be on the additional effect of the project in conjunction with other developments of the same type (as for example, in the case of wind farms)".

1.3.2 Approach to Cumulative Effects

1.3.2.1 The Cumulative Impact Assessment (CIA) considers the impact associated with the Proposed Development (Onshore) together with other relevant plans, projects and activities. Cumulative effects are therefore the combined effect of the Proposed Development (Onshore) and the effects of a number of different projects, on the same receptor or resource.

1.3.2.2 GLVIA3 (Landscape Institute and IEMA, 2013[1]) (paragraph 7.2) defines cumulative landscape and visual effects as those that "result from additional changes to the landscape and visual amenity caused by the proposed development in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future."

1.3.2.3 The projects and plans selected as relevant to the CIA presented within this chapter are based upon the results of a screening exercise (see Volume 7A, Appendix 7-1: Cumulative Impact Assessment Methodology). Each project or plan has been considered on a case-by-case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

1.3.2.4 Other proposed developments that have the potential for cumulative effects in combination with the Proposed Development (Onshore) are typically considered to be those developments that are found within the LVIA study area. Beyond the LVIA study area cumulative effects are limited by distance and a lack of intervisibility with other proposed developments.

1.3.2.5 Adjacent developments may complement one another, or may be discordant with one another, and it is the increased or reduced level of significance of effects which arises as a result of this change that is assessed. Where this occurs, the magnitude of change varies according to cumulative effect factors such as its consistency of image and degree of contrast or integration with the onshore elements of the Proposed Development (Onshore), as well as other 'non-cumulative' factors, such as its distance, lateral spread and amount of visibility.

1.3.2.6 In line with NatureScot guidance (NatureScot, 2021[7]) and GLVIA3 (Landscape Institute and IEMA, 2013[1]), cumulative effects are assessed as the additional changes caused by the Proposed Development (Onshore) in conjunction with other similar developments (not the totality of the cumulative effect). The CIA assesses the cumulative effect of the Proposed Development (Onshore) with other projects against the future baseline, with the assessment apportioning the amount of the effect that is attributable to the Proposed Development (Onshore). Adjacent developments may complement one another, or may be discordant with one another, and it is the increased or reduced level of significance of effects which arises because of this change that is assessed in the CIA, such as through design discordance or proliferation of multiple developments affecting characteristics or new geographic areas, and ultimately if character changes occur because of multiple developments becoming a prevailing characteristic of the landscape or view.

1.3.3 Tiered Approach to CIA

1.3.3.1 In accordance with NatureScot guidance (NatureScot, 2021[8]) and GLVIA3 (Landscape Institute and IEMA, 2013[1])(paragraph 7.13), existing projects are included in the LVIA baseline and described as part of the baseline conditions, including the extent to which these have altered character and views, and affected sensitivity to wind farm development. These developments have an existing influence on the baseline landscape and visual environment.

1.3.3.2 The LVIA future construction baseline includes projects or developments that are assumed to be fully built and in use by the time construction of the Proposed Development starts (Q3 2027) and the future operation baseline includes projects or developments fully built and in use by the time operation of the Proposed Development starts (Q4 2033). The CIA considers those projects or developments whose construction and/or commencement of operation would be concurrent with that of the Proposed Development (Onshore).

1.3.3.3 An assessment of the Proposed Development (Onshore)'s additional cumulative landscape and visual effects with other potential future projects is undertaken in the CIA. In undertaking the CIA for the Proposed Development (Onshore), it is important to bear in mind that other projects and plans under consideration will have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative impact alongside the

Proposed Development (Onshore). Therefore, a tiered approach has been adopted. This provides a framework for placing relative weight upon the potential for each project/plan to be included in the CIA to ultimately be realised, based upon the project/plan's current stage of maturity and certainty in the projects' parameters. The tiered approach which will be utilised within the Proposed Development (Onshore) CIA employs the following tiers:

- Tier 1 – Projects that are under construction or that have a Permitted or Submitted application(s), but that are not yet implemented;
- Tier 2 - Projects where a scoping report has been submitted and there is sufficient detail within the scoping report to support CIA; and
- Tier 3 - Projects where a scoping report has not been submitted or scoping report is not sufficiently detailed to support CIA; Projects identified in the relevant Development Plan (and emerging Development Plans – with appropriate weight being given as they move closer to adoption) recognising that there will be limited information available on the relevant proposals; or Projects identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

1.3.3.4 A comprehensive list of projects that have the potential to contribute to the cumulative effects of the Proposed Development (Onshore) has been compiled and the approach to compiling this list and the identified long list is provided in Volume 7A, Appendix 7-1: Cumulative Impact Assessment Methodology. In order to focus the cumulative assessment on the potential for significant cumulative effects, a process of screening out projects and activities from this list where it is assessed there would be no potential for a significant cumulative effect as a result of the addition of the Proposed Development (Onshore) has been undertaken resulting in a shortlist of projects to be taken into the CIA.

3.2 Cumulative Sensitivity of Landscape and Visual Receptors

1.3.3.5 In evaluating cumulative sensitivity, the value component of the assessments of sensitivity would not change, however, in an evolving development context, the susceptibility of a landscape and visual receptor to the introduction of the Proposed Development (Onshore) may increase or decrease. This is based on the criteria contained in the landscape and visual susceptibility criteria sections of this methodology.

3.3 Cumulative Magnitude of Change

1.3.3.6 The cumulative magnitude of change is an expression of the degree to which landscape character receptors and visual receptors/views would be changed by the addition of the Proposed Development (Onshore) to other relevant developments that are consented or at application stage or scoping stage, and whose construction phase or commencement of operation would be concurrent with the Proposed Development (Onshore). The cumulative magnitude of change is assessed according to a number of criteria, described in the sections below.

1.3.3.7 The location of the Proposed Development (Onshore) in relation to other relevant developments. If the Proposed Development (Onshore) is seen in a part of the view or setting to a landscape receptor that is not affected by other development, this would generally increase the cumulative magnitude of change as it would extend influence into an area that is currently unaffected by development. Conversely, if the Proposed Development (Onshore) is seen in the context of other sites, the cumulative magnitude of change may be lower as development is not being extended to otherwise undeveloped parts of the outlook or setting. This is particularly true where the scale and layout of the Proposed Development (Onshore) is similar to that of the other sites as where there is a high level of integration and cohesion with an existing site the various developments may appear as a single site.

- The extent of the developed skyline. If the Proposed Development (Onshore) would add notably to the developed skyline in a view, the cumulative magnitude of change would tend to be higher as skyline development can have a particular influence on both views and landscape receptors;
- The number and scale of developments seen simultaneously or sequentially. Generally, the greater the number of clearly separate developments that are visible, the higher the cumulative magnitude of change would be. The addition of the Proposed Development (Onshore) to a view or landscape where a number of smaller developments are apparent would usually have a higher cumulative magnitude of change than one or two large developments as this can lead to the impression of a less coordinated or strategic approach;
- The scale comparison between developments. If the Proposed Development (Onshore) is of a similar scale to other visible developments, particularly those seen in closest proximity to it, the cumulative magnitude of change would generally be lower as it would have more integration with the other sites and would be less apparent as an addition to the cumulative situation;
- The consistency of image of the Proposed Development (Onshore) in relation to other developments. The cumulative magnitude of change of the Proposed Development (Onshore) is likely to be lower if its turbine height, arrangement and layout design are broadly similar to other developments in the landscape, as they are more likely to appear as relatively simple and logical components of the landscape;
- The context in which the developments are seen. If developments are seen in a similar landscape context, the cumulative magnitude of change is likely to be lower due to visual integration and cohesion between the sites. If developments are seen in a variety of different landscape settings, this can lead to a perception that wind farm development is unplanned and uncoordinated, affecting a wide range of landscape characters and blurring the distinction between them; and

- The magnitude of change of the Proposed Development (Onshore) as assessed in the main assessment. The lower this is assessed to be, the lower the cumulative magnitude of change is likely to be. Where the Proposed Development (Onshore) itself is assessed to have a negligible magnitude of change on a view or receptor there would not be a cumulative effect as the contribution of the Proposed Development (Onshore) would equate to the 'no change' situation.

1.3.4 Evaluating cumulative effects and significance

1.3.4.1 The level of visual effect is evaluated through the combination of receptor sensitivity and cumulative magnitude of change. Once the level of effect has been assessed, a judgement is then made (using professional judgement) as to whether the level of effect is 'significant' or 'not significant'. This process is assisted by the matrix in Table 1-1 which is used to guide the assessment. Further information is also provided about the nature of the effects (whether these would be direct/indirect; temporary/permanent/reversible; beneficial/neutral/adverse).

1.3.4.2 Significant cumulative effects are considered likely to occur where the addition of the Proposed Development (Onshore) to the baseline under consideration (which may include other developments), leads to these developments becoming a prevailing landscape and visual characteristic or where the Proposed Development (Onshore) adversely contrasts with the scale or design of an existing or proposed cumulative development. A non-significant cumulative effect is more likely to occur where the Proposed Development (Onshore) would have a non-defining effect on the receptor or where changes affect a receptor that is of low sensitivity.

1.4 Graphic Production

1.4.1 ZTV Analysis

1.4.1.1 The ZTV (shown within Volume 7E, Appendix 4-2: Landscape and Visual Figures, Figure 4-7) have been generated using Geographic Information Systems (GIS) software to demonstrate the extent to which the Onshore Substations may theoretically be seen from any point in the LVIA study area.

1.4.1.2 The ZTV have been calculated to illustrate the maximum levels of theoretical visibility for the Onshore Substations, based on the Onshore Substations' Worst Case Design Envelope as stated in Table 1-2.

Table 1-2: Onshore Substations Worst Case Design Envelope

Assessment Parameter	Value
Maximum width of Onshore Substations platform area (metre (m))	250
Maximum length of Onshore Substations platform area (m)	400
Finished Floor Level (FFL) (m AOD)	108.075
Maximum building height within the Onshore Substations platform area above FFL (m), not including lightning masts.	15

1.4.1.3 A ZTV has been prepared in line with GLVIA3 (Landscape Institute and IEMA, 2013[1]). ZTVs are primarily calculated based on the visibility at 2m above the height of the landform (i.e., viewer height of 2m), relative to the height of the Onshore Substations Worst Case Design Envelope. The ZTV shown in Volume 7E, Appendix 4-2: Landscape and Visual Figures, Figure 4-7 reflects bare ground theoretical visibility. There are limitations in the production of the ZTV that should be borne in mind in its consideration and use, and these are:

- The ZTVs are based on 5m data grid (OS Terrain 5) with a viewer height of 2m above ground level;
- The bare ground ZTV does not consider the screening effects of woodland, vegetation, buildings, or other local features that may prevent or reduce visibility;
- The ZTV does not indicate the decrease in visibility that occurs with increased distance from the Onshore Substations. The nature of what is visible from one kilometre (km) away would differ markedly from what is visible from 3km away, although both are indicated on the ZTV as having the same level of visibility; and
- There is a wide range of variation within the visibility shown on the ZTV. For example, an area shown as having visibility of the Onshore Substations may only gain views of the slightest extremity rather than all of it as may be the case elsewhere.

1.4.1.4 These limitations mean that while the ZTV is used as a starting point in the assessment, providing an indication of where the Onshore Substations would theoretically be visible, the information drawn from the ZTV is not the sole factor relied upon to accurately represent visibility of the Onshore Substations.

1.4.2 Visualisations

1.4.2.1 The viewpoint assessment of the Onshore Substations is illustrated by a range of visualisations, including photographs and photomontages, which are in line with current best practice and guidance provided in 'Visual Representation of Development Proposals' (Landscape Institute, 2019[2]). The photomontages illustrate the extent of the Worst Case Design Envelope for the Onshore Substations to provide an indication of the maximum area where components of the Onshore Substations may be developed along with their maximum height. A preliminary model of the Onshore Substations has also been included in the views to provide an example illustration of the density, scale, number and form of the components of the Onshore Substations that may be located within the Worst Case Design Envelope. Visualisations have a number of limitations when used to form a judgement on a development, that are presented below.

- The images provided give a reasonable impression of the scale and distance to the Onshore Substations, but can never be 100% accurate;
- The viewpoints illustrated are representative of views in the area but cannot represent visibility at all locations;
- To form the best impression of the visual impacts of the Onshore Substations these images are best viewed at the viewpoint location shown;
- The visualisations must be printed at the correct size to be viewed properly (A1 width) and viewed at a comfortable arm's length viewing distance;
- The first visualisation sheets for each of the viewpoints show the existing baseline view and a photomontage illustrating the Onshore Substations Worst Case Design Envelope, using the dimensions 250m x 400m with a maximum height of 15m from a 108.075m AOD FFL, as a dashed black line, and presented cylindrically in a 90-degree field of view; and
- Subsequent visualisation sheets for each viewpoint present the existing baseline view and a photomontage of the Onshore Substations Worst Case Design Envelope, using the above dimensions, presented as a planar projection with a 53.5-degree field of view.

1.4.2.2 The photographs used to produce the photomontages have been taken using Canon EOS 5D and 6D Digital Single Lens Reflex (SLR) cameras, with a fixed lens and a full-frame (35mm negative size) complementary metal oxide semiconductor (CMOS) sensor. The photographs are taken on a tripod with a panoramic head at a height of approximately 1.5m above ground. To create the baseline panorama, the frames are individually cylindrically projected, digitally joined and then modified to create a planar projected panorama with a 53.5-degree field of view. Tonal alterations are made using Adobe software to create an even range of tones across the photographs once joined.

1.4.2.3 The photographs and photomontages used in this assessment are for illustrative purposes only and, whilst useful tools in the assessment, are not considered to be completely representative of what will be apparent to the human eye. The assessments are carried out from observations in the field and therefore may include elements that are not visible in the photographs.

1.5 References

[1] Landscape Institute and Institute of Environmental Management and Assessment (2013) 'Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3)'. Routledge.

[2] Landscape Institute (2019) 'Visual Representation of Development Proposals, Technical Guidance Note 06 / 19'. Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf (Accessed 01/10/2024).

[3] NatureScot (2021) 'Assessing the Cumulative Impact of Onshore Wind Energy Developments'. Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments (Accessed 01/10/2024).

[4] Scottish Government (2022) Guidance for applicants on using the design envelope for applications under Section 36 of the Electricity Act 1989

[5] Landscape Institute (2021) 'Assessing landscape value outside national designations, Technical Guidance Note 02/21'. Available at: https://www.landscapeinstitute.org/publication/tgn-02-21-assessing-landscape-value-outside-national-designations/ (Accessed 01/10/2024).

[6] NatureScot (2021) 'Assessing the Cumulative Impact of Onshore Wind Energy Developments'. Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments (Accessed 01/10/2024).

[7] NatureScot (2021) 'Assessing the Cumulative Impact of Onshore Wind Energy Developments'. Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments (Accessed 01/10/2024).

[8] NatureScot (2021) 'Assessing the Cumulative Impact of Onshore Wind Energy Developments'. Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments (Accessed 01/10/2024).

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