Appendix 9.A Landscape and Visual Impact Assessment Methodology

Introduction

This appendix describes in detail the methodology that has been used to carry out the Landscape and Visual Impact Assessment (LVIA) for the Proposed Development. It has been prepared by chartered landscape architects at Optimised Environments Ltd (OPEN). The LVIA identifies and assesses the effects that the Proposed Development will have on the landscape as an environmental resource and on views and visual amenity. This appendix is structured as follows:

- types of effect;
- significance of effects;
- assessment of landscape effects;
- assessment of visual effects;
- assessment of cumulative landscape and visual effects;
- nature of effects;
- duration and reversibility of effects; and
- visual representation.

The following sources have been used in the formulation of methodology for the assessment and the presentation of visual representations:

- The Landscape Institute with the Institute of Environmental Management and Assessment (2012). 'Guidelines for Landscape and Visual Impact Assessment, Third Edition' (GLVIA3);
- The Highland Council (2016). 'Visualisation Standards for Wind Energy Developments.'
- Scottish Natural Heritage (2017). 'Visual Representation of Wind Farms, Version 2.2';
- Scottish Natural Heritage (March 2012). 'Assessing the Cumulative Impact of Onshore Wind Energy Developments';
- Scottish Natural Heritage (2017). 'Siting and Designing Wind Farms in the Landscape, Version 3a';
- Scottish Natural Heritage and The Countryside Agency (2002). 'Landscape Character Assessment Guidance for England and Scotland'; and
- Landscape Institute (2019). Landscape Institute Technical Guidance Note 06/19 Visual Representation of development proposals.

Whilst OPEN's methodology broadly conforms to the guidelines set out in GLVIA3, the methodology diverges in respect of the following criteria, which are described below, along with the reasons that have prompted the changes.

GLVIA 3 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. This approach is to be applied in respect of both landscape and visual receptors with reference made in paragraphs 5.48, 5.50-5.52, 6.38 and 6.40-6.41 of GLVIA3.

OPEN considers that the process of combining all three considerations in one rating can distort the aim of identifying significant effects of wind farm development. For example, an increased magnitude of change, based on size or scale, may be reduced to a lower rating if it occurred in a localised area and for a short duration. This might mean that a potentially significant effect will be overlooked if effects are diluted down due to their geographical extents and/or duration or reversibility.

OPEN has chosen to keep these three considerations separate, 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.

Study Area

The LVIA Study Area is defined as a 40 km radius area from the outer edge of the Proposed Development, to include all those areas within which potentially significant visual effects of the Proposed Development may occur. This is shown in **Figure 9.1**. The 40 km radius extent of the Study Area is informed by initial Zone of Theoretical Visibility (ZTV) maps of the Proposed Development and the height of the proposed turbines, and accords with good practice (SNH, 2017). Blade Tip and Hub Height ZTVs are shown in **Figures 9.5a, 9.5b, 9.6a and 9.6b**, respectively.

Types of Effect

The LVIA is intended to determine the effects that the Proposed Development will have on the landscape and visual resource.

For the purpose of assessment, the potential effects on the landscape and visual resource are grouped into three categories: landscape effects, visual effects and cumulative landscape and visual effects, each of which is briefly described below.

Landscape effects

The LVIA considers the effects of the Proposed Development on the landscape as a resource. Landscape effects are either direct effects on the physical fabric of the site, or effects on landscape character. The assessment of landscape effects is carried out as follows:

- Assessment of physical effects: physical effects are direct effects on the physical fabric of the site, such as the removal of trees and alteration to ground cover. This category of effects is made up of landscape elements, which are the components of the landscape such as forestry or heather moorland that may be physically affected by the Proposed Development.
- Assessment of 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 introduction of new elements that alter this pattern of elements, or through visibility of the Proposed Development, which

may alter the way in which the pattern of elements is perceived. This category of effects is considered in terms of landscape character receptors, which fall into three groups; landscape character types, landscape designations and Wild Land Areas.

Visual effects

The LVIA considers the effect of the Proposed Development on views and visual amenity. Visual effects include effects on visual receptors, i.e. groups of people that may experience an effect, and views (viewpoints). The visual assessment is carried out as follows:

- An assessment of the effects of the Proposed Development on views from principal visual receptors, including residents of settlements, motorists using roads, people using recreational routes, people visiting features and attractions throughout the study area (as ascertained through the baseline study).
- An assessment of the effects of the Proposed Development on representative viewpoints that have been selected to assess the effect on locations relevant to these visual receptors and from specific viewpoints, chosen because they are key or promoted viewpoints in the landscape.

Cumulative landscape and visual effects

Cumulative effects arise where the study areas for two or more wind farms (or in some cases other relevant development) overlap so that both of the wind farms/developments are experienced at a proximity where they may have a greater incremental effect, or where wind farms/other developments may combine to have a sequential effect. In accordance with guidance (SNH, 2012), the LVIA assesses the effect arising from the addition of the Proposed Development to the cumulative situation. In some situations, intra-development cumulative effects may arise between the various elements of the wind farm development, including infrastructure and turbine groups.

Significance of Effects

The broad objective in assessing the effects of the proposed development is to determine, as required by The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations), any predicted significant effects on landscape character or visual amenity. In the LVIA, effects are assessed to be either significant or not significant and intermediate levels of significance are not defined.

The significance of effects is assessed through a combination of two considerations; the sensitivity of the landscape receptor or view and the magnitude of change that will result from the addition of the Proposed Development. While this methodology is not reliant on the use of a matrix to arrive at the conclusion of a significant or not significant effect, a matrix is included below to illustrate how combinations of sensitivity and magnitude of change ratings can give rise to significant effects. The matrix also gives an indication of the threshold at which significant effects may arise.

Table 9.A.1: Illustrative Matrix of Significant Effects

Magnitude Sensitivity	High	Medium to high	Medium	Medium to low	Low	Negligible
High	significant	significant	significant	Significant / not significant	not significant	not significant
Medium to high	significant	significant	Significant / not significant	Significant / not significant	not significant	not significant
Medium	significant	Significant / not significant	Significant / not significant	not significant	not significant	not significant
Medium to low	Significant / not significant	Significant / not significant	not significant	not significant	not significant	not significant
Low	Significant / not significant	not significant	not significant	not significant	not significant	not significant

Effects that fall within the dark grey boxes in the matrix are considered to be significant in terms of the EIA Regulations. Effects within the light grey boxes may be significant or not significant depending on the specific relevant factors that arise at a particular landscape or visual receptor. In accordance with GLVIA3, experienced professional judgement is applied to the assessment of all effects and reasoned justification is presented in respect of the findings of each case.

A significant effect occurs where the Proposed Development will provide a defining influence on a landscape element, landscape character receptor or view. A not significant effect occurs where the effect of the Proposed Development is not material, and the baseline characteristics of the landscape element, landscape character receptor, view or visual receptor continue to provide the definitive influence. In this instance the Proposed Development may have an influence, but this influence will not be definitive. Significant cumulative landscape and visual effects arise where wind turbines (and potentially other similar or major developments) become a prevailing landscape and visual characteristic.

Assessment of Landscape Effects

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 introduction of new elements that physically alter this pattern of elements, or through visibility of the Proposed Development, which may alter the way in which the pattern of elements is perceived. This category of effects is made up of physical effects and landscape effects. The latter falls into two groups; landscape character types and designated areas.

Assessment of Physical Effects

Physical effects are the direct effects on the fabric of the site such as the removal of trees and alteration to ground cover and are restricted to the area of the site. The objective of

the assessment of physical effects is to determine which landscape elements will be affected and whether these effects will be significant or not significant. The variables considered in the sensitivity of landscape elements and the magnitude of change upon them are described below.

Sensitivity of landscape elements

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

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 hedgerows is likely to be increased if they provide 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;

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 sensitivity of this element.

The evaluation of sensitivity is described for each receptor in the assessment, and levels of sensitivity - high, medium-high, medium, medium-low or low - are applied. The sensitivity of each receptor is a product of the specific combination of value and susceptibility, including the potential for mitigation, as evaluated by professional judgement.

Magnitude of change on landscape elements

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

- High, where the Proposed Development will result in the complete removal of a landscape element or substantial alteration to a key landscape element.
- Medium, where the Proposed Development will result in the removal of a notable part of a landscape element or a notable alteration to a key landscape element.
- Low, where the Proposed Development will result in the removal of a minor part of a landscape element or a minor alteration to a key landscape element.

The change may be negligible, where the alteration to the landscape element is barely discernible, or there may be 'no change'.

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

Significance of effects on landscape elements

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, and

through the application of professional judgement to assess whether or not the Proposed Development will have an effect that is significant or not significant.

A significant effect will occur where the degree of removal or alteration of the landscape element is such that the form of the element will 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 will occur where the form of the landscape element is not redefined as a result of the Proposed Development. 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.

Assessment of 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 through the introduction of new elements that physically alter this pattern of elements, the removal of characterising elements, or through visibility of the Proposed Development, 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 designated areas.

The objective of the assessment of effects on landscape character is to determine, using professional judgement, which landscape character receptors will be affected by the Proposed Development, and whether these effects will be significant or not significant. The assessment of effects on landscape character involves the undertaking of a baseline study, evaluation of sensitivity and magnitude of change, and the resultant assessment of significance.

Baseline Study

The baseline study of each landscape character receptor collates and presents information drawn from a combination of desk study and fieldwork that is relevant to the assessment. The baseline study covers the following matters:

- the description of the landscape character receptor drawn from the relevant documentation such as the Landscape Character Assessment or citations in respect of landscape designations;
- a description of the landscape character receptor based on field work to determine how typical or not the landscape character receptor is in relation to documented descriptions;
- those features and patterns of the landform, land-cover and land-use which make the landscape character receptor distinctive;
- the visual and sensory experience of the landscape and how it associates with other landscapes including in particular the landscape character receptor where the Proposed Development is located; and
- how change in this landscape character receptor, either through natural or human processes, is presently affecting character and how they are predicted to affect character in the future.

Only those landscape receptors that have the potential to undergo significant effects and significant cumulative effects have been included in the detailed assessment in Chapter 9. The selection of relevant landscape receptors has been made through the scoping process

and with reference to the outcomes of the assessment in the LVIA for the Operational Scheme.

Sensitivity of landscape character receptors

The sensitivity of a landscape character receptor is an expression of its ability to accommodate the Proposed Development as part of its own character or as part of the visual setting or context to the character receptor. This is dependent on the value of the landscape receptor and its susceptibility to change.

Value of landscape receptors

The value of a landscape character receptor is a reflection of the value that is attached to that landscape. The landscape value is classified as high, medium-high, medium, medium-low or low, and the basis for this evaluation is determined through the application of professional judgement to the following factors:

- Landscape designations: a receptor that lies within a recognised landscape-related planning designation will generally have an increased value, depending on the proportion of the receptor that is covered and the level of importance of the designation (international, national, regional or local) and the reasons for its designation. It is important to note that the absence of designations does not preclude local resource value, as an undesignated landscape character receptor may be important as a resource in the local or immediate environment, particularly when experienced in comparison with other nearby landscapes.
- 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 these attributes have remained intact. A landscape with consistent, intact and well-defined, distinctive attributes is generally considered to be of higher quality and, in turn, higher value, than a landscape where the introduction of inappropriate elements has detracted from its inherent attributes.
- Landscape experience: the experience of the landscape character 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 for outdoor pursuits, and the contribution of other values relating to the nature conservation or archaeology of the area.

Susceptibility to change

The susceptibility of a landscape character receptor to change is a reflection of its ability to accommodate the changes that will occur as a result of the addition of the Proposed Development. The assessment of the susceptibility of the landscape receptor to change is classified as high, medium-high, medium, medium-low or low, as determined through the application of professional judgement to the following factors:

- The specific nature of the Proposed Development: the susceptibility of landscape receptors is specific to the change arising from the particular development that is proposed, including its individual components and features, and its size, scale, location, context and characteristics.

- Landscape character**:** the key characteristics of the existing landscape character of the receptor are considered in the evaluation of susceptibility as they determine the degree to which the receptor may accommodate the influence of the Proposed Development. For example, a landscape that is of a particularly wild and remote character may have a high susceptibility to the influence of the Proposed Development due to the contrast that it would have with the landscape, whereas a developed, industrial landscape where built elements and structures are already part of the landscape character may have a lower susceptibility. However, there are instances when the quality of a landscape may have been degraded to an extent whereby it is considered to be in a fragile state and therefore a degraded landscape may have a higher susceptibility to the Proposed Development.
- Landscape association: the extent to which the Proposed Development will influence the character of the landscape receptors across the study area also relates to the associations that exist between the landscape within which the Proposed Development is located and the landscape receptor from which the Proposed Development is being experienced. This association will be most important where the landscapes are directly related; for example, if the Proposed Development is located in an upland landscape that has a strong enclosing influence on an adjacent valley landscape. Elsewhere, the association may be less important; for example, where the Proposed Development lies inland of a coastal landscape that has its main focus outwards over the sea.

Levels of sensitivity

The sensitivity of the landscape receptor is evaluated as high, medium-high, medium, medium-low or low through a combination of the value and susceptibility to change. The basis for the assessments is made clear using evidence and professional judgement in the evaluation of sensitivity for each receptor.

Magnitude of change on landscape character receptors

The magnitude of change that the Proposed Development will have on landscape receptors is assessed in terms of the size or scale of the change. An assessment is also made of the geographical extent of the area over which this will occur and the duration and reversibility of such changes. The basis for this assessment is made clear using evidence and professional judgement, based on the following:

Size or scale

This criterion relates to the size or scale of change to the landscape that will arise as a result of the Proposed Development, based on the following factors:

- The degree to which the pattern of elements that makes up the landscape character will be altered by the Proposed Development, through removal or addition of elements in the landscape. The magnitude of change will generally be higher if key features that make up the landscape character are extensively removed or altered, and if many new/large scale components are added to the landscape.
- The extent to which the Proposed Development will change - physically or perceptually - the characteristics that may be important in the creation of the distinctive character of the landscape as identified in the baseline study. This

may include 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 with these key characteristics.

- The distance between the landscape character receptor and the Proposed Development. Generally, the greater the distance, the lower the scale of change as the Proposed Development will constitute a less apparent influence on the landscape character.
- The extent of the Proposed Development that will be seen from the landscape receptor. Visibility of the Proposed Development may range from one turbine blade tip to all of the turbines, and generally the greater the extent of the Proposed Development that can be seen, the greater the change.

Geographical extent

The geographic extent over which the landscape effects will be 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 determines the extent of the receptor which will experience a particular magnitude of change and can therefore affect the geographical extents of the significant and non-significant effects.

The extent of the effects will vary depending on the specific nature of the Proposed Development and is principally assessed through analysis of the extent of physical change to the landscape or the extent to which the landscape character will change through visibility of the Proposed Development.

The geographic area over which the landscape effects will be experienced is also evaluated. The extent of the effect will vary depending on the specific nature of the Proposed Development and is principally a reflection of the extent of the landscape receptor that will be affected by visibility of the Proposed Development.

Duration and reversibility

The duration and reversibility of landscape effects are based on the period over which the Proposed Development is likely to exist and the extent to which the Proposed Development will be removed, and its effects reversed at the end of that period. Duration and reversibility are not incorporated into the overall magnitude of change and are stated separately in relation to the assessed effects. Duration and reversibility are discussed at the end of this Appendix.

Levels of magnitude of change

The basis for the assessment of magnitude for each receptor is made clear using evidence and professional judgement.

The levels of magnitude of change that can occur are defined as follows:

- high, where the Proposed Development will result in a major alteration to the baseline character of the landscape, providing a prevailing influence and/or introducing elements that are substantially uncharacteristic in the receiving landscape;

- medium, where the Proposed Development will result in a moderate alteration to the baseline character of the landscape, providing a readily apparent influence and/or introducing elements that may be prominent but are not notably uncharacteristic in the receiving landscape; and
- low, where the Proposed Development will result in a minor alteration to the baseline character of the landscape, providing a slightly apparent influence and/or introducing elements that are characteristic in the receiving landscape.

The change may be negligible, where the alteration to landscape character is barely discernible, or there may be 'no change'.

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

Significance of effects on landscape character receptors

The significance of the effect on each landscape character receptor is dependent on the factors that are considered in the sensitivity of the receptor and the magnitude of change resulting from the Proposed Development. These factors are combined using professional judgement to arrive at an overall assessment as to whether the Proposed Development will have a significant or not significant effect on the landscape character receptor. The matrix shown in Table 9.A.1 is also used to inform the threshold of significance when combining sensitivity and magnitude of change.

A significant effect will occur where the combination of the variables results in the Proposed Development having a defining effect on the receptor. A not significant effect will occur where the effect of the Proposed Development is not definitive, and the landscape character of the receptor continues to be characterised principally by its baseline characteristics. In this instance the Proposed Development may have an influence on the landscape character of the receptor, but this influence will not be a defining one.

Assessment of Visual Effects

The assessment of visual effects evaluates how the introduction of the Proposed Development will affect views available to people and their visual amenity. The assessment of visual effects is carried out in two parts:

- an assessment of the effects that the Proposed Development will have on a series of viewpoints that have been selected to represent the views available to people from representative or specific locations within the study area; and
- an assessment of the effects that the Proposed Development will have on views that people will gain from principal visual receptors, including settlements, roads, railways and features and attractions throughout the study area.

The objective of the assessment of effects on visual receptors is to determine what the likely effects of the Proposed Development will be on the people experiencing views across the study area, and whether these effects will be significant or not significant. The methodology for the assessment of visual effects involves the undertaking of a baseline study, an evaluation of sensitivity and magnitude of change, and an assessment of significance.

Baseline Study

The baseline study establishes the visual baseline, including the area from which the Proposed Development may be visible, the different groups of people who may experience views of the Proposed Development (visual receptors), the viewpoints where they will be affected and nature of views at these points. The baseline study establishes the visual baseline in relation to the following issues:

- The area from which the Proposed Development may be visible, that is land from which it may potentially be seen, is established and mapped using an initial ZTV of the Proposed Development.
- The location, type and number of visual receptors experiencing visibility of the Proposed Development, the likely views experienced and the activity / occupation they are engaged in.
- Selection of viewpoints from within the ZTV, including representative viewpoints selected to represent the experience of different types of visual receptor and specific viewpoints selected because they are key/promoted viewpoints in the landscape.
- The location, character and type of each viewpoint with an indication of the type of visual receptor likely to be experiencing the view from each viewpoint.
- The nature of the view in terms of both the direction of view towards the Proposed Development as well as the wider available view, making reference to the principal orientation, focal features, and visible extents in terms of both horizontal degrees and distance.
- The character of the view in terms of its content and composition, its horizontal and vertical scale as well as depth and sense of perspective, important attributes such as prominent skylines and focal points and ultimately identifying the defining patterns and features which characterise the view.
- The influence of human intervention and how the addition of artefacts and modification through land use affect the baseline situation. This may include operational developments where they are a feature of the baseline landscape and visual context.

Only those viewpoints and visual receptors that have the potential to undergo significant effects and significant cumulative effects have been included in the detailed assessment in Chapter 9. The selection of relevant viewpoints and visual receptors has been made through the scoping process and with reference to the outcomes of the assessment in the LVIA for the Operational Scheme.

Sensitivity of visual receptors

The sensitivity of views and visual receptors is determined by a combination of the value of the view and the susceptibility of the viewer or visual receptor to the Proposed Development.

Value of views

The value of a view is a reflection of the recognition and the importance attached formally through identification as a viewpoint on mapping, by signposting or through planning

designation; or informally through the value which society attaches to the view. The value of a view is classified as high, medium-high, medium, medium-low or low, based on the following factors:

- Formal recognition: the value of views can be formally recognised through their identification on maps as formal viewpoints, are sign-posted and provide facilities to facilitate the enjoyment of the view such as parking, seating and interpretation boards. Specific views may be afforded protection in local planning policy, where they are 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 will be increased if it presents an important vista from a designed landscape or lies within or overlooks a designated area such as a NSA, which implies a greater value to the visible landscape.
- Informal recognition: views that are well-known at a local level 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 used by a large number of people will tend to have greater importance than one gained by very few people, although this is not always the case.
- Scenic quality: the value of the view is a reflection of the scenic qualities gained in the view. This relates to the content and composition of the landscape, whereby certain patterns and features can increase the scenic quality while others may reduce the scenic quality. The quality of the view will also be increased if the condition of the landscape is near to the optimum for its type.

Susceptibility to change

Susceptibility relates to the nature of the viewer and how susceptible they are to the potential effects of the Proposed Development. This is determined by the following criteria.

- Nature of the viewer: This is determined by the occupation or activity in which the viewer is engaged at the viewpoint. The most common groups of viewers considered in the visual assessment include residents, road-users, workers and walkers. Viewers whose attention is focused on the landscape - walkers, for example - are likely to have a higher susceptibility, as will residents of properties that gain views of the Proposed Development. Viewers travelling in cars or on trains will tend to have a lower sensitivity as their view is transient and moving. The least sensitive viewers are usually people at their place of work as they are often less sensitive to changes in the view, although this depends on the nature of their work, and the work place they occupy.
- Principal characteristics of the view: The principal visual characteristics are those features which define the view. The presence and relationship of certain elements, features or patterns in the baseline view establish the degree to which the landscape in the view may accommodate the influence of the Proposed Development. For example, a developed, industrial landscape where built elements and structures are already part of the view may have a lower susceptibility to change, whereas a view of an undeveloped landscape which has little, or no built development may have a higher susceptibility to change.

- Experience of the viewer: The experience of the visual receptor relates to the extent to which their focus is directed on the view, the duration and clarity of the view and whether it is a static or transitory view. For example, if the principal outlook from a residential property is aligned directly towards the Proposed Development, the experience of the visual receptor will be altered more notably than if the experience related to a glimpsed view seen at an oblique angle from a car travelling at high speed.

Levels of sensitivity

The sensitivity of the view or visual receptor is evaluated as high, medium-high, medium, medium-low or low by combining the value and susceptibility to change. The basis for the assessments is made clear using evidence and professional judgement in the evaluation of each receptor.

Magnitude of change on views

The magnitude of change that the Proposed Development will have on visual receptors is assessed in terms of the size or scale of the change as follows. A separate assessment is also made of the geographical extent of the area over which this will occur and the duration and reversibility of such changes. The basis for this assessment is made clear using evidence and professional judgement, based on the following criteria:

Size or scale

This criterion relates to the size or scale of change to the visual resource that will arise as a result of the Proposed Development, based on the following factors:

- 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 distance between the visual receptor and the Proposed Development. Generally, the greater the distance, the lower the magnitude of change as the Proposed Development will constitute a smaller-scale component of the view.
- The proportion of the Proposed Development that will be seen. Visibility may range from one blade tip to all of the turbines. Generally, the more of the Proposed Development that can be seen, the higher the magnitude of change.
- The field of view available and the proportion of the view that is affected by the Proposed Development. Generally, the more of a view that is affected, the higher the magnitude of change will be. If the Proposed Development extends across the whole of the open part of the outlook, the magnitude of change will generally be higher as the full view will be affected. Conversely, if the Proposed Development covers just a part of an open, expansive and wide view, the magnitude of change is likely to be reduced as the Proposed Development will not affect the whole open part of the outlook.
- The scale and character of the context within which the Proposed Development will be 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 and texture. The scale of the landform and the patterns of the landscape, the existing land use and vegetation cover, and the degree and type of development and settlement seen in the view will be relevant. For example, a large-scale

simple landform can provide a more appropriate receiving environment than a more intimate, small-scale setting where the Proposed Development may result in uncomfortable scale comparisons that attract the eye of the viewer and increase the magnitude of change.

- The position of the Proposed Development in relation to the principal orientation of the view and activity of the receptor. If the Proposed Development is seen in a specific directional vista, the magnitude of change will generally be greater than if it were seen in a glimpsed view at an oblique angle of view.
- The consistency of the appearance of the Proposed Development. If the Proposed Development appears in a similar setting and form, and from a similar angle each time it is apparent, it will appear as a single, familiar site, and this can reduce the magnitude of change. If, on the other hand, it appears from a different angle and is seen in a different form and setting, the magnitude of change is likely to be higher.

Geographical extent

The geographic extent over which the visual effects will be 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 is used in determining the extents which will experience a particular magnitude of change and therefore the extents of the significant and non-significant effects. The extent of the effects will vary depending on the specific nature of the Proposed Development and is principally assessed through analysis of the geographical extent of visibility of the Proposed Development across the visual receptor.

The extent of effects on views is based on the following factors:

- the extent of a receptor (a road, footpath or settlement, for example) from which the Proposed Development may be seen; and
- the extent to which the change would affect views, whether this is unique to a particular viewpoint or if similar visual changes occur over a wider area represented by the viewpoint.

Duration and reversibility

The duration and reversibility of effects on views are based on the period over which the Proposed Development is likely to exist and the extent to which the Proposed Development will be removed, and its effects reversed at the end of that period. Duration and reversibility are not incorporated into the overall magnitude of change and may be stated separately in relation to the assessed effects.

Levels of magnitude of change

The basis for the assessment of magnitude for each visual receptor is made clear using evidence and professional judgement.

The magnitude of change is assessed as high, medium or low according to the following definitions:

- High, where the Proposed Development will result in a major alteration to the baseline view, providing a prevailing influence and/or introducing elements that are substantially uncharacteristic in the view.

- Medium, where the Proposed Development will result in a moderate alteration to the baseline view, providing a readily apparent influence and/or introducing elements that may be prominent but are not notably uncharacteristic in the view.
- Low, where the Proposed Development will result in a minor alteration to the baseline view, providing a slightly apparent influence and/or introducing elements that are characteristic in the view.

The change may also be negligible, where the alteration to the view is barely discernible, or there may be 'no change'.

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

Significance of effects on views

The significance of the effect on each view or visual receptor is dependent on the factors that are considered in the sensitivity of the receptor and the magnitude of change upon it. These factors are combined using professional judgement to arrive at an overall assessment as to whether the Proposed Development will have a significant or, not significant, effect on the view or visual receptor. The matrix shown in Table 9.A.1 is also used to inform the threshold of significance when combining sensitivity and magnitude of change.

A significant effect will occur where the combination of the variables results in the Proposed Development having a defining effect on the view or visual receptor. A not significant effect will occur where the effect of the Proposed Development is not definitive, and the view continues to be characterised principally by its baseline characteristics. In this instance the Proposed Development may have an influence on the view, but this influence will not be a defining one.

The assessment of visual effects assumes clear weather and optimum viewing conditions. This means that effects that are assessed to be significant may be not significant under different, less clear conditions. Viewing conditions and visibility tend to vary considerably and therefore the likelihood of effects resulting from the Proposed Development will vary greatly dependent on the prevailing viewing conditions.

Assessment of Cumulative Effects

Introduction

In the 2nd edition of the GLVIA (Landscape Institute and IEMA, 2002, p85) and quoted in the 3rd edition (Landscape Institute and IEMA, 2013, p120) the guidelines defined cumulative landscape and visual effects as those that "*result from additional changes to the landscape and visual amenity caused by the 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*".

NatureScot's guidance, Assessing the Cumulative Impact of Onshore Wind Energy Developments (SNH, 2012) is widely used across the UK to inform the specific assessment of the cumulative effects of wind farms. This guidance provides the basis for the methodology for the cumulative assessment.

The guidance defines the following types of cumulative effects:

- Cumulative landscape effects are those effects that "*can impact on either the physical fabric or character of the landscape, or any special values attached to it"* (SNH, 2012, p10); and
- Cumulative visual effects are those effects that can be caused by combined visibility, which "*occurs where the observer is able to see two or more developments from one 'viewpoint' and/or sequential effects which 'occur' when the observer has to move to another viewpoint to see different developments"* (SNH, 2012, p11).

Perceived cumulative effects are those which may arise "*where two or more developments are present but one or more is never seen by the observer*" (SNH, 2012, p11).

"*The purpose of the Cumulative Landscape and Visual Impact Assessment (CLVIA) is to describe, visually represent and assess the ways in which a proposed windfarm would have additional impacts when considered in addition to other existing, under construction, consented or proposed windfarms. It should identify the significant cumulative effects arising from the proposed windfarm*" (SNH, 2012, p12).

In accordance with the aforementioned guidance the CLVIA will focus primarily on the addition of the Proposed Development to other wind farm developments. However, it may also be necessary to include other types of development proposed within the Study area, including those that may result as an indirect consequence of the Proposed Development.

A Study Area of 40 km radius for the detailed CLVIA was proposed and agreed at the pre-application stage. This shows the Proposed Development in the context of footprints of existing and under construction wind farms/other relevant development, consented and undetermined applications and proposals subject to scoping requests and any other proposals deemed relevant in the public domain, as shown in **Figure 9.12**.

In terms of the timescale of proposals for inclusion both NatureScot guidance and GLVIA3 advise in their guidance that the assessment of the cumulative impacts associated with the Proposed Development should encompass the effects of the proposal in combination with existing, under construction, consented and application stage wind farms awaiting determination. Schemes that are at the pre-planning or scoping stage are not generally considered in the assessment of cumulative effects because firm information on which to base the assessment is not available. However, there may be specific occasions where the inclusion of such schemes is considered to be necessary by the statutory consultees.

Which developments are to be included within the CLVIA will be agreed at the scoping stage with the statutory consultees and are set out in Chapter 9. As stated in guidance (SNH, 2012, p15) "*At every stage in the process the focus should be on the key cumulative effects which are likely to influence decision making, rather than an assessment of every potential cumulative effect"*.

The degree to which cumulative effects occur, or may occur, as a result of more than one wind farm being constructed or becoming operational are a result of:

- the distance between individual wind farms/relevant developments;
- the interrelationship between their Zones of Theoretical Visibility (ZTV);
- the overall character of the landscape and its sensitivity to wind farms/other relevant development;
- the siting, scale and design of the wind farms/developments themselves; and

- the way in which the landscape is experienced.

The methodology for the assessment of cumulative landscape and visual effects involves the undertaking of a baseline study of the existing and potential future wind farm development influence, an evaluation of sensitivity and magnitude of change, and an assessment of significance.

The aim of the CLVIA is to focus on and determine the likely significant cumulative landscape and visual effects. Significant cumulative landscape and visual effects are likely to arise where wind turbines/development become a prevailing landscape and visual characteristic as a result of the addition of the Proposed Development.

Baseline Study

GLVIA3 ((Landscape Institute and IEMA, 2013, p120), p122) advises in relation to the baseline "*taking* [the Proposed Development] *to mean the main proposal that is being assessed, it is considered that existing schemes and those which are under construction should be included in the baseline for both landscape and visual effects assessments (the LVIA baseline). The baseline for assessing cumulative landscape and visual effects should then include those schemes considered in the LVIA and in addition potential schemes that are not yet present in the landscape but are at various stages in the development and consenting process*".

The baseline presented in the LVIA would be altered by the introduction of further wind farms, or other relevant developments, and this is assessed in the CLVIA based on cumulative scenarios as follows:

Cumulative Scenario 1 involves the assessment of the addition of the Proposed Development to existing wind farms (identified in the LVIA baseline scenario) and other wind farms which have been consented (i.e., approved schemes which are likely to be constructed).

Cumulative Scenario 2 involves the assessment of the addition of the Proposed Development to existing, under construction and consented wind farms (as identified in the LVIA baseline and first scenario), together with valid (but as yet undetermined) wind farm applications.

A third scenario may include relevant Proposed Developments at an early planning stage as agreed with statutory consultees.

The cumulative situation changes frequently as applications are made or withdrawn, and the layouts of submitted application wind farms are changed. It is therefore necessary to decide and agree on a cut-off date when the sites and layouts to be included are fixed. This has been set at 10th September 2021 and is largely determined by the time required to produce visualisations to both NatureScot and THC standards prior to the submission date. Any changes in the cumulative situation after this date are not incorporated in the assessment.

The scale of wind farm and other development is also of relevance to the CLVIA. The greatest influence as part of the cumulative context will arise in relation to development in close proximity to the Proposed Development. The larger the scale of the development, the higher the likelihood of a significant cumulative effect.

Turbines of less than 50 kW are considered by NatureScot (SNH, 2009) to be micro-renewables. These turbines are generally less than 15 m but can be up to 25 m high. "*Applications at this scale are unlikely to require, or be included in CLVIA*" (SNH, 2012, p18). It is considered that due to their scale these turbines are unlikely to result in significant cumulative effects arising with the Proposed Development. Turbines of less than 25 m are not included in the Cumulative Wind Farm plan in Figure 9.12. Turbines of less than 50 m are considered by NatureScot to be small scale wind turbines (SNH, 2012). They are included in the Cumulative Wind Farm Plan on sites comprising more than one turbine.

A filtering process is undertaken as part of the preliminary assessment to identify which landscape and visual receptors have the potential to undergo significant cumulative effects. This is documented in Section 9.12 of Chapter 9 and highlights which receptors are to be assessed in detail in the CLVIA. Those receptors which are identified as not having the potential to undergo significant cumulative effects, are not included in the detailed assessment, but are noted with reasons given for their exclusion.

Initial studies revealed that no other non-wind farm developments would have a bearing on the CLVIA and, therefore, none have been considered further in the assessment.

Cumulative sensitivity of landscape and visual receptors

In evaluating cumulative sensitivity, the value component of the assessments of sensitivity would not change, however, in an evolving wind farm context the susceptibility of a landscape and visual receptor to the introduction of the Proposed Development may increase or decrease. This is therefore re-evaluated based on the criteria contained in the landscape and visual susceptibility criteria sections.

Cumulative magnitude of change

The cumulative magnitude of change is an expression of the degree to which landscape character receptors and visual receptors will be changed by the addition of the Proposed Development to wind farm developments that are already operational, consented or at application stage. Where required scoping stage wind farms and other early-stage developments may also be included.

Cumulative magnitude of change is assessed according to a number of criteria, described below.

- The location of the Proposed Development in relation to other wind farm developments. If the Proposed Development is seen in a part of the view or setting to a landscape receptor that is not affected by other development, this will generally increase the cumulative magnitude of change as it will extend influence into an area that is currently unaffected by development. Conversely, if the Proposed Development 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 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 will add notably to the developed skyline in a view, the cumulative magnitude of change

will 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 will be. The addition of the Proposed Development to a view or landscape where a number of smaller developments are apparent will usually have a higher cumulative magnitude of change than one or two large developments as this can lead to the impression of a less co-ordinated or strategic approach.
- The scale comparison between developments. If the Proposed Development is of a similar scale to other visible developments, particularly those seen in closest proximity to it, the cumulative magnitude of change will generally be lower as it will have more integration with the other sites and will be less apparent as an addition to the cumulative situation.
- The consistency of image of the Proposed Development in relation to other developments. The cumulative magnitude of change of the Proposed Development 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.
- The magnitude of change of the Proposed Development 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 itself is assessed to have a negligible magnitude of change on a view or receptor there will not be a cumulative effect as the contribution of the Proposed Development will equate to the 'no change' situation.

Definitions of cumulative magnitude of change are applied in order that the process of assessment is made clear. These are:

- High, where the addition of the Proposed Development to the landscape or view will result in a major incremental change to the cumulative wind farm/development situation.
- Medium, where the addition of the Proposed Development will result in a moderate incremental change to the cumulative wind farm/development situation.
- Low, where the addition of the Proposed Development will result in a minor incremental change to the cumulative situation.

The cumulative change may be negligible, where the incremental alteration to the cumulative situation is barely discernible, or there may be 'no change'.

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

Cumulative ZTVs will be produced for all existing and under construction wind farms plus consented and undetermined wind farm applications where it is assessed they may give rise to the potential for a significant cumulative effect.

Cumulative wirelines will also be prepared for all relevant viewpoints to illustrate the Proposed Development in the context of such sites.

Significance of cumulative effects

The objective of the cumulative assessment is to determine whether any effects that the Proposed Development will have on landscape receptors and visual receptors, when seen or perceived in combination with other existing and proposed wind farms, will be significant or not significant. Significant cumulative landscape and visual effects arise where wind turbines become a prevailing landscape and visual characteristic of a receptor that is sensitive to such change. Cumulative effects may evolve as follows:

- A small scale, single wind farm will often be perceived as a new or 'one-off' landscape feature or landmark within the landscape. Except at a local site level, it usually cannot change the overall existing landscape character, or become a new characteristic element of a landscape.
- With the addition of further wind farm development, wind farms can become a characteristic element of the landscape, as they appear as landscape elements or components that are repeated. Providing there was sufficient 'space' or undeveloped landscape/skyline between each wind farm, or the overlapping of several wind farms was not too dense; the proposed wind farms or other similar/large scale developments would appear as a series of developments within the landscape and would not necessarily become the dominant or defining characteristic of the landscape nor have significant cumulative effects.
- The next stage would be to consider larger commercial wind farms/developments and/or an increase in the number of wind farms/developments within an area that either overlap or coalesce and/or 'join-up' along the skyline. The effect is to create a landscape where the wind farm element is a prevailing characteristic of the landscape. The result would be to materially change the existing landscape character of a landscape type, or the landscape in a view and resulting in a significant cumulative effect. A landscape characterised by wind farm development may already exist as part of the baseline landscape context.

Less extensive, but nevertheless significant cumulative landscape and visual effects may also arise as a result of the addition of the Proposed Development where it results in a landscape or view becoming defined by the presence of more than one wind farm or similar/large scale development, so that other patterns and components are no longer definitive, or where the Proposed Development contrasts with the scale or design of an existing or proposed wind farm. Higher levels of significance may arise from cumulative landscape and visual effects related to the Proposed Development being in close proximity to other wind farms when they are clearly visible together in views, however provided that the Proposed Development is designed to achieve a high level of visual integration, with few notable visual differences between wind farms, these effects may not necessarily be significant. The capacity of the landscape or view may be assessed as being exceeded where the landscape or visual receptor becomes defined by wind farm development, or if

the Proposed Development extends across landscape character types or clear visual/topographic thresholds in a view. More substantial cumulative effects may result from wind farms that have some geographical separation, but remain highly inter-visible, potentially resulting in extending effects into new areas, such as an increased presence of wind farm development on a skyline, or the creation of multiple, separate wind farm defined landscapes.

Nature of Effects

The nature of effect refers to whether the effects of the Proposed Development are positive /beneficial or negative/ adverse. Guidance provided by the Landscape Institute on the nature of effect in GLVIA3 states that "*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.

In relation to many forms of development, the EIA will identify beneficial and adverse effects under the term 'nature of effect'. The landscape and visual effects of wind farms are difficult to categorise in either of these brackets as, unlike other disciplines, there are no definitive criteria by which these effects can be measured as being categorically beneficial or adverse. For example, in disciplines such as noise or ecology it is possible to identify the nature of the effect of a wind farm by objectively quantifying its effect and assessing the nature of that effect in prescriptive terms. However, this is not the case with landscape and visual effects, where the approach combines quantitative and qualitative assessment.

It is evident from existing research and publications on public attitudes to wind farms that public opinion nationally towards wind farms is diverse and that some observers perceive the visual effects of a wind farm as beneficial or neutral, while others may perceive the same effects as adverse. This varied perception often depends on the type of effect, the perception and opinion of the observer and whether the public attitudes surveyed are pre or post construction.

Judgements on the nature of effect are based on professional experience and reasoned opinion informed by best practice guidance.

Adverse, neutral or beneficial, effects are assessed 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 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 neither contributes to, nor detracts from, the landscape and visual resource and can be accommodated with neither beneficial or adverse effects, or 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.

- Adverse effects are those that detract from or weaken the landscape and visual resource 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.

OPEN generally adopts a precautionary approach, which assumes that significant landscape and visual effects will be weighed on the negative side of the planning balance although beneficial or neutral effects may arise in certain situations.

Unless it is stated otherwise, the effects of the Proposed Development are considered to be adverse.

Duration and Reversibility

The effects of the Proposed Development are of variable duration, and are assessed as short-term or long-term, and permanent or temporary/reversible. It is anticipated that the operational life of the Proposed Development will be 40 years. The turbines, site access tracks and substation will be apparent during this time, and these effects are considered to be long-term.

Other infrastructure and operations such as the construction processes and plant (including tall cranes for turbine erection) and welfare buildings, construction and storage compounds will be apparent only during the initial construction period of the Proposed Development and are considered to be short-term effects although they may last for the duration of the construction process.

The reversibility of effects is variable. The most apparent effects on the landscape and visual resource, which arise from the presence of the turbines, are temporary as the turbines will be removed on decommissioning, as will the substation. The effects of the tall cranes and heavy machinery used during the construction and decommissioning periods are also temporary.

Following construction, the access tracks will be left in-situ for use by the landowner. Following decommission, access tracks will be reinstated with the exception of those which replaced the original estate access tracks which will be retained. Turbine foundations will be cleared to 1 m below ground level and the remainder, along with underground cabling will be left in-situ below ground with no residual landscape and visual effects.

In order to avoid repetition, the duration and reversibility of effects are not reiterated throughout the assessment.

Visual Representation

Volume 2 of this EIA Report contains seven sections associated with the LVIA. These are as follows:

- **Figures 9.1 to 9.23**: LVIA GIS Figures
- **Figures 9.24 to 9.40**: LVIA NatureScot Visualisations
- **Figures 9.41 to 9.57**: LVIA THC Visualisations
- **Figures 9.58 to 9.60**: Additional Wirelines

An outline of the methodology applied in the production of LVIA THC Graphics is presented at the front of this set of figures, which accords with THC's 'Visualisation Standards for Wind Energy Developments' (THC, 2016).

Presented below is an outline of the methodology applied in the production of LVIA NatureScot Visualisations, which accord with NatureScot's 'Visual Representation of Wind Farms Version 2.2' (SNH, 2017), as well as methodology relating to the production of the GIS Figures.

The photographs used to produce the photomontages have been taken using Canon EOS 5D and 6D Digital SLR cameras with fixed 50 mm lenses. These cameras have a full-frame CMOS sensor. The photographs are taken on a tripod with a pano-head at a height of approximately 1.5 m above ground level with the panoramic head set to 20-degrees.

To create the baseline panoramic photographs, the frames are individually cylindrically projected and then digitally joined to create a fully cylindrically projected panorama using PTGui software. This process avoids the wide-angle effect that would result should these frames be arranged in a perspective projection, whereby the image is not faceted to allow for the cylindrical nature of the full 360-degree view but appears essentially as a flat plane. Tonal alterations are made using Adobe software to create an even range of tones across the photographs once joined.

The photographs are also joined to create planar projection panoramas using HUgin or Windfarm software. These are used in the creation of the 53.5-degree field of view photomontages. If necessary to accommodate the full width of the Proposed Development more than one 53.5-degree field of view panorama will be prepared.

Computer modelling is used to assist in the assessment process and to illustrate the effects of the Proposed Development through the production of zone of theoretical visibility diagrams (ZTVs), wirelines, and photomontages. The ZTVs have been generated using ESRI ArcGIS software, based on the Ordnance Survey Terrain 5 digital terrain model (DTM), resampled to a 10 m grid. The ZTV viewer height is set to 2 m above ground level and the analysis takes into account earth curvature and light refraction. The ZTVs are not calculated using mathematically approximate methods and unless stated, they are based on a bare-ground survey. No surface features, such as buildings and trees, are included in the analysis.

Wireline representations that illustrate the Proposed Development model set within a computer-generated image of landform are used in the assessment to predict the theoretical appearance of the turbines. These are produced with Resoft Windfarm software and are based on Terrain 5 Ordnance Survey DTM. There are limitations in the accuracy of this data so that landform may not be picked up precisely. This may result in turbines being more or less visible than is shown. Where descriptions within the assessment identify the numbers of turbines visible this refers to the illustrations generated and therefore the reality may differ to a degree from these impressions due to the limitations of the data used.

Photomontages have been produced using Resoft Windfarm software, to provide a more realistic image of the appearance of the Proposed Development. Where there is notable visibility of site infrastructure, and where practical this is shown in the photomontages.

The baseline photographs and cumulative wireline visualisations shown for each viewpoint cover a 90-degree (or in some cases, up to 360 -degree) field of view, which accords with NatureScot guidance. These are cylindrically projected images and should be viewed at a principal distance of 522 mm.

The 53.5-degree field of view wirelines and photomontage are prepared using a planar projected image and should also be viewed flat at a comfortable arm's length. These images are each printed on paper 841 x 297 mm (half A1) which provides for a relatively large-scale image.

NatureScot's guidance sets out the need to prepare a viewpoint pack containing single frame photomontage images from a set of key viewpoints. The requirement for these is to be agreed with the 'determining authority'. The single frame views provide A3 visualisations that have been cropped from the 53.5-degree field of view panoramas to produce a 27-degree frame. While these are printed at the same scale, the narrowing of the field of view, may, in some instances, preclude part of the Proposed Development.

In the wirelines, the turbines are shown with the central turbines directly facing the viewer, with the full rotor diameter visible at its tallest extent. In the photomontages, the turbine rotors are shown with a random appearance with the central turbines directly facing the viewer. The blades of every turbine in the Proposed Development will face the same direction, forwards towards the viewpoint.

The photographs and other graphic material such as wirelines 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.