Appendix 7.1: Landscape and Visual Impact Assessment

Appendix 7.1a Methodology for Landscape and Visual Impact Assessment

Appendix 7.1b Consultation Correspondence

Appendix 7.1a: Methodology for Landscape and Visual Impact Assessment

1.1 Introduction

1.1.1 This appendix describes in detail the methodology that has been used to carry out the Landscape and Visual Impact Assessment (LVIA) for the Development. The LVIA identifies and assesses the effects that Development will have on the landscape and visual resource of the 40km radius study area. This appendix is structured as follows:

- Categories of effects;
- Significance of effects;
- Assessment of physical landscape effects;
- Assessment of effects on landscape character;
- Assessment of effects on wild land;
- Assessment of effects on views;
- Assessment of cumulative effects;
- Nature of effects; and
- Duration and reversibility of effects.

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

- Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment (Landscape Institute, 2011);
- Assessing the Cumulative Impact of Onshore Wind Energy Developments (SNH, 2012);
- Assessing the Impacts on Wild Land-Interim Guidance Note (SNH, February 2007 with note added October 2014);
- Assessment of Highland Special Landscape Areas (THC in partnership with SNH, 2011);
- Guidelines for Landscape and Visual Impact Assessment: Third Edition (Landscape Institute and IEMA, 2013)(GLVIA3);
- Landscape Character Assessment Guidance for England and Scotland (SNH and TCA, 2002);
- Siting and Designing of Windfarms in the Landscape: Version 3a (SNH, 2017);
- Visual Representation of Wind Farms Version 2.2 (SNH, February 2017); and
- Visualisation Standards for Wind Energy Developments (The Highland Council, July 2016).

1.2 Categories of Effects

1.2.1 For the purpose of assessment, the potential effects on the landscape and visual resource are grouped into five categories:

1.2.2 **Physical effects** are restricted to the area within the Development site boundary and are the direct effects on the existing fabric of the site, such as alteration to ground cover. This

category of effects is made up of landscape elements, which are the components of the landscape such as rough grassland and moorland that may be directly and physically affected by the Development.

1.2.3 **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 physically alter this pattern of elements, or through visibility of the 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 landscape-related designated areas.

1.2.4 **Effects on wild land areas:** the assessment of effects on wild land areas (WLAs) is carried out in accordance with SNH guidance (Assessing the Impacts on Wild Land-Interim Guidance Note February 2007 with note added October 2014).

1.2.5 **Effects on views:** the assessment of effects on views is an assessment of how the introduction of the Development will 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 Development will have on a series of viewpoints around the study area; and
- An assessment of the effects that the Development will have on views from principal visual receptors, which are relevant settlements and routes found throughout the study area.

1.2.6 **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 Development to the cumulative situation.

1.3 Assessment of Effects

1.3.1 The previous section describes how the landscape and visual assessment is carried out in five categories: the assessment of physical effects; the assessment of effects on landscape character; the assessment of effects on wild land areas; the assessment of effects on views; and the assessment of cumulative effects. The broad principles used in the assessment of significance of these categories (other than the assessment of effects on wild land areas) are the same, and are described below. The detailed methodology for the assessment of significance does, however, vary, and the specific criteria used are described in subsequent sections of this Appendix.

1.3.2 The objective of the assessment of the Development is to predict the likely significant effects on the landscape and visual resource. In accordance with the Environmental Impact Assessment (Scotland) Regulations 2017 the LVIA effects are assessed to be either **significant** or **not significant**. The LVIA does not define intermediate levels of significance as the Regulations do not provide for these.

1.3.3 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 Development.

Sensitivity

1.3.4 Sensitivity is an expression of the ability of a landscape receptor or view to accommodate the Development. Sensitivity is determined through a combination of the value of the receptor and its susceptibility to the Development.

1.3.5 Levels of sensitivity - high, medium-high, medium, medium-low and low - are applied in order that the judgement used in the process of assessment is apparent.

Magnitude of Change

1.3.6 Magnitude of change is an expression of the extent of the effect on landscape receptors and views that will result from the introduction of the Development. The magnitude of change is assessed in terms of a number of variables, including the size and scale of the impact and the extent of the affected area.

1.3.7 Levels of magnitude of change - high, medium-high, medium, medium-low, low and negligible - are applied in order that the judgement used in the process of assessment is apparent.

Significance of Effects

1.3.8 The significance of effects is assessed through a combination of the **sensitivity** of the landscape receptor or view and the **magnitude of change** that will result from the addition of the 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 understanding of the threshold at which significant effects may arise.

Table 1: Illustrative Significance Matrix

Magnitude Sensitivity	High	Medium-High	Medium	Medium-Low	Low	Negligible
High	Significant	Significant	Significant	Significant/ Not Significant	Not Significant	Not Significant
Medium-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-Low	Significant/ Not Significant	Significant/ Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Low	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant

1.3.9 Effects 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.

1.3.10 A **significant** effect occurs where the 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 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 Development may have an influence but this influence will not be definitive. Significant cumulative landscape and visual effects arise where the addition of the Development to other wind farms and/or other major developments leads to wind farms or other large-scale development becoming a prevailing landscape and visual characteristic.

1.4 Assessment of Physical Landscape Effects

1.4.1 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

1.4.2 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 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 woodland is likely to be increased if they 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; and
- 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.

1.4.3 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 to the Development as evaluated by professional judgement.

Magnitude of Change on Landscape Elements

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

- **High,** where the Development will result in the complete removal of a landscape element or substantial alteration to a key landscape element;
- **Medium**, where the 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 Development will result in the removal of a minor part of a landscape element or a minor alteration to a key landscape element; and
- **Negligible**, where the alteration to the landscape element is barely discernible.

1.4.5 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

1.4.6 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 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 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.

1.5 Assessment of Effects on Landscape Character

1.5.1 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 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.

1.5.2 The objective of the assessment of effects on landscape character is to determine which landscape character receptors will be affected by the Development, and whether these effects will be significant or not significant. The assessment of effects on landscape character involves an evaluation of sensitivity and magnitude of change, and the resultant assessment of significance.

Sensitivity of Landscape Character Receptors

1.5.3 The sensitivity of a landscape character receptor is an expression of its ability to accommodate the 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 Character Receptors

1.5.4 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). 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; and
- **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 of Landscape Character Receptors

1.5.5 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 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 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 Development. For example, a landscape that is of a particularly wild and remote character may have a high susceptibility to the influence of the Development due to the contrast that it would have with the landscape, whereas a developed 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 Development; and
- **Landscape association**: the extent to which the 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 Development is located and the landscape receptor from which the Development is being experienced. This association will be most important where the landscapes are directly related; for example, if the 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 Development lies inland of a coastal landscape that has its main focus outwards over the sea.

Levels of Sensitivity

1.5.6 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.

Magnitude of Change on Landscape Character Receptors

1.5.7 The magnitude of change that the Development will have on landscape receptors is assessed in terms of the size or scale of the change, the geographical extent of the area influenced and its duration and reversibility.

Size or Scale

1.5.8 This criterion relates to the size or scale of change to the landscape that will arise as a result of the 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 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 components are added to the landscape;

- The extent to which the Development will change - physically or perceptually - the characteristics that may be important in the creation of the distinctive character of the landscape. 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 Development with these key characteristics;
- The distance between the landscape character receptor and the Development. Generally, the greater the distance, the lower the scale of change as the Development will constitute a less apparent influence on the landscape character; and
- The extent of the Development that will be seen from the landscape receptor. Visibility of the Development may range from one turbine blade tip to all of the turbines, and generally the greater the extent of the Development that can be seen, the greater the change.

Geographical extent

1.5.9 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 Development and is principally a reflection of the extent of the landscape receptor that will be affected by visibility of the Development.

Duration and Reversibility

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

Levels of Magnitude of Change

1.5.11 An evaluation of the magnitude of change on landscape receptors is made by combining the considerations of size or scale of change, geographical extent and, where relevant, duration and reversibility. The magnitude of change is assessed as high, medium, or low according to the following definitions:

- **High**, where the 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 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 uncharacteristic in the receiving landscape;
- **Low**, where the 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; and
- Negligible, where the alteration to landscape character is barely discernible.

1.5.12 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

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

1.5.14 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 Development is not definitive and the landscape character of the receptor continues to be characterised principally by its baseline characteristics. In this instance the Development may have an influence on the landscape character of the receptor, but this influence will not be a defining one.

1.6 Wild land

1.6.1 The assessment of effects on wild land is carried out according to the SNH document, 'Advice Note - Assessing the Impacts on Wild Land' (2007, with note added October 2014).

1.7 Assessment of Effects on Views

1.7.1 The assessment of effects on views evaluates how the introduction of the Development will affect views and visual amenity. The assessment of visual effects is carried out in two parts:

- An assessment of the effects that the Development will have on views that people will gain from principal visual receptors, including settlements, roads, railways and recreational routes throughout the study area; and
- An assessment of the effects that the Development will have on a series of viewpoints that have been selected to represent visibility from throughout the study area.

1.7.2 The objective of the assessment of effects on visual receptors is to determine what the likely effects of the Development will be on views across the study area, and whether these effects will be significant or not significant. The assessment of effects on views involves an evaluation of sensitivity and magnitude of change, and the resultant assessment of significance.

Sensitivity of Visual Receptors

1.7.3 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 Development.

Value of Views

1.7.4 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 signposted 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 may be increased if it presents an important vista from a designed landscape or lies within or overlooks a designated area such as an NSA, which implies a greater value to the visible landscape;
- **Informal recognition**: views that are well-known at a local level 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; and
- **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.

Susceptibility to Change

1.7.5 Susceptibility relates to the nature of the viewer and how susceptible they are to the potential effects of the Development. This is determined by the nature of the viewer, which is 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 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.

Levels of Sensitivity

1.7.6 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.

Magnitude of Change on Views

1.7.7 The magnitude of change on visual receptors and views is assessed in terms of the **size or scale of the change**, the **geographical extent of the visual effect** and, in some situations, its **duration and reversibility**.

Size or Scale

1.7.8 This criterion relates to the size or scale of change to the view that will arise as a result of the 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 Development. Generally, the greater the distance, the lower the magnitude of change as the Development will constitute a smaller-scale component of the view;
- The **proportion** of the Development that will be seen. Visibility may range from one blade tip to all of the turbines. Generally, the more of the 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 Development. Generally, the more of a view that is affected, the higher the magnitude of change will be. If the Development extends across the whole of the open part of the outlook, the magnitude of change will generally be higher. Conversely, if the Development covers just a part of an open, expansive and wide view, the magnitude of change is likely to be reduced as the Development will not affect the whole open part of the outlook;
- The **scale and character** of the context within which the 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; and
- The **consistency of the appearance** of the Development. If the 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

1.7.9 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 Development may be seen. If the Development is visible from extensive areas, the overall magnitude of change is likely to be higher than if it is visible from a limited part of a receptor;
- 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; and
- The **position** of the Development in relation to the principal orientation of the view and activity of the receptor. If the 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.

Duration and Reversibility

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

Levels of Magnitude of Change

1.7.11 The magnitude of change on views and visual receptors is evaluated by combining the considerations of size or scale of change, geographical extent and, where relevant, duration and reversibility. The magnitude of change is assessed as high, medium or low according to the following definitions:

- **High**, where the 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 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 uncharacteristic in the view;
- **Low,** where the 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; and
- **Negligible**, where the alteration to the view is barely discernible.

1.7.12 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

1.7.13 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 Development will have a significant or not significant effect on the view or visual receptor. The matrix shown in Table 1 is also used to inform the threshold of significance when combining sensitivity and magnitude of change.

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

1.8 Assessment of Cumulative Effects

Introduction

1.8.1 Cumulative effects are the incremental effects that arise through the interaction of two or more developments within the landscape and visual baseline context. Cumulative effects arise where the study areas for two or more wind energy developments overlap so that both are experienced at a proximity where they may have a greater incremental effect, or where wind energy developments may combine to have a sequential effect irrespective of any overlap in study areas. The cumulative effect assessed is that which will arise from the addition of the Development to the existing or predicted cumulative situation, and not the overall effect of multiple wind farms.

Types of Cumulative Effect

1.8.2 Cumulative effects on landscape character arise when two or more wind farms change the characteristics of a landscape receptor to such an extent that they create a 'wind farm' landscape type.

1.8.3 Cumulative effects on views consist of combined visibility and sequential effects. Combined visibility occurs where the observer is able to see two or more developments from one viewpoint. Combined visibility may either be 'in combination', where several wind farms are within the observer's main angle of view at the same time, or 'in succession', where the observer has to turn to see the various wind farms. Sequential effects occur when the observer has to move to another viewpoint to see different developments, and may arise assessed on roads, railway lines and footpaths.

1.8.4 The significance of cumulative effects is determined through a combination of the sensitivity of the landscape receptor or visual receptor/view and the cumulative magnitude of change arising from the addition of the Development. The sensitivity of landscape receptors and visual receptors/views is taken from the main assessment, while the cumulative magnitude of change is evaluated according to additional criteria, described below.

Cumulative Magnitude of Change

1.8.5 The cumulative magnitude of change is an expression of the degree to which landscape character receptors and visual receptors/views will be changed by the addition of the Development to wind farm developments that are already operational, consented or at application stage. The cumulative magnitude of change is assessed based on a number of criteria, as follows:

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

- The extent of the developed skyline. If the 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 wind farm 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 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 wind farm developments. If the Development is of a similar scale to other visible wind farms, 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 Development in relation to other wind farm developments. The cumulative magnitude of change of the Development is likely to be lower if its turbine height, arrangement and layout design are broadly similar to other wind farms in the landscape, as they are more likely to appear as relatively simple and logical components of the landscape;
- The context in which the wind farm 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 unco-ordinated, affecting a wide range of landscape characters and blurring the distinction between them; and
- The magnitude of change of the 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 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 Development will equate to the 'no change' situation.

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

- **High,** the addition of the Development to other wind energy developments in the landscape or view will result in a major change to the cumulative wind farm situation;
- **Medium**, the addition of the Development to other wind energy developments in the landscape or view will result in a moderate change to the cumulative development situation;
- **Low**, the addition of the Development to other wind energy developments in the landscape or view will result in a minor change to the cumulative situation.

1.8.7 The cumulative change may be negligible, where the 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.

Significance of Cumulative Effects

1.8.8 Significant landscape and visual effects arise where a 'wind farm' landscape is created as a result of the addition of the Development to other existing or proposed wind farms, which results in wind turbines becoming so prolific that they become a prevailing landscape and visual characteristic. The creation of a wind farm landscape 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 will not usually change the overall existing landscape character, or become a new characteristic element of a wider landscape;
- With the addition of further wind farm development, wind farms can become a characteristic element of the landscape, as the wind farms appear as repeated landscape elements. Providing there is sufficient separation, physically, visually and perceptually, between each development, the wind farms are likely to appear as a series of wind farms within the landscape and will not necessarily become the dominant or defining characteristic of the landscape;
- The next stage is to consider larger commercial wind farms or an increase in the number of wind farms that appear to physically, visually and perceptually coalesce. This may lead to a 'wind farm landscape' where multiple wind farms are the prevailing or defining characteristic of the landscape. A wind farm landscape may already exist as part of the baseline landscape context.

1.8.9 In this context, the addition of the Development may lead to the final step of a landscape or view becoming defined by the presence of wind farms, so that other patterns and components are no longer definitive. In this case, the cumulative effect would be assessed as significant. In some cases, significant cumulative effects may arise where the Development lies in close proximity to other developments, but with notable differences between them in terms of scale and setting. However, provided that the Development is designed to achieve a high level of visual integration with adjacent or nearby wind farms, these effects would be reduced. In particular, the effects of a wind farm extension are often less likely to be significant as long as the wind farms are compatible and the overall capacity of the landscape is not exceeded. The capacity of the landscape or view may be assessed as being exceeded where the Development extends across landscape character types or clear visual/topographic thresholds in a view. Significant effects may also result from the creation of a situation where wind farms have some geographical separation but remain highly inter-visible, potentially resulting in a proliferation of wind farm development on the skyline, or the creation of multiple discrete wind farm landscapes.

1.8.10 It is important to remember that the objective of the cumulative assessment is different from the assessment of effects of the Development itself. In the cumulative assessment the intention is to establish whether or not the addition of the Development, in combination with other relevant existing and proposed wind farms, may lead to a landscape character or view that is characterised primarily by wind farms so that other patterns and components are no longer definitive. The assessment of the effects of the Development itself focusses on the effect that the Development will have on the

viewpoints, principal visual receptors and landscape character receptors, taking baseline wind farms into consideration but not assessing the contribution of the Development to the cumulative situation. Baseline (operational, under construction and consented) cumulative wind farms are taken into consideration in both the assessment of the Development itself and the cumulative assessment, while application-stage wind farms are considered only in the cumulative assessment.

1.9 Nature of Effects

1.9.1 The 'nature of effects' relates to whether the effects of the Development are positive/beneficial or negative/adverse. Guidance provided 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 does not provide an indication as to how that may be established in practice. The nature of effect is therefore one that requires interpretation and reasoned professional opinion.

1.9.2 In relation to many forms of development, the ES 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.

1.9.3 In this assessment, beneficial, neutral and adverse effects are defined as follows:

- **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 Development neither contributes to nor detracts from the landscape and visual resource and is accommodated with neither beneficial nor 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.

1.9.4 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 Development are therefore considered to be adverse.

1.10 Duration and Reversibility of Effects

1.10.1 The effects of the Development are of variable duration, and are assessed as short-term or long-term, and permanent or reversible. It is anticipated that the operational life of the Development will be 25 years. The turbines, meteorological mast, site access tracks and

operations building and compound and will be apparent during this time, and these effects are considered to be long-term.

1.10.2 Other infrastructure and operations such as the construction processes and plant (including tall cranes for turbine erection) and construction and storage compounds will be apparent only during the initial construction period of the Development and are considered to be short-term effects. Borrow pit excavation will also be short-term as borrow pits will be restored at the end of the construction process, although a permanently altered ground profile may remain evident.

1.10.3 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 reversible as the turbines will be removed on decommissioning, as will the permanent meteorological mast. The effects of the tall cranes and heavy machinery used during the construction and decommissioning periods are also reversible.

1.10.4 It is anticipated that access tracks would remain at decommissioning. Turbine foundations and underground cabling will be left in-situ below ground with no residual landscape and visual effects.

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

Appendix 7.1b: Consultation Correspondence

i) Proposed LVIA Scope of Works sent to the Energy Consents Unit (ECU), The Highland Council (THC) and Scottish Natural Heritage (SNH) 6th September 2018

Gordonbush Extension Wind Farm Section 36c Consent Variation Application

Proposed Scope of Works – Landscape and Visual Assessment September 2018

Introduction

OPEN is keen to establish the scope of works for the LVIA aspect of the application, particularly in terms of the LVIA graphics that will be submitted to support the revised assessment. With this in mind, we have drafted up a series of figures, listed below, that we consider would be helpful in explaining the impacts of the proposed changes. This list is based largely upon the figures that were produced for the 2016 FEI, as agreed with THC and SNH at that time.

Please note that the list of figures and our overall proposed scope of works is based on a 149.9m blade tip height, which represents the upper tip height limit currently under consideration for the s.36c application. A range of turbines between 130m tip height and 149.9m tip height (and between 117m and 136m rotor diameter) is currently under consideration. A number of factors and effects, including landscape and visual, will be considered prior to arriving at a decision on the maximum tip height/ rotor diameter for the Revised Development.

As detailed at the pre-application meeting, SSE is seeking to reduce the number of turbines from 15 to 11, and the turbine positions of those 11 turbines will remain unchanged from those consented. Please note that for ease of reference, the turbine that is labelled turbine 12 in the Consented Development has been renumbered as turbine 11 in the Revised Development.

As discussed at the meeting, the proposed reduction in the number of turbines has notable visual benefits. For example, the five viewpoints (Viewpoints 3, 4, 6, 8 and 11) that were illustrated at the meeting demonstrated a reduction in visibility in views from Strath Brora (Viewpoints 3, 4 and 6); a reduction in the extent of the wind farm across the view (Viewpoints 6, 8 and 11); and a reduction in clustering of turbines (most notable in Viewpoints 6 and 8).

List of Figures

The proposed list of figures is as follows:

- Figure x.1a Blade tip ZTV with viewpoints A3 (40km radius)
- Figure x.1b Blade tip ZTV with viewpoints A1 (40km radius)
- Figure x.1c Comparative ZTV with Consented Development (40km radius)
- Figure x.1d Comparative ZTV with operational Gordonbush Wind Farm
- Figure x.2a Hub height ZTV with viewpoints A3
- Figure x.2b Hub height ZTV with viewpoints A1
- Figure x.3a Landscape character with ZTV (40km radius)
- Figure x.3b Landscape character with ZTV (10km radius)
- Figure x.4 Landscape designations with ZTV (40km radius)

- Figure x.5a Wild Land Areas (WLAs) with ZTV (40km radius)
- Figure x.5b WLAs with comparative ZTV with Consented Development (40km radius)
- Figure x.5c WLAs with comparative ZTV with operational Gordonbush (40km radius)
- Figure x.6 Principal visual receptors with ZTV (40km radius)
- Figure x.7 Core paths with ZTV (10km radius)
- Figure x.8a-c SNH Visualisations Viewpoint 1 (including viewpoint location plan, 53.5- degree wireline of Consented Development and 53.5-degree wireline of Revised Development)
- Figure x.9a-c SNH Visualisations Viewpoint 2 (including viewpoint location plan, 53.5- degree wireline of Consented Development and 53.5-degree wireline of Revised Development)
- Figure x.10a-d SNH Visualisations Viewpoint 3 (including viewpoint location plan, 53.5- degree wireline of Consented Development, 53.5-degree wireline of Revised Development and photomontage)
- Figure x.11a-d SNH Visualisations Viewpoint 4 (including viewpoint location plan, 53.5- degree wireline of Consented Development, 53.5-degree wireline of Revised Development and photomontage)
- Figure x.12a-d SNH Visualisations Viewpoint 5 (including viewpoint location plan, 53.5- degree wireline of Consented Development, 53.5-degree wireline of Revised Development and photomontage)
- Figure x.13a-d SNH Visualisations Viewpoint 6 (including viewpoint location plan, 53.5- degree wireline of Consented Development, 53.5-degree wireline of Revised Development and photomontage)
- Figure x.14a-d SNH Visualisations Viewpoint 7 (including viewpoint location plan, 53.5- degree wireline of Consented Development, 53.5-degree wireline of Revised Development and photomontage)
- Figure x.15a-d SNH Visualisations Viewpoint 8 (including viewpoint location plan, 53.5- degree wireline of Consented Development, 53.5-degree wireline of Revised Development and photomontage)
- Figure x.16a-c SNH Visualisations Viewpoint 9 (including viewpoint location plan, 53.5- degree wireline of Consented Development and 53.5-degree wireline of Revised Development)
- Figure x.17a-c SNH Visualisations Viewpoint 10 (including viewpoint location plan, 53.5- degree wireline of Consented Development and 53.5-degree wireline of Revised Development)
- Figure x.18a-c SNH Visualisations Viewpoint 11 (including viewpoint location plan, 53.5- degree wireline of Consented Development and 53.5-degree wireline of Revised Development)
- Figure x.19a-c SNH Visualisations Viewpoint 12 (including viewpoint location plan, 53.5- degree wireline of Consented Development and 53.5-degree wireline of Revised Development)

- Figure x.20a-c SNH Visualisations Viewpoint 13 (including viewpoint location plan, 53.5- degree wireline of Consented Development and 53.5-degree wireline of Revised Development)
- Figure x.21a-c SNH Visualisations Viewpoint 14 (including viewpoint location plan, 53.5- degree wireline of Consented Development and 53.5-degree wireline of Revised Development)
- Figure x.22a-c SNH Visualisations Viewpoint 15 (including viewpoint location plan, 53.5- degree wireline of Consented Development and 53.5-degree wireline of Revised Development)
- Figure x.23 THC Visualisation Viewpoint 3 (including viewpoint location plan and single-frame photomontage)
- Figure x.24 THC Visualisation Viewpoint 4 (including viewpoint location plan and single-frame photomontage)
- Figure x.25 THC Visualisation Viewpoint 5 (including viewpoint location plan and single- frame photomontage)
- Figure x.26 THC Visualisation Viewpoint 6 (including viewpoint location plan and single-frame photomontage)
- Figure x.27 THC Visualisation Viewpoint 7 (including viewpoint location plan and single-frame photomontage)
- Figure x.28 THC Visualisation Viewpoint 8 (including viewpoint location plan and single-frame photomontage)

ZTVs

As you can see, this list includes a series of ZTV figures that show the Revised Development in relation to receptors such as landscape character types, designated areas, WLAs, visual receptors, as well as comparative ZTVs that show the relative visibility of the Consented Development and Revised Development.

Wirelines

The original 2015 ES included views from 17 viewpoints. In terms of visualisations for this application, we are proposing the inclusion of wirelines for the 15 viewpoints that lie within a 20km radius of the site. We are not proposing to include wireline views from the other two viewpoints, both of which lie over 25km away, as these are not of particular relevance to the revised assessment.

As with the FEI, we are proposing that the wirelines are submitted following SNH visualisation methodology. Ken, you were content with this approach at the FEI stage, and hopefully it is again acceptable to you?

Photomontages

In terms of photomontages, we are proposing that we prepare photomontages of the Revised Development in the same way and for the same viewpoints as for the FEI. This would include montages using both SNH and THC methodology for Viewpoints 3, 4, 5, 6, 7 and 8, which are the key viewpoints where montages are likely to be useful and relevant. The SNH montages will be 53.5-

degrees, as per current guidance, while the THC montages will be THC single frame views (75mm focal length) as was agreed for the FEI.

In the construction of the photomontages, we would propose to use the photographs that were taken for the original ES. We have reviewed the key Strath Brora views on site, and as far as we could see there are no notable changes to the views (in terms of forestry removal, for example) that would alter the visibility or appearance of the wind farm. We are also not aware of any wind farm construction that would have a relevant effect on the viewpoint photographs.

Cumulative Assessment

We are proposing that the cumulative assessment is not revisited, in the absence of any change in the cumulative situation that could lead to a change in the findings of the cumulative assessment that was carried out previously.

Wild Land

One of the topics that will be addressed in the revised LVIA is the effects of the Revised Development on wild land. As you noted last week David, the methodology for assessing effects on wild land has been updated since the submission of the original application and the FEI, and the assessment in both the original LVIA and FEI was carried out using the previous methodology.

The effect on the Ben Klibreck – Armine Forest WLA was assessed in the original ES and FEI to be not significant due largely to the baseline presence of Gordonbush Wind Farm and the level of integration and proximity of the extension to the operational Wind Farm, which ensures that wind farm influence on the WLA would not be significantly increased. The 275kV transmission line that runs along the edge of the WLA was also a notable consideration.

In order to illustrate the implications of the Revised Development on the WLA, we have attached several figures to this email:

- Figure 1 – ZTV of the Revised Development (showing the maximum proposed blade tip height of 149.9m)
- Figure 2 – comparative ZTV showing visibility of the Revised Development (again showing the maximum proposed blade tip height of 149.9m) compared to visibility of the Consented Development
- Comparative wirelines from Viewpoint 11 (Hope Hill) which is within the WLA
- Comparative wirelines from Viewpoint 13 (Creag nam Fiadh) which is within the WLA
- Comparative wirelines from Viewpoint 15 (Ben Armine) which is within the WLA

Using these figures, we have reviewed the likely effects of the Revised Development on the WLA and consider that the effect is unlikely to change notably as a result of the proposed changes, thus remaining not significant. The reasons for this are described below.

- The comparative ZTV (Figure 2, attached) shows that visibility of the Revised Development is very similar to that of the Consented Development, with just several small areas of additional visibility

- The ZTV shown in Figure 1, which shows only the Revised Development, indicates that visibility in these areas of 'new' visibility is limited to a maximum of 4 turbines (i.e. yellow or orange colouring, as shown on the ZTV legend)

- This maximum visibility of the Revised Development in these areas will be 19.9m of blade length (given the 19.9m increase in the overall tip height between the consented and proposed turbines)

- The maximum visibility of the Revised Development in these areas of 'new' visibility will therefore be up to 19.9m of up to four turbines

- The comparative wirelines for Viewpoints 11, 13 and 15 all indicate that the removal of Turbines 11, 13, 14 and 16 will considerably reduce the horizontal spread of the wind farm to the south, as seen from the WLA

- The wirelines indicate that while the proposed maximum increase in tip height to 149.9m is likely to be discernible, the proposed turbines will remain below the vertical envelope of the operational wind farm

- The wirelines also indicate that the Revised Development is seen in the context of the operational Gordonbush Wind Farm, and thus does not provide a 'new' wind farm influence on the WLA

For these reasons, and because, as a result, the effect on the WLA will remain not significant, we would propose that the wild land assessment that was carried out in the original ES (and reassessed in the FEI) is updated in this current application rather than a new assessment being carried out according to the updated methodology.

ii) Email received from David Patterson (SNH) 12th September 2018

Dear Rachel (cc – Anna Webster),

Please find attached our comments for the Gordonbush Wind Farm Extension – Revised Section 36 application. We sent in our advice to the South Kilbraur development a few days ago, so I hope you received that okay.

Thanks,

David.

The following extracts are drawn from SNH's pre-application response, as attached to the email.

2. Wild Land

The wireframe view-points clearly indicate that the proposed scheme will reduce the visual spread of turbines from the consented layout. This is especially welcomed from the highly sensitive location of VP11 which is within the interior of the adjacent Wild Land Area (WLA). The loss of the four turbines and the increase in height of the remaining 12 are considered to result in an overall improvement in the layout and a slight reduction in the landscape and visual impact. This is likely to be especially the case for impacts identified on the qualities of the WLA. However, we continue to advise that there will be additional adverse landscape and visual effects as a result of this proposal, but these are not considered to exceed those of the original consented scheme.

The above comments are based on the information provided at this pre-application meeting, which related to a ZVI showing wire-frames from specific view-points. We have not had time to assess the additional information forwarded by the landscape consultant (dated 6 September) to inform this response. However, we will endeavour to respond to this in due course as part of our pre-application advice.

Key Points:
Wild Land
This proposal is likely to result in additional adverse effects, but these are not considered to exceed that of the existing wind farm scheme.

If the applicant wishes to deviate from any best practice guidance, they should provide justification for doing so well in advance of final submission.

iii) Email received from David Patterson (SNH) 20th September 2018

Our Ref: CPA 152353

Dear Anna (cc – Ken & Gillian),

We have looked through the additional information you sent in the drop-box link below and only have a couple of comments to make, as follows:

- We consider the visual material provided is of good quality which helps us to be able to provide timely advice to allow this proposal to progress through the planning system.
- We also advise that the EIA Report assessment is focused on the areas more likely to result in "likely significant effects" rather than all the effects.

Let us know if you need any additional feedback or advice on this.

Kind regards,

David.

iv) Email received from Gillian Webster (THC) 21st September 2018

Hi Anna
I am also happy with what has been provided – I will hopefully be issuing our pre-application advice to SSE today (or Monday at the latest) and this will contain further advice from our Landscape Officer
Kind regards
Gillian

v) Email sent to THC and SNH 15th October 2018

Gillian, David,
Many thanks for all your help with the pre-application advice, we very much appreciate your responses at various stages.

We are now well underway with the revised LVIA, and wanted to get in touch with you on the cumulative assessment. We are intending to set a cut-off date of 30th September 2018 for the inclusion of sites in the cumulative assessment in order that we can proceed with the final reassessment. While there have been some changes on the fringes of the 60km radius preliminary cumulative study area, as of 30th September there are no relevant changes to the cumulative situation in closer proximity to the site as it was assessed in the original LVIA (June 2015). The cumulative situation will therefore effectively remain the same as was assessed previously.

On this basis, I'd be very grateful if you could please let me know if you are happy with a 30th September cut-off date.

Please do let me know if you have any queries on this, or would like any further information.

Many thanks
Anna

vi) Email received from David Patterson (SNH) 16th October 2018

Hi Anna,

I will leave Gillian to get back to you on this.

Thanks,

David.

vii) Email received from Gillian Pearson (was Webster) (THC) 16th October 2018

Hi Anna
This seems sensible – we mainly look to assess cumulative impact in terms of schemes which are consented or operational as the impacts will be certain. I've copied in Anne Cowling in case she wishes to add anything further

Kind regards
Gillian

viii) Email sent to Gillian Pearson (was Webster) (THC) 16th October 2018

Gillian,
Thank you for your quick response, that's great. I'm glad you agree with the suggested approach. Anne, please do let me know if you have any other thoughts on this.
Many thanks
Anna