



APPENDIX 13-1

LVIA METHODOLOGY

1. LVIA METHODOLOGY

1.1 Scope and Definition of Landscape and Visual Impact (LVIA) Study Area

For the purposes of this chapter, where the ‘Dunneill Wind Farm site’, the ‘Proposed Development site’, or ‘the site’ is referred to, this relates to the primary study area and immediate environment in which the Dunneill Wind Farm is located.

However, the landscape and visual baseline mapping and viewpoint selection are based on wider study areas. On the basis of the desktop study and survey work undertaken, the professional judgement of the assessment team, experience from other relevant projects and policy guidance or standards (Appendix 3, DoHPLG ‘Draft Revised Wind Energy Development Guidelines’ 2019 and GLVIA 2013, see below) the LVIA study area has been chosen as 20 kilometres for visual and landscape effects and 15 kilometres from the proposed wind turbines for effects on landscape character. These are the study areas for which the baseline maps and viewpoint locations are produced and are referred to as the ‘study area’ or ‘LVIA Study Area’. Furthermore, on the basis of desk studies and survey work undertaken, the professional judgement of the assessment team, experience from other relevant projects and policy guidance or standards, the following topic areas have been scoped out of the assessment:

- Effects on landscape and visual receptors that have minimal or no theoretical visibility (as predicted by the ZTV) and/or very distant visibility, and are therefore unlikely to be subject to significant effects;
- Effects on designated landscapes beyond a 20 km radius from the Dunneill Wind Farm, from where it is judged that potential significant effects on key characteristics and/or special qualities, or views are judged unlikely to occur;
- Effects on landscape character beyond a 15 km radius from the Dunneill Wind Farm, where it is judged that potential significant effects on landscape character are unlikely to occur;
- Effects on visual receptors beyond a 20 km radius from the Dunneill Wind Farm, where it is judged that potential significant effects are unlikely to occur;
- Cumulative effects in relation to single turbines (except where otherwise stated);
- Cumulative landscape effects beyond a 15 km radius and cumulative visual effects beyond a 20km radius from the Dunneill Wind Farm, where it is judged that potential significant effects on landscape character are unlikely to occur;
- Effects on visual or landscape receptors in County Mayo, given the limited theoretical visibility of the Dunneill wind Farm in this County.

1.1.1 Guidelines

While the legislation and general guidance on Environmental Impact Assessment is set out in Chapter 1 of this EIAR only guidance specifically pertaining to the Landscape and Visual Impact are outlined below.

Ireland signed and ratified the European Landscape Convention (ELC) in 2002, which introduces a pan-European concept which centres on the quality of landscape protection, management and planning. The Department of Arts, Heritage and the Gaeltacht has published a National Landscape Strategy for Ireland in 2015. The Strategy aims to ensure compliance with the ELC and contains six

main objectives, which include developing a national Landscape Character Assessment and Developing Landscape Policies.

In 2000, the Department of the Environment and Local Government published ‘Landscape and Landscape Assessment: Consultation Draft of Guidelines for Planning Authorities’, which recommended that all Local Authorities adopt a standardised approach to landscape assessment for incorporation into Development Plans and consideration as part of the planning process. However, this DoEHLG 2000 guidance remains in draft form.

The landscape and visual impact assessment was primarily based on the Guidelines for Landscape and Visual Impact Assessment or GLVIA (The Landscape Institute/Institute of Environmental Management and Assessment, UK, 2013). A range of other guidelines also inform the preparation of this landscape and visual impact assessment, which include:

- Wind Energy Development Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government, 2006)
- Draft Revised Wind Energy Development Guidelines (Department of Housing, Planning and Local Government, 2019)
- Visual Assessment of Wind Farms: Best Practice (Scottish Natural Heritage, 2002)
- Visual Representation of Wind Farms: Version 2.2 (Scottish Natural Heritage, 2017)
- Siting and Designing Wind Farms in the Landscape, Version 3a (Scottish Natural Heritage, 2017)
- Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments. (Nature Scot, 2021)
- Photography and photomontage in landscape and visual impact assessment (Landscape Institute Advice Note 01/11, 2011)
- Visual representation of development proposals (Landscape Institute Technical Guidance Note 02/17, 2017)
- Spatial Planning for Onshore Wind Turbines – natural heritage considerations (Scottish Natural Heritage, 2015)
- Cumulative Impact of Wind Turbines on Landscape and Visual Amenity (Carmarthenshire County Council, 2013)

1.2 Zone of Theoretical Visibility Mapping

The Zone of Theoretical Visibility (ZTV) represents the area over which a development can theoretically be seen and is based on a Digital Terrain Model (DTM), overlaid on a map base. A DTM refers to the way in which a computer represents a piece of topography in three dimensions as a digital model. ZTV maps provide the following information:

- Indicates broad areas where visibility of a wind energy development is most likely to occur;
- How much of the wind energy development is likely to be visible (using different coloured bands for different numbers of turbines);
- The extent and pattern of visibility.

Production of ZTV maps is usually one of the first steps of Visual Impact Assessment, helping to inform the selection of the Study Area in which impacts will be considered in more detail and the identification of sensitive vantage points (Visual Representation of Wind Farms, Scottish Natural Heritage, 2017).

1.2.1 Limitations of ZTV Mapping

The Scottish Natural Heritage guidelines referred to above acknowledge the following limitations inherent to the use of theoretical visibility mapping:

- The ZTV presents a ‘bare ground’ scenario, i.e. visibility of the Proposed Development in a landscape without screening structures or vegetation. This includes trees, hedgerows, buildings and small-scale landform or ground surface features. The ZTV also does not take into account the effects of weather and atmospheric conditions, and therefore can be said to represent a ‘worst-case’ scenario, that is where the wind farm could potentially be seen given no intervening obstructions and favourable weather conditions.
- The ZTV indicates areas from where a wind farm may be visible, but cannot show how it will look, nor indicate the nature or magnitude of visual impacts. The visibility of the turbines will decrease with the distance from which they are viewed, but this is not accounted for in the ZTV. Figure 1-1 below provides an illustration of the differences in view relative to the distance from a turbine.

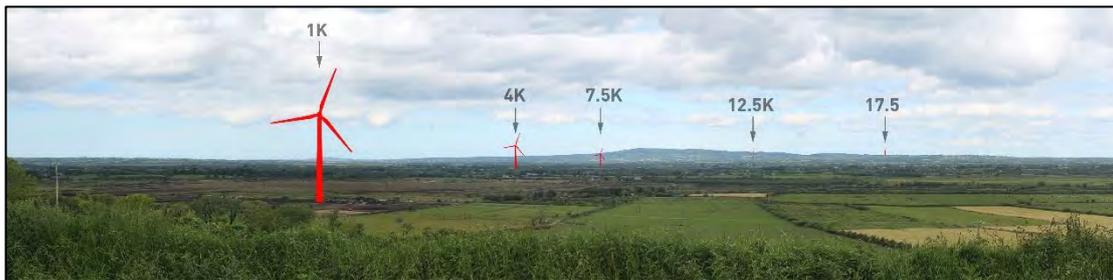


Figure 1-1 The effect of distance on visibility of wind turbines (Illustrative Purposes Only)

- A ZTV is only as accurate as the data on which it is based. It is not easy to test the accuracy of a ZTV in the field, although some verification will occur during the assessment of viewpoints.
- In order to handle large areas of terrain, the DTM data is based on information that does not allow detail to be distinguished below a certain level. There are also differences in the way that the software package ‘interpolates’ between heights in the calculations made.

1.2.2 ZTV Methodology

The ZTV maps presented in the EIAR show visibility of the proposed wind farm using the half blade height of the wind turbines as points of reference. The maps also show the visibility of the proposed wind farm in addition to visibility of other existing and permitted wind farms in the area. The area covered by the ZTV maps has a radius of 20 kilometres from the outer-most proposed turbines.

The 2006 DoEHLG Wind Energy Development Guidelines for Planning Authorities require that ‘*in areas where landscapes of national or international renown are located within 25 km of a proposed wind energy development, the Zone of Theoretical Visibility should be extended as far (and in the direction of) that landscape*’. A mapping investigation determined that no landscapes of National or International renown are located between 20 to 25 km from the Proposed Development and the extension of the ZTV beyond 20 km from the outer-most proposed turbine is not warranted. Therefore, 20 km was deemed a sufficient and appropriate boundary for the location and scale of the Proposed Development and any assessment of landscape and visual effects.

ZTV maps assume a worst-case or ‘bare ground’ scenario, i.e. no land-cover. They represent visibility of the proposed wind farm in the absence of all natural and manmade features from the landscape, including vegetation, houses and other buildings. In reality, such features will restrict or limit visibility of the wind turbines, due to the screening effects of vegetation, for example forestry and road-side hedgerows and trees, and buildings, particularly within towns and villages.

Separate colour bands are used on each ZTV map to indicate the number of turbines which will potentially be visible to half blade i.e. only half a blade might be visible over the topography as

opposed to seeing a full turbine. The legend on each map shows the number of visible turbines for each corresponding colour, which are as follows:

- > Teal: 1-4 turbines visible
- > Yellow: 5-9 turbines visible
- > Navy: 10-13 turbines visible

1.3 Viewpoint Assessment

1.3.1 Viewpoint Identification

The LVIA conducted in this chapter is part of an ELAR and the turbines of the Dunneill Wind Farm development are already built and operational. As the turbines are already constructed, there is no requirement to super-impose the Dunneill Wind Farm development turbines within the viewpoints as would be normal procedure, as the turbines are already existent within the landscape and images. Assessment of likely significant effects is based on the actual visibility of the project as determined by site visits and aided by the viewpoints assessments.

The viewpoints or photo locations were selected following guidance contained in the DoEHLG *‘Wind Energy Development Guidelines for Planning Authorities’* (2006), the *‘Guidelines for Landscape and Visual Impact Assessment’* (2013) and in the *‘Visual Representation of Wind Farms’* (Scottish Natural Heritage, 2017). The selection of photo locations is designed to give a representative range of views of the Proposed Development.

Key visual receptors were the focus of selection of viewpoint locations. In addition, viewpoints were selected in close proximity to the proposed turbines, where turbines are likely to be most visible and hence visual effects may be greatest.

Viewpoints were chosen having regard to the SNH Guidance (2017) which advises that a range of views should be shown at a range of distances and aspects, as well as at varying elevations and showing both where the development will be completely visible as well as partially visible.

1.4 Landscape and Visual Impact Assessment Methodology

1.4.1 Identification of Landscape Receptors

The landscape receptors were selected following guidance contained the *‘Guidelines for Landscape and Visual Impact Assessment’* (2013) and in the *‘Visual Representation of Wind Farms’* (Scottish Natural Heritage, 2017).

The following landscape receptors are identified in the landscape baseline:

- **Landscape Designations and Policy Context** - Policy setting pertaining to the location and nature of the site from a landscape perspective based on:
 - Sligo County Development Plan 2017-2023
- **Landscape Character of the Dunneill Wind Farm Development Site** - A description of the physical landscape and characteristics of the site and its immediate landscape setting, this includes the following considerations:
 - Landscape characteristics based upon findings from a site visit conducted in 2021.
 - A review of the Wind Energy Development Guidelines (DoEHLG, 2006; DoHPLG, 2019) and siting guidance relating to the landscape characteristics of the site.
- **Landscape Character of the wider LVIA Study Area** - A description of landscape in a wider setting including the identification of designated Landscape Character Areas (LCAs), as well as Historic Landscape Characterisation located within 15 km of the Dunneill based upon:
 - Landscape Character Assessment, Sligo County Council (2017-2023).

All other landscape receptors were selected for further assessment of landscape effects.

1.4.2 Assessing Landscape Effects

The methodology uses qualitative methods in order to arrive at an assessment, which is based on the Landscape and Landscape Assessment (2000) Guidelines as well as the GLVIA (2013), and the DoEHLG (2006) Guidelines were also taken into account.

Landscape effects can be described as changes which affect the landscape as a resource. This includes how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects and its landscape character. Landscape effects also relate to changes in the structure of the landscape. Under the GLVIA (2013), the assessment of likely significant effects on landscape receptors includes a judgement on both the sensitivity of the receptor as well as magnitude of the change.

1.4.2.1 Assessing Landscape Sensitivity

Landscape Sensitivity, which is described in the GLVIA (2013) as a combination of the landscape's susceptibility to change as well as the value attached to the landscape receptor.

Susceptibility to change can be described as the ability of the landscape receptor (either the overall character, quality of the landscape or a particular landscape feature) to accommodate the Proposed Development without undue consequences for the maintenance of the baseline (existing) landscape and/or the aims of landscape planning policies and strategies. Table 1-1 below presents differing description criteria for susceptibility to change.

Table 1-1 Description criteria for susceptibility to change

Susceptibility of landscape receptor to change	Description and example criteria
High	Landscape receptors where the overall character of the landscape receptor or the nature of the individual landscape receptor causes it to have a high susceptibility to change considering its inherent characteristics and where the landscape receptor has a low ability to accommodate the proposed change without undue consequences for the maintenance of its landscape character, and/or its quality or condition, and/or its particular aesthetic and perceptual aspects, and where such change is not in compliance with planning policies/strategies
Medium	Landscape receptors where the overall character of the landscape receptor or the nature of the individual landscape receptor causes it to have a medium susceptibility to change considering its inherent characteristics and where the landscape receptor has a moderate ability to accommodate the proposed change without undue consequences for the maintenance of its landscape character, and/or its quality or condition, and/or its particular aesthetic and perceptual aspects, with consideration given to planning policies/strategies.
Low	Landscape receptors where the overall character of the landscape receptor or the nature of the individual landscape receptor causes it to have a low susceptibility to change considering its inherent characteristics and where the landscape receptor has a strong ability to accommodate the proposed change without undue

	consequences for the maintenance of its landscape character, and/or its quality or condition, and/or its particular aesthetic and perceptual aspects, and where such change may be in compliance with planning policies/strategies
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Landscape value is a combination of values which are assessed in the landscape baseline, combining any formal landscape designations, and, where there are no designations, judgements based on individual elements of the landscape receptor, for example particular landscape features, notable aesthetic, perceptual or experiential qualities, and combination of these contributors. In addition, it is noted that the GLVIA states that “*there should not be over-reliance on designations as the sole indicator of value*”, and the assessments of landscape value undertaken in this report include consideration of various elements that contribute to landscape value of specific receptors, using best practice standards and professional judgement. Where this occurs, landscape value will be judged based on clearly stated criteria. Table 1-2 below presents differing description criteria for landscape value.

Table 1-2 Description criteria for landscape value

Value attached to Landscape elements	Description and example criteria
High	Landscape receptors forming part of designations (e.g. areas of amenity, scenic routes/views) in the development plan, or at a national or international level, or landscape receptors not designated but where the receptor is judged to be of equivalent value using clearly stated criteria including wildness, naturalness, very strong cultural heritage or natural heritage associations and/or very high recreational value.
Medium	Landscape receptors where value is not formally designated but are of value as good examples of high quality, intact landscapes or landscape features and are deemed to be of relatively high scenic quality. Landscapes or landscape receptors that contain some rare elements, include areas or features which are wild or have a sense of naturalness, strong cultural associations or which have recreational value.
Low	Landscapes that are not formally designated and considered as modified. Areas which do not have particularly scenic qualities, do not include rare elements or landscape features and do not have strongly evident cultural or heritage associations.

In combining the assessment of the landscape value of a landscape receptor with the susceptibility to change of that receptor, it is noted here that a judgement of high landscape value does not necessarily imply that this receptor has a high susceptibility to change, and it is emphasised that this relationship is complex. The combination of these, which determines the landscape sensitivity, is undertaken using professional judgement with the rationale for judgements clearly explained in the description of the assessment of effects or in the baseline study. On this basis landscape receptors have been assigned one of the four following sensitivity ratings:

- > Very High
- > High
- > Medium
- > Low

No table is provided for the description of these different classifications of landscape sensitivity as the relationship between susceptibility to change and landscape value is inherently complex and not suitable to concise definitions. It is noted that sensitivity classifications are generally guided by local and national planning policy, particularly for Landscape Character Areas and County Policy in relation to these, as well as County Wind Energy Policy. However, it is noted that in cases where local variations in landscape receptors merit a smaller scale focused assessment that may differ from the policy this is undertaken using professional judgement and is clearly explained in the main body of the report.

1.4.2.2 Assessing Magnitude of Change in the Landscape

The magnitude of change in each landscape character area is a combination of the visual presence - size and scale - of the change, the extent of the area to be affected, and the duration and reversibility of the effect. The magnitude of change for each landscape character area was assessed using the definitions outlined in Table 1-3 below.

Table 1-3 Magnitude of Landscape Change Assessment Criteria

Magnitude of Change	Description
Substantial	Where a landscape will experience the loss of key landscape features or the introduction of uncharacteristic additions over a large area. The changes to the landscape are prominent and large in scale. The level of change has an effect on the overall landscape character. The effects are likely long term and may be irreversible.
Moderate	A more limited loss of or change to landscape features over a medium extent which will result in some change to landscape features and aesthetics. Could include the addition of some new uncharacteristic features or elements that would lead to the potential for change in landscape character in a localised area or part of a landscape character area. Would include moderate effects on the overall landscape character that do not affect key characteristics. The effects could be long to medium term and/or partially reversible.
Slight	The loss of or change to landscape features of limited extent, or changes to landscape character in smaller areas. Changes would not affect key characteristics. The addition of any new features or elements to the landscape would only result in low-level changes to the overall aesthetics of the landscapes. Changes to the landscape are more evident at a local level and not over a wide geographical area. The effects could potentially be medium to short term and/or reversible.
Negligible	A change affecting smaller areas of landscape character including the loss of some landscape elements or the addition of features or elements which are either of low value or hardly noticeable. The effects could be short term and/or reversible.

1.4.2.3 Landscape Effects Assessment Matrix

Table 1-4 below shows the significance of landscape effects, arrived at by combining the landscape receptor sensitivity and the magnitude of change classifications. Landscape receptor sensitivity is shown in the left-hand first column and magnitude of landscape change is shown in the first row at the top of the table. This table is used as an indicative tool to assist in determining the significance of landscape effects. In different circumstances differing levels of mitigating factors may ultimately result in a different determination of the level of significance. The significance of a landscape effect is based on a balance

between the sensitivity of the receptor and the magnitude of effect. The significance of landscape effect is arrived at using a combination of the matrix shown in Table 1-4 and Table 1-5 below.

Table 1-4 Landscape effects significance assessment matrix

	Substantial	Moderate	Slight	Negligible
Very High	Major	Major/Moderate	Moderate	Moderate/Minor
High	Major/Moderate	Moderate	Moderate/Minor	Minor
Medium	Moderate	Moderate/Minor	Minor	Minor/Negligible
Low	Moderate/Minor	Minor	Minor/Negligible	Negligible

The determination of significance uses a seven-point scale, ranging from Major to Negligible. This seven-point scale is translated to the EPA impact assessment classifications of significance, as outlined in Table 1-5 below.

Table 1-5 EPA Impact Assessment Significance Classification for Landscape Effects

Matrix Classification Significance	EPA Significance Classification	EPA (2022) Definition of Significance
Major	Profound	An effect which obliterates sensitive characteristics
Major/Moderate	Very significant	An effect, which by its character, magnitude, duration or intensity alters most of a sensitive aspect of the environment
Moderate	Significant	An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Moderate/Minor	Moderate	An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
Minor	Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
Minor/Negligible	Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Negligible	Imperceptible	An effect capable of measurement but without significant consequences

1.4.3 Assessing Visual Effects

Visual effects relate to changes in views and visual amenity of the surroundings of individuals or groups of people. These may result from changes in content and character of views as a result in changes to the landscape. The assessment of visual effects is based on views shown in the viewpoints and the potential visibility indicated by the ZTV maps as well as actual visibility on the ground.

It should be noted that in assessing visual effects, there are different types of visual effects:

- **Visual obstruction:** This occurs when there is an impact on a view which blocks the view.
- **Visual intrusion:** This occurs when there is an impact on a view but which does not block the view.

Due to the nature of the development and the appearance of wind turbines, visual intrusion occurs more frequently than obstruction.

The likely significant effects of the Proposed Development in terms of visual and landscape effects are informed by the ZTV and viewpoints. The significance of the effect on visual receptors is a combination of the sensitivity of the receptor as well as the magnitude of the change.

1.4.3.1 Visual Receptor Sensitivity

Visual Receptor Sensitivity depends on the occupation or activity of the people, as well the extent to which the attention is focused on views and visual amenity, according to the GLVIA Guidelines (2013). Visual receptor sensitivity is assessed as either being Very High, High, Medium, or Low, based on the definition of descriptions and examples set out in Table 1-6 below.

Table 1-6 Visual Receptor Sensitivity Assessment Criteria

Sensitivity of Visual Receptor(s)	Description
Very High	Included in this category are viewers that are primarily focused on views from this particular location, such as visitors to popular destinations identified for their outstanding views. Residents in close proximity who have primary views of a scenic quality in the direction of the development.
High	Includes viewers at designated views or landscapes. Viewers such as residents in close proximity to the viewpoint who have primary views that will be in the direction of the development that may not necessarily be of a particularly scenic quality; viewers at well-known heritage or popular tourist or recreational areas, viewers along scenic or tourist routes.
Medium	Includes viewers who may have some susceptibility to a change in view. Viewers such as residents in medium proximity but who do not have views focused in the direction of the Proposed Development or whose views are not of a particularly scenic quality; those from views which are not designated but may have local recreational uses or those travelling along routes or at view which are considered moderately scenic.
Low	Includes viewers engaged in activities where the focus is not on the landscape or view. These including those travelling along a busy route, viewers at work or engaged in sport not related to views or experience of the landscape.

Viewpoints are specific locations which are representative of key visual receptors. The viewpoint assessment tables in Appendix 13-3 consider all receptors represented in the determination of the visual receptor sensitivity rating for each viewpoint. This determination takes a balanced approach considering the types, sensitivities, and quantities of visual receptors represented. The sensitivity rating given to each viewpoint in Appendix 13-3 considers both the susceptibility of the visual receptors represented as well as the value attached to the available views at that particular location.

1.4.3.2 Magnitude of Visual Change

The magnitude of the visual change resulting at each viewpoint is a combination of scale of the change, the extent of the area to be affected and the duration and reversibility of the effect, determined by reviewing the viewpoint imagery for each viewpoint. The magnitude of change is determined in accordance with the definitions and descriptions included in Table 1-7 below.

Table 1-7 Magnitude of Visual Change Assessment Criteria

Magnitude of Change	Description
Substantial	Substantial change, where the proposals would result in large-scale, prominent or very prominent change, leading to substantial obstruction of existing view or complete change in character and composition of the baseline through removal of key elements or addition of uncharacteristic elements which may or may not be visually discordant. This includes viewpoints where the Proposed Development is fully or almost fully visible over a wide extent, at close proximity to the viewer. This change could be long term or of a long duration.
Moderate	The change in the view may involve partial obstruction of existing view or partial change in character and composition of the baseline through the introduction of new elements or removal of existing elements. Likely to occur at locations where the development is partially visible over a moderate or medium extent, and which are not in close proximity to the development. Change may be readily noticeable but not substantially different in scale and character from the surroundings and wider setting.
Slight	The proposals would be partially visible or visible at sufficient distance to be perceptible and result in a low level of change in the view and its composition and a low degree of contrast. The character of the view may be altered but will remain similar to the baseline existing situation. This change could be short term or of a short duration.
Negligible	Any change would only be barely distinguishable from the status quo “do-nothing scenario” in the surroundings. The composition and character of the view would be substantially unaltered, approximating to little or no change.

1.4.3.3 Visual Effects Assessment Matrix

Table 1-8 below shows the significance of visual effects, arrived at by combining the visual receptor sensitivity and the magnitude of change classifications. Visual receptor sensitivity is shown in the left-hand first column and magnitude of visual change is shown in the first row at the top of the table. This table is used as an indicative tool to assist in determining the significance of visual effects. In different circumstances differing levels of mitigating factors may ultimately result in a different determination of the level of significance (see below). The significance of a visual effect is based on a balance between the sensitivity of the receptor and the magnitude of effect. The significance of visual effect is arrived at using a combination of the matrix shown in Table 1-8 and Figure 1-2 below.

Table 1-8 Visual Effects Significance Assessment Matrix

	Substantial	Moderate	Slight	Negligible
Very High	Major	Major/Moderate	Moderate	Moderate/Minor
High	Major/Moderate	Moderate	Moderate/Minor	Minor

	Substantial	Moderate	Slight	Negligible
Medium	Moderate	Moderate/Minor	Minor	Minor/Negligible
Low	Moderate/Minor	Minor	Minor/Negligible	Negligible

The determination of significance uses a seven-point scale, ranging from Major to Negligible. This seven-point scale is translated to the EPA impact assessment classifications of significance, as outlined in Table 1-9 below.

Table 1-9 EPA Impact Assessment Significance Classification for Visual Effects

Matrix Classification Significance	EPA Significance Classification	EPA (2022) Definition of Significance
Major	Profound	An effect which obliterates sensitive characteristics
Major/Moderate	Very significant	An effect, which by its character, magnitude, duration or intensity alters most of a sensitive aspect of the environment
Moderate	Significant	An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Moderate/Minor	Moderate	An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
Minor	Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
Minor/Negligible	Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Negligible	Imperceptible	An effect capable of measurement but without significant consequences

1.4.3.4 Residual Visual Effect

After determining the significance of the visual effect using the above visual effects assessment matrix and significance graph, mitigating factors are taken into consideration to arrive at the final residual effect. In some cases, mitigating factors merit a reduction in classification.

1.4.4 Determination of Residual Landscape and Visual Effects

The matrices and tables above are excellent tools to aid professional judgement in the determination of the significance of an effect. They are useful in that they provide a transparent, objective, structure to the process of balancing sensitivity and magnitude of change. In the context of the determination of visual effects, the formulaic process created by the use of the matrix above provides an indicative initial assessment, which is clearly demonstrated in the viewpoint assessment tables in Appendix 13-3.

However, over-reliance on the formulaic process, which is heavily influenced by the definitions of sensitivity and magnitude of change contained in Table 1-6 and

Table 1-7 above, can lead to a failure to properly account for the full range of circumstances and factors at play in the determination of the significance of a visual effect (see section 3.35, GLVIA3, 2013). A wide range of factors, mitigating or otherwise, can factor into such a determination, and it is not possible to capture the complexity involved in balancing all considerations within the necessarily limited definitions contained in these tables. This then naturally results in circumstances whereby the process of the determination of significance using the formulaic method involved with the matrix shown in

Table 1-8 can result in misrepresentations of the significance of visual effects. It is only with professional judgement, and narrative descriptions of effect, that such complexity can be integrated into the determination of significance. Therefore, the formulaic methods based upon the matrix presented above is combined with professional judgement in the determination of significance. This is illustrated in Figure 1-2 below where the professional judgment of the competent expert is used to properly determine the significance of an effect taking all considerations into account.

A focus is placed upon the narrative description of effects (see section 3.36, GLVIA3, 2013) given the naturally subjective nature of the significance determination process, particularly in relation to visual effects, ensuring that the rationale for the overall judgement is clear (see sections 3.28-3.29, GLVIA3, 2013). The comprehensive assessment of viewpoints included in Appendix 13-3 aims to provide a transparent and robust determination of residual visual effects utilising the graph in Figure 1-2 below in combination with a clear and logical narrative.

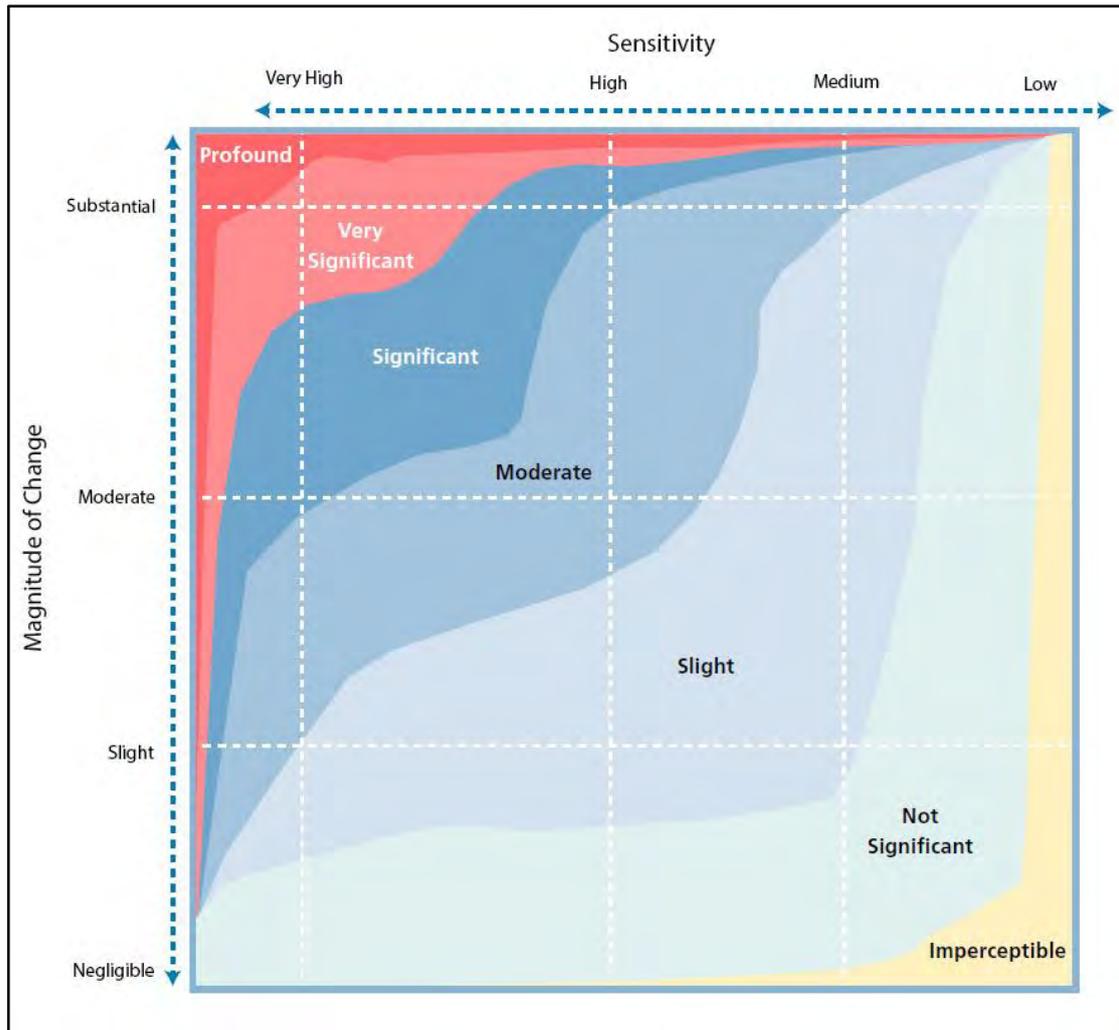


Figure 1-2 Visual Effect Significance Graph (adapted from EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, 2022)

1.4.5 Assessing Cumulative Landscape and Visual Effects

1.4.5.1 Cumulative Landscape Effects

The Nature Scot 2021 publication *Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments* identifies two principal areas of cumulative landscape effects, on the physical fabric of the landscape and on the landscape character, which state:

- Cumulative effects on the **physical fabric** of the landscape arise when two or more developments affect landscape components such as woodland, dykes, rural roads or hedgerows. Although this may not significantly affect the landscape character, the cumulative effect on these components may be significant – for example, where the last remnants of former shelterbelts are completely removed by two or more developments.
- Cumulative effects on **landscape character** arise when two or more developments introduce new features into the landscape. In this way, they can change the landscape character to such an extent that they create a different landscape character type, in a similar way to large scale afforestation. That change need not be adverse; some derelict or degraded landscapes may be enhanced as a result of such a change in landscape character.

Potential changes to the physical fabric outlined above are predominantly restricted to the Proposed Development site and the LCAs in which the site is located. Therefore, these landscape receptors will be assessed for cumulative landscape effects on the physical fabric of the landscape arising from the Proposed Development.

Cumulative effects on the landscape character will be assessed in the Landscape Character Areas (LCAs) that have theoretical visibility of the Proposed Development with particular emphasis on the LCA in which the proposed turbines will be located.

Table 1-10 below taken from *Cumulative Impact of Wind Turbines on Landscape and Visual Amenity* (Carmarthenshire County Council, 2013) will be used to assign a current status of the LCAs and whether the addition of the proposed turbines will change the status of any of the LCAs.

Table 1-10 Landscape types with regard to wind turbine development descriptions (Source Guidance on cumulative impact of wind turbines on landscape and visual amenity (Carmarthenshire County Council, 2013))

	Landscape Status	Description
1	Landscape character area with no wind turbines	No turbines within an area and not visible except at a distance where they are very small or inconspicuous.
2	Landscape character area with occasional wind turbines in it and/or intervisible in another landscape character area/s	Turbines are visible but are not at a scale, number, spacing or extent that makes them a defining/key characteristic. Turbines might be seen occasionally at close quarters but more often within background views.
3	Landscape character area with wind turbines	Turbines are located and visible and are at a scale and/or a spacing that makes them one of the defining/key characteristics. Turbines might be seen in the foreground, mid-ground or background. However, there would be other key characteristics which would be strong and there would be sufficient separation between turbines for views without turbines and other characteristics remaining dominant in these parts of the area.
4	Wind turbine landscape	Turbines are frequent and may include extensive wind farms and are the dominant, defining characteristic but there is separation between groups of turbines. However, within these areas wind turbines are likely to be visible.
5	Windfarm	Landscape fully developed as a wind farm with no clear separation between groups of turbines.

Cumulative landscape effects are included in LCA Assessment Tables in Appendix 13-2 and summarised in the LVIA Chapter of the EIAR.

1.4.5.2 Cumulative Visual Effects

For this assessment, the Nature Scot (2021) definition of cumulative effects as additional changes caused by a Proposed Development in conjunction with other similar developments, is used, however, this assessment also considers other types of developments. The definition in the DoEHLG Guidelines (2006) defines cumulative impacts in terms of wind farms, as the perceived effect on the landscape of two or more wind energy developments visible from any one place.

The GLVIA (2013) and Nature Scot (2021) guidance also note that cumulative visual effects can be experienced in combination, where two or more developments are visible from one viewpoint, either

simultaneously or in succession, as well as sequentially, where a viewer moves to another viewpoint or along a transport or recreational route and sees the same or different developments. These types of cumulative visual effects are considered in the assessment of visual effects in Appendix 13-3. The viewpoints illustrate combined visibility and analysis of the viewpoint, as well as site visits and field work undertaken allows sequential visibility to be assessed.

The guidance on cumulative effects given in the DoHPLG 2019 ‘*Draft Revised Wind Energy Development Guidelines*’ relating to the Proposed Development site is as follows:

- *“Similarity in the siting and design approach is preferred where a number of wind energy developments are located in the same landscape character area, particularly within the same viewshed. However, an alternative approach where a particular aesthetic effect is sought may be acceptable.*
- *Different wind energy developments can appear as a single collective unit if located near each other.*
- *It is preferable to avoid locating turbines where they can be seen one behind another, when viewed from highly sensitive key viewpoints (for example, viewing points along walking or scenic routes, or from designated views or prospects), as this results in visual stacking and, thus, confusion. This may not be critical, however, where the wind energy development to the rear is in the distant background.*
- *Wind energy developments within relatively close proximity to one another, while in different landscape character contexts, may be so close as to be within the same visual unit and, therefore, should involve the same siting and design approach.”*

The SNH 2017 publication *Siting and Designing Wind Farms in the Landscape* states that ‘*introducing turbines that are not similar in form, design, colour and scale may increase visual complexity and clutter*’.

Therefore, the cumulative assessment will concentrate on the following issues:

- Whether the proposed turbines increase the spatial extent of turbines in the view
- Whether the different wind energy developments can appear as a single collective unit or there is separation
- Whether ‘visual stacking’ occurs
- Whether the contrast of different size and design between different wind developments creates visual clutter.

As cumulative visual effects depend on the aspect from which the turbines will be seen various viewpoints were selected to give a thorough overview of the how the proposed turbines will appear in conjunction to turbines already present.

The assessment of cumulative effects was included in the viewpoint assessment tables in Appendix 13-3 and summarised in the LVIA Chapter of the EIAR.



APPENDIX 13-2

LANDSCAPE CHARACTER AREA ASSESSMENTS

1. LANDSCAPE CHARACTER ASSESSMENT TABLES

1.1 County Sligo

Provisional LCA – Easky Kingsmountain	
Distance from site to Nearest/Furthest Area of LCA	The Existing Dunneill wind turbines are located within this LCA.
LCA Key Characteristics (provisionally prepared by MKO)	The landscape is mainly shaped by mountainous topography, low lying vegetation and coniferous forestry plantation, which provides for low quality pastureland uses. Several visual characteristics, including scenic routes, visually vulnerable areas and sensitive rural landscapes are common in this area. The Ox Mountains are the largest topographical feature in this area and occupy much of the landscape. Wind farms are located in the northern vista.
Landscape Sensitivity to Wind Farm Development	<p>The Dunneill Wind Farm is located within an area designated as a ‘Normal Rural Landscape’ in the SCDP. The SCDP describes Normal Rural Landscapes as <i>“areas with natural features (e.g. topography, vegetation) which generally have the capacity to absorb a wide range of new development forms”</i></p> <p>The SCDP also states that <i>“the mountainous landscapes and exposed location on the western seaboard create suitable conditions for wind energy developments. Pressure for future wind farm development is likely to be concentrated in upland and coastal areas, particularly where energy providers can access the national electricity grid.”</i></p> <p>In terms of sensitive landscape features within this LCA there are a large number of Visually Vulnerable Areas designated in the SCDP, as well as a number of designated Scenic Routes.</p> <p>In consideration of the provisional landscape character assessment undertaken by MKO, as well as the overall policy context which highlights a number of sensitive landscape features within this LCA, as well as providing an overall supportive policy context for renewable energy development within this landscape, the sensitivity of the Easky Kingsmountain LCA is deemed to be Medium.</p>
Visibility of the Proposed Development within the LCA	Theoretical visibility of the Dunneill wind farm is very limited within this LCA, as a result of the topography surrounding the Dunneill site itself. Theoretical visibility is therefore limited to locations in close proximity to the site, on the north-western side of the ridgelines that define the visual units within this LCA. Viewpoints 5, 6, 7, and 8 are located within this LCA, these viewpoints are all located in close proximity to the site.

Cumulative Baseline	The existing Kingsmountain wind farm is also located within this LCA, approximately 2.1km to the south-west of the Dunneill Wind farm. In addition, a number of other wind farms in the Inland Bog Basin LCA, and within County Mayo are visible in parts of the southern portion of this LCA.
Cumulative Landscape Status	3. Turbines are located and visible and are at a scale and/or a spacing that makes them one of the defining/key characteristics. Turbines might be seen in the foreground, mid-ground or background. However, there would be other key characteristics which would be strong and there would be sufficient separation between turbines for views without turbines and other characteristics remaining dominant in these parts of the area.
Cumulative Landscape Effects	As seen from the Cumulative Comparative ZTV shown within the main body of the report there is very little additional visibility of wind turbines in this LCA as a result of the Dunneill Wind Farm. The continued presence of the Dunneill Wind Farm will not change the cumulative landscape status in this LCA. In addition, given the presence of other wind farms, within and visible from this LCA, the decommissioning and removal of these turbines would also not change the cumulative landscape status.
Magnitude of Change	<p>Slight: The loss of or change to landscape features of limited extent, or changes to landscape character in smaller areas. Changes would not affect key characteristics. The addition of any new features or elements to the landscape would only result in low-level changes to the overall aesthetics of the landscapes. Changes to the landscape are more evident at a local level and not over a wide geographical area. The effects could potentially be medium to short term and/or reversible.</p> <p>Given the relatively small area within which the Dunneill Wind Farm can be seen in this LCA, as indicated by the ZTV and the Viewpoints presented in Photomontage Booklet, the magnitude of change of an effect on landscape character in this LCA as a result of the continued operation of the Dunneill wind turbines is deemed to be Slight.</p>
Significance of Effect	<p>Medium x Slight = Minor = Slight (EPA, 2022)</p> <p>An effect which causes noticeable changes in the character of the environment without affecting its sensitivities</p>
Mitigating Factors	<ul style="list-style-type: none"> ➤ <i>There is no theoretical visibility from the majority of this LCA, including from the large majority of the designated scenic routes in this LCA.</i> ➤ <i>Vegetation, such as large tracts of coniferous plantation forestry, limits visibility in many places</i> ➤ <i>Areas where the turbines are actually visible (as opposed to theoretical visibility), and where the turbines appear largest, are generally concentrated within areas of large scale commercial forestry operations</i>

Provisional LCA – Inland Bog Basin	
Distance from site to Nearest/Furthest Area of LCA	The Existing Dunneill wind turbines are located approximately 200m from this LCA at their closest point and approximately 14km at their furthest point.

<p>LCA Key Characteristics <i>(provisionally prepared by MKO)</i></p>	<p>Characterised by its rugged hills and exposed plain mainly occupied with settled agriculture and peat bog production. The landscape is relatively flat, becoming more undulating to the south towards the Ox Mountains. Land cover comprises of a mixture of bogland and low-quality pastureland uses outlined by mature tree lines. Large areas of Sensitive Rural Landscape are located within this LCA.</p>
<p>Landscape Sensitivity to Wind Farm Development</p>	<p>There are large areas designated as a ‘Normal Rural Landscape’ in the SCDP within this LCA. The SCDP describes Normal Rural Landscapes as <i>“areas with natural features (e.g. topography, vegetation) which generally have the capacity to absorb a wide range of new development forms”</i>. It is also noted that there are areas designated as a Normal Rural Landscape in close proximity to the Dunneill Wind Farm, and notably so in relation to the LCA overall.</p> <p>Large areas of this LCA are designated as Sensitive Rural Landscapes, with a <i>“low capacity to absorb new development”</i>. However, it is noted that a substantial portion of the landscape area covered by the Sensitive Rural Landscape designation is comprised of cutover bog, regarding which is stated in the Wind Energy Development Guidelines (DoEHLG, 2006) to be a landscape type (Flat Peatland) with <i>“significant potential for future wind energy development.”</i></p> <p>The SCDP also states that <i>“the mountainous landscapes and exposed location on the western seaboard create suitable conditions for wind energy developments. Pressure for future wind farm development is likely to be concentrated in upland and coastal areas, particularly where energy providers can access the national electricity grid.”</i></p> <p>In terms of sensitive landscape features within this LCA there are no designated Visually Vulnerable Area within this LCA. Designated Scenic Route 49 passes through the north-eastern corner of this LCA.</p> <p>In consideration of the provisional landscape character assessment undertaken by MKO, as well as the overall policy context which highlights a lack of sensitive landscape features within this LCA, the sensitivity of the Inland Bog Basin LCA is deemed to be Low.</p>
<p>Visibility of the Proposed Development within the LCA</p>	<p>Theoretical visibility of the Dunneill Wind Farm is concentrated towards the eastern portion of this LCA, with generally open views across this LCA from locations within 8km of the Dunneill Wind Farm. Theoretical visibility is more limited further to the west and south-west from the Dunneill Wind Farm. Viewpoint 9 is located within this LCA, along the N59 National Road, the only large transport route within this LCA.</p>
<p>Cumulative Baseline</p>	<p>The existing Cloonkeelaun I, II, and III wind farms are located close to the south-eastern border of this LCA, and the existing Black Lough wind farm is also located within this LCA, approximately 6.5km to the south-west of the Dunneill Wind farm. In addition, the Kingsmountain wind farm in the Easky Kingsmountain LCA, and other wind farms within County Mayo are visible throughout this LCA.</p>
<p>Cumulative Landscape Status</p>	<p>3. Turbines are located and visible and are at a scale and/or a spacing that makes them one of the defining/key characteristics. Turbines might be seen in the foreground, mid-ground or background. However, there would be</p>

	other key characteristics which would be strong and there would be sufficient separation between turbines for views without turbines and other characteristics remaining dominant in these parts of the area.
Cumulative Landscape Effects	As seen from the Cumulative Comparative ZTV shown within the main body of the report there is no additional visibility of wind turbines in this LCA as a result of the Dunneill Wind Farm. The continued presence of the Dunneill Wind Farm will not change the cumulative landscape status in this LCA. In addition, given the presence of other wind farms, within and visible from this LCA, the decommissioning and removal of these turbines would also not change the cumulative landscape status.
Magnitude of Change	<p>Slight: The loss of or change to landscape features of limited extent, or changes to landscape character in smaller areas. Changes would not affect key characteristics. The addition of any new features or elements to the landscape would only result in low-level changes to the overall aesthetics of the landscapes. Changes to the landscape are more evident at a local level and not over a wide geographical area. The effects could potentially be medium to short term and/or reversible.</p> <p>There will be a relatively small portion of this LCA where actual visibility of the turbines at close proximity to the Dunneill Wind Farm will occur, and the majority of views of the turbines will be at a distance, within the background of views and well absorbed by the ridgelines and landform backclothing the Dunneill turbines. In consideration of these factors, as well as the viewpoint presented in Appendix 13-2, the magnitude of change of an effect on landscape character in this LCA as a result of the continued operation of the Dunneill wind turbines is deemed to be Slight.</p>
Significance of Effect	Low x Slight = Minor/Negligible = Not Significant (EPA, 2022) An effect which causes noticeable changes in the character of the environment but without significant consequences.
Mitigating Factors	<ul style="list-style-type: none"> ➤ <i>There are limited sensitive landscape receptors located within this LCA. The flat cutover peatland which makes up a large proportion of the landscape area within this LCA is considered to have a low susceptibility to change in terms of landscape character in relation to the Dunneill Wind Farm development</i> ➤ <i>Vegetation, such as large tracts of coniferous plantation forestry, limits visibility in many places</i> ➤ <i>When viewed from the N59 national road within this LCA, the turbines of the Dunneill Wind Farm appear as relatively small background elements within the view and do not increase the vertical extent of the skyline within the majority of the views from within this LCA, given the substantial topographical features that form the setting of the existing Dunneill Wind Farm from this LCA</i>

Provisional LCA – Northern Lowland	
Distance from site to Nearest/Furthest Area of LCA	The Existing Dunneill wind turbines are located approximately 1.3km from this LCA at their closest point and approximately 18.5km at their furthest point.

<p>LCA Key Characteristics <i>(provisionally prepared by MKO)</i></p>	<p>The landscape is relatively flat, gently undulating and forming the foothills of the Ox Mountains. Land cover comprises of a mixture of bogland and poor pastureland divided by well-maintained hedgerows. Large areas of Normal Rural Landscape are located within this LCA.</p>
<p>Landscape Sensitivity to Wind Farm Development</p>	<p>There are large areas designated as a ‘Normal Rural Landscape’ in the SCDP within this LCA. The SCDP describes Normal Rural Landscapes as <i>“areas with natural features (e.g. topography, vegetation) which generally have the capacity to absorb a wide range of new development forms”</i>. The vast majority of this LCA is designated as such.</p> <p>The SCDP also states that <i>“the mountainous landscapes and exposed location on the western seaboard create suitable conditions for wind energy developments. Pressure for future wind farm development is likely to be concentrated in upland and coastal areas, particularly where energy providers can access the national electricity grid.”</i></p> <p>In terms of sensitive landscape features within this LCA there are no designated Visually Vulnerable Area within this LCA. Several designated Scenic Routes pass through this LCA between the coast and the Ox Mountain range, including Scenic Route 7 which runs through a large stretch of this LCA which is in close proximity to the north of the Dunneill Wind Farm.</p> <p>In consideration of the provisional landscape character assessment undertaken by MKO, as well as the overall policy context which highlights a lack of sensitive landscape features and the designation of the vast majority of this LCA as a Normal Rural Landscape, the sensitivity of the Northern Lowland LCA is deemed to be Low.</p>
<p>Visibility of the Proposed Development within the LCA</p>	<p>Theoretical visibility of the Dunneill Wind Farm is concentrated towards the central portion this LCA, to the north and northwest of the Dunneill site. Theoretical visibility is more limited further to the west and northeast from the Dunneill Wind Farm. Viewpoints 2, 3, 4, and 10 are located within this LCA, along the designated scenic route 7. In general, within this landscape type, actual visibility is often constrained by screening elements within the landscape such as the mature hedgerows that border agricultural fields, other vegetation and treelines, and built infrastructure form the settlement pattern.</p>
<p>Cumulative Baseline</p>	<p>There are no other wind farms located within this LCA. However, the Kingsmountain wind farm in the Easky Kingsmountain LCA is visible from similar locations within the Northern Lowlands LCA as the Dunneill Wind Farm. The Cumulative Comparative ZTV also shows that there is theoretical visibility of other wind farms within the south of County Sligo and within County Mayo from locations to the south of this LCA.</p>
<p>Cumulative Landscape Status</p>	<p>2. Turbines are visible but are not at a scale, number, spacing or extent that makes them a defining/key characteristic. Turbines might be seen occasionally at close quarters but more often within background views.</p>
<p>Cumulative Landscape Effects</p>	<p>As seen from the Cumulative Comparative ZTV shown within the main body of the report there is limited additional visibility of wind turbines in</p>

	<p>this LCA as a result of the Dunneill Wind Farm. The continued presence of the Dunneill Wind Farm will not change the cumulative landscape status in this LCA. In addition, given the presence of other wind farms, within and visible from this LCA, the decommissioning and removal of these turbines would also not change the cumulative landscape status, given the presence of the existing Kingsmountain Wind Farm adjacent to the Dunneill Wind Farm.</p>
Magnitude of Change	<p>Slight: The loss of or change to landscape features of limited extent, or changes to landscape character in smaller areas. Changes would not affect key characteristics. The addition of any new features or elements to the landscape would only result in low-level changes to the overall aesthetics of the landscapes. Changes to the landscape are more evident at a local level and not over a wide geographical area. The effects could potentially be medium to short term and/or reversible.</p> <p>Given the relatively small portion of this LCA where on the ground actual visibility of the turbines at close proximity to the Dunneill Wind Farm will occur, the turbines will often be viewed at a distance, within the background of views. Considering this and the viewpoints presented in Photomontage Booklet, the magnitude of change of an effect on landscape character in this LCA as a result of the continued operation of the Dunneill wind turbines is deemed to be Slight.</p>
Significance of Effect	<p>Low x Slight = Minor/Negligible = Not Significant (EPA, 2022) An effect which causes noticeable changes in the character of the environment but without significant consequences.</p>
Mitigating Factors	<ul style="list-style-type: none"> ➤ <i>There are limited sensitive landscape receptors located within this LCA, with no Visually Vulnerable Features located within the LCA</i> ➤ <i>Vegetation, such as mature hedgerows and treelines, limits visibility in many places, as such, views of the existing wind farm are intermittent, and the turbines are seen in the background of views.</i> ➤ <i>Actual on the ground visibility of the Dunneill Wind Farm is generally concentrated in locations in closer proximity to the turbines, with large areas to the south of this LCA having no actual visibility of the turbines, or where turbines appear as very small elements within the backgrounds of views.</i>

Provisional LCA – North Coastal Plain	
Distance from site to Nearest/Furthest Area of LCA	The Existing Dunneill wind turbines are located approximately 3.6m from this LCA at their closest point and greater than 20km at their furthest point.
LCA Key Characteristics (provisionally prepared by MKO)	This area occupies the northern coastal plain of Sligo. This is a thin strip of gently undulating terrain and coastal cliffs. The landscape in this area is predominantly occupied by settled agriculture outlined by tree lines and hedgerows. Several scenic routes and visually vulnerable areas are located within this LCA.

<p>Landscape Sensitivity to Wind Farm Development</p>	<p>There are large areas designated as a ‘Normal Rural Landscape’ in the SCDP within this LCA. The SCDP describes Normal Rural Landscapes as “<i>areas with natural features (e.g. topography, vegetation) which generally have the capacity to absorb a wide range of new development forms</i>”. The vast majority of this LCA is designated as such.</p> <p>In terms of sensitive landscape features within this LCA the coastline is designated a Visually Vulnerable Area within this LCA. Views of the coastline from within this LCA will always be directed away from the Dunneill Wind Farm, except for a portion of land across Sligo Bay around Raghly point, which is located approximately 19km from the Dunneill Wind Farm. Several designated Scenic Routes pass through this LCA between the coast and the Ox Mountain range, including Scenic Route 46 which runs through a large stretch of this LCA which is in close proximity to the north of the Dunneill Wind Farm.</p> <p>In consideration of the provisional landscape character assessment undertaken by MKO, as well as the overall policy context which highlights the coastline as a sensitive landscape feature and the designation of the vast majority of this LCA as a Normal Rural Landscape, the sensitivity of the North Coastal Plain LCA is deemed to be Medium.</p>
<p>Visibility of the Proposed Development within the LCA</p>	<p>Theoretical visibility of the Dunneill Wind Farm is concentrated to the north, northwest and northeast of the Dunneill Wind Farm within this LCA. Theoretical visibility is more limited further to the west and south-west, as well as to the east from the Dunneill Wind Farm, as a result of the intervening distance and topography. Viewpoint 1 is located within this LCA, along designated Scenic Route 46, from a location to the north-east of the Dunneill Wind Farm.</p>
<p>Cumulative Baseline</p>	<p>The existing Lackan wind farm is located close to the coastline approximately 14km west of the Dunneill Wind Farm. In addition, the Kingsmountain wind farm in the Easky Kingsmountain LCA is visible in similar locations as the Dunneill Wind Farm. Other wind farms within County Sligo and County Mayo are visible to the south of this LCA.</p>
<p>Cumulative Landscape Status</p>	<p>2. Turbines are visible but are not at a scale, number, spacing or extent that makes them a defining/key characteristic. Turbines might be seen occasionally at close quarters but more often within background views.</p>
<p>Cumulative Landscape Effects</p>	<p>As seen from the Cumulative Comparative ZTV shown within the main body of the report there is limited additional visibility of wind turbines in this LCA as a result of the Dunneill Wind Farm, with only a small area of additional theoretical visibility to the north-east of the Dunneill Wind Farm. The continued presence of the Dunneill Wind Farm will not change the cumulative landscape status in this LCA. In addition, given the presence of other wind farms, within and visible from this LCA, the decommissioning and removal of these turbines would also not change the cumulative landscape status.</p>
<p>Magnitude of Change</p>	<p>Negligible: A change affecting smaller areas of landscape character including the loss of some landscape elements or the addition of features or elements which are either of low value or hardly noticeable. The effects could be short term and/or reversible.</p>

	<p>Given the relatively small portion of this LCA where on the ground actual visibility of the turbines of the Dunneill Wind Farm will occur, and the fact that the turbines will often be viewed at a distance within the background of views and well absorbed by the ridgelines and landform backclothing the Dunneill turbines, the magnitude of change of an effect on landscape character in this LCA as a result of the continued operation of the Dunneill wind turbines is deemed to be Negligible.</p>
Significance of Effect	<p>Medium x Negligible = Minor/Negligible = Not Significant (EPA, 2022) An effect which causes noticeable changes in the character of the environment but without significant consequences.</p>
Mitigating Factors	<ul style="list-style-type: none"> ➤ <i>The sensitive landscape receptors in this LCA are located along the coastline, with views of these features focussed away from the Proposed Development, save for a small area of land located approximately 19km away, where in any potential views of the Dunneill Wind Farm, turbines will appear very small.</i> ➤ <i>From locations along the designated Scenic Routes within this LCA (e.g. Viewpoint 1) the turbines appear as small distant features in the landscape.</i>



APPENDIX 13-3

VIEWPOINT ASSESSMENTS

1.

VIEWPOINT ASSESSMENT TABLES

VP No.	Description	Grid Ref.
1	View from the L-2204 local road in the townland of Corkagh More, approximately 7km northeast of the nearest turbine. This viewpoint is also located along Scenic Route 46.	E 549,318 N 834,733
2	View from the N59 in the townland of Lugdoon, approximately 4km northeast of the nearest turbine. This viewpoint is also located along Scenic Route 7.	E 547,188 N 833,043
3	View from the N59 in the townland of Ballyeeskeen, approximately 3.2km northeast of the nearest turbine. This viewpoint is also located along Scenic Route 7.	E 544,963 N 833,495
4	View from a local road in the townland of Doonbeakin, approximately 440 meters north of the nearest turbine. This viewpoint is also located along Scenic Route 49 and the Sligo Way and is located within a Sensitive Rural Landscape Area. > Viewpoint 4A is directed south > Viewpoint 4B is directed north	E 545,193 N 829,447
5	View from a local road in the townland of Ballyglass, approximately 250 meters east of the nearest turbine. This viewpoint is also located along Scenic Route 49 and the Sligo Way and is located within a Sensitive Rural Landscape Area.	E 544,705 N 829,290
6	View from the L-2702 local road in the townland of Crowagh, approximately 1km west of the nearest turbine. This viewpoint is also located along Scenic Route 49 and the Sligo Way and is located within a Sensitive Rural Landscape Area.	E 543,471 N 829,163
7	View from the L-2702 local road in the townland of Crowagh, approximately 1.7 km southwest of the nearest turbine. This viewpoint is also located along Scenic Route 49 and the Sligo Way and is located within a Sensitive Rural Landscape Area.	E 543,936 N 827,355
8	View from the N59 in the townland of Owenbeg, approximately 6.2 km northwest of the nearest turbine. This viewpoint is also located within a Sensitive Rural Landscape Area.	E 537,986 N 831,528
9	View from the R297 in the townland of Knockacullen, approximately 4.2 km northwest of the nearest turbine in the Village of Dromore West.	E 542,679 N 833,978

1.1

Visual Effects: Mitigation Factors:

The locations chosen for viewpoints follow a detailed and extensive process including review of baseline information, site visits and high-quality photo taking at multiple locations within the LVIA study area. Many locations, which based on a desktop review had the potential for views of the site, had complete intervening screening or were screened to such an extent that the development of viewpoint

imagery was not considered useful in terms of the assessment process i.e. little or no visibility towards the Dunneill wind farm development. It is therefore considered important to describe the nature of the site and surrounds in order to provide context for this and avoid repetition in the viewpoint assessment tables below.

In general, mountain moorland wind farm sites tend to be capable of accommodating suitably designed wind farm projects of scale. The highly vegetated farmland landscape and abundance of coniferous forestry that surround the site provide lots of screening and has the capacity to significantly mitigate likely visual effects in close proximity to the site. Key reasons enabling the Proposed Development to be effectively absorbed by the landscape of the site and surrounding area are outlined below and are evident in the viewpoint imagery:

➤ **Strategic Siting – of the Dunneill Wind Farm Development within surrounding topographical features**

The mountainous topography of the Dunneill site and the surrounding landscape of the Ox Mountains contributes to the landscape’s capacity to accommodate a wind farm. The heightened elevated lands of the Ox Mountains that surround the site to the south and east screen the Dunneill Wind Farm from a large part of the LVIA Study Area. The 2019 (DoEHLG), suggests the suitable location for wind farm development in Mountain Moorland would be acceptable on ridges and peaks or lower down on sweeping mountainsides, as is the case with the Dunneill site. Furthermore, the ZTV suggests that there is limited theoretical visibility of the Dunneill turbines to the south and east within the study area. Due to the mountainous topography to the south and east, and the flatter plain to the north, all 9 viewpoints were taken from within 7km of the Dunneill development, as it is deemed visibility beyond 7km will be indiscernible.

➤ **Screening from surrounding landscape elements - commercial forestry**

Stands of coniferous plantation forestry are a prominent landscape feature of the Dunneill site and the surrounding landscape. Located between visual receptors and the turbines, these and other vegetational elements of the landscape provide screening, obscuring views towards the turbines or making those views intermittent in nature. In close proximity to the site, mature coniferous forestry reduces the potential for clear and open views of the turbines and this vegetation will help to screen the majority of the turbines from view, especially for those travelling along designated scenic routes in close proximity to the site. In areas where theoretical visibility is indicated on the ZTV map, actual visibility on the ground is diminished by screening factors such as this commercial forestry, as was evident in the viewpoints presented below.

➤ **The Dunneill Development does not obstruct landscape views of the Sligo coastline and does not materially impact scenic amenity attributed to the coast.**

Many valuable scenic views and scenic routes located in the LVIA study area, and within the ZTV, are predominantly attributed to the coastal sector of the region, providing significant amenity for recreation and tourism. Valuable views are principally focussed in an offshore direction towards the coastline and the ocean, not inland towards the Dunneill development. In addition, the siting of the turbines within a location framed by the surrounding ridgelines results in turbines located in the background of any inland views, particularly views from the coastal section of the LVIA study area to the north and west of the site. The Dunneill turbines will not materially impact any sensitive scenic amenities attributed to the coast.

Viewpoint 1 – Corkagh More			
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View from the L-2204 local road in the townland of Corkagh More. ➤ This viewpoint is located along Scenic Route 46. ➤ Approximately 7km northeast from the nearest turbine. ➤ Grid Reference: E549318, N834733 ➤ No. of turbines visible: 13/13 		
LCA and Sensitivity	North Coastal Plain (MKO)- Medium Landscape Sensitivity	Visual Receptor(s) and Sensitivity	Scenic Route (SR 46) – High Residents - Medium Road Users – Medium
Baseline Description	<p>The image was taken along the L-2204 local road looking south in front of a row of residential dwellings. This view was taken from a slightly elevated position looking out across a valley characterised by agricultural fields outlined by hedgerows and treelines. One-off residential dwellings and farmhouses are scattered throughout the view. From this viewpoint location, the landscape appears to slope upwards towards the Ox Mountains in the skyline. Vertical elements such as electricity powerlines are dotted throughout much of this view. The character of this view is rural in nature.</p>		
Viewpoint Description	<p>All thirteen turbines will be visible from approximately mid-hub and blade tip in the centre of this view. The coniferous forestry plantation in the background of the view restricts visibility of the turbines. Although the horizontal extent of the development is a medium-scale extent, the mature vegetation present in the background and the distance from this viewpoint location to the turbines restricts visibility of the turbines. Even in clear weather conditions, the turbines are only slightly visible and are readily absorbed into the rural landscape setting.</p>		
Cumulative Effects	Cumulative visual effects do not arise in this viewpoint.		
Sensitivity of Visual Receptor(s)	<p>High: Includes viewers at designated views or landscapes. Viewers such as residents in close proximity to the viewpoint who have primary views that will be in the direction of the development that may not necessarily be of a particularly scenic quality; viewers at well-known heritage or popular tourist or recreational areas, viewers along scenic or tourist routes.</p> <p>This Viewpoint is located along a designated scenic route, with open expansive views of a scenic nature in the direction of the Dunneill development.</p>		
Magnitude of Change	<p>Slight: The proposals would be partially visible or visible at sufficient distance to be perceptible and result in a low level of change in the view and its composition and a low degree of contrast. The character of the view may be altered but will remain similar to the baseline existing situation. This change could be short term or of a short duration.</p>		
Significance of Effect	<p>High X Slight = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends</p>		
Mitigation Factors	<ul style="list-style-type: none"> ➤ Screening of the turbines by local topography and vegetation 		

Viewpoint 1 – Corkagh More	
	<ul style="list-style-type: none"> ➤ Coherent wind farm layout with no other permitted or proposed projects anticipated from this view. ➤ Intervening distance (c 7 km) reduces the horizontal and vertical extent of the wind farm within this view. ➤ Sparsely populated local road, hence very few residential visual receptors. ➤ View of turbines is adjacent to the direction of travel. Hence, the turbines will not be in the direct line of vision of road users.
Residual Effect (incl. mitigating factors)	<p>Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.</p>

Viewpoint 2 - Lugdoon			
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View from the N59 in the townland of Lugdoon. ➤ This viewpoint is located along Scenic Route 7 and the Wild Atlantic Way. ➤ Approximately 4km northeast of the nearest turbine. ➤ Grid Reference: E547188, N833043 ➤ No. of turbines visible: 8/13 		
LCA and Sensitivity	Northern Lowland (MKO)- Low Landscape Sensitivity	Visual Receptor(s) and Sensitivity	Scenic Route (SR 7) – High Residents – Medium Tourist Designation (Wild Atlantic Way) – High
Baseline Description	This view was taken from the N59 at the entrance of the Church of the Immaculate, Templeboy. The foreground of the view shows the church and the car park to the church. The car park is lined by a concrete wall approximately 1 meter in height. Behind this, arable grass fields outlined by mature treelines and hedgerows is seen. The topography within much of the view is undulating, as this view is located at the northern foothills of the Ox Mountains. Vertical elements such as electricity poles and powerlines are common vertical elements within much of this view.		
Viewpoint Description	Three turbines from the southern cluster will be visible from approximately mid-hub. The remaining five turbines will be visible from approximately mid-blade but are significantly screened by the vegetation in the background view. The mature vegetation found within the view and the undulating topography restricts visibility of the turbines. From this viewpoint location, the turbines do not appear dominant and are seen as a coherent cluster of turbines behind the vegetation screening in the background view.		
Cumulative Effects	Cumulative visual effects do not arise in this viewpoint.		
Sensitivity of Visual Receptor(s)	High: Includes viewers at designated views or landscapes. Viewers such as residents in close proximity to the viewpoint who have primary views that will be in the direction of the development that may not necessarily be of a		

Viewpoint 2 - Lugdoon	
	<p>particularly scenic quality; viewers at well-known heritage or popular tourist or recreational areas, viewers along scenic or tourist routes.</p> <p>There are a number of high sensitivity visual receptors represented by this viewpoint including a designated scenic route.</p>
Magnitude of Change	Slight: The proposals would be partially visible or visible at sufficient distance to be perceptible and result in a low level of change in the view and its composition and a low degree of contrast. The character of the view may be altered but will remain similar to the baseline existing situation. This change could be short term or of a short duration.
Significance of Effect	High X Slight = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
Mitigation Factors	<ul style="list-style-type: none"> ➤ Siting and design were developed in accordance with the guidelines for mountain moorland landscape character type. ➤ Coherent wind farm layout with no other permitted or proposed projects anticipated from this view. ➤ Intervening distance (c 4 km) reduces the horizontal and vertical extent of the wind farm within this view. ➤ Only 8 No. turbines will be visible due to screening by topography and vegetation. ➤ View of turbines is adjacent to the direction of travel. Hence, the turbines will not be in the direct line of vision of road users.
Residual Effect (incl. mitigating factors)	Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.

Viewpoint 3 - Ballyeeskeen			
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View from the N59 in the townland of Ballyeeskeen. ➤ This viewpoint is located along Scenic Route 7 and the Wild Atlantic Way. ➤ Approximately 3.2km northeast of the nearest turbine. ➤ Grid Reference: E544963, N833495 ➤ No. of turbines visible: 13/13 		
LCA and Sensitivity	Northern Lowland (MKO)- Low Landscape Sensitivity	Visual Receptor(s) and Sensitivity	Scenic Route (SR 7)- High Residents - Medium Tourist Designation (Wild Atlantic Way) - High
Baseline Description	This view was taken from the N59 road looking south. The foreground of the view shows a wire fence lining the road from where this image was taken. Behind this, an arable grass field is seen lined with mature vegetation. Vegetation becomes denser throughout the midground and background view. Residential dwellings and farmhouses are dotted throughout the		

Viewpoint 3 - Ballyeeskeen	
	landscape and can be seen indiscernibly within the background. Vertical elements such as electricity poles and pylons are seen scattered throughout much of the background of the view. The topography within this view is gently undulating, with skyline views of the Ox Mountains.
Viewpoint Description	All thirteen turbines will be visible from approximately mid-hub in the background image. The majority of the turbines will be screened due to the mature vegetation found along the midground and background of the view. The intervening distance is c 3.2 km from this location. The spatial extent of the turbines within this view is moderate given the scale and distance from this viewpoint location. Even in clear weather conditions, the Dunneill turbines will not appear large or domineering, and are well framed by the size and scale of the adjacent topographical features.
Cumulative Effects	Several of the existing Kingsmountain turbines can be seen to the left-hand side of the 90 degree image, and therefore the Dunneill Wind Farm increases the horizontal extent of turbines visible within this view. It is noted that both the Kingsmountain turbines and the Dunneill turbines are effectively absorbed by the scale of the topographical features also present within these views.
Sensitivity of Visual Receptor(s)	<p>High: Includes viewers at designated views or landscapes. Viewers such as residents in close proximity to the viewpoint who have primary views that will be in the direction of the development that may not necessarily be of a particularly scenic quality; viewers at well-known heritage or popular tourist or recreational areas, viewers along scenic or tourist routes.</p> <p>There are a number of high sensitivity visual receptors represented by this viewpoint including a designated scenic route.</p>
Magnitude of Change	Slight: The proposals would be partially visible or visible at sufficient distance to be perceptible and result in a low level of change in the view and its composition and a low degree of contrast. The character of the view may be altered but will remain similar to the baseline existing situation. This change could be short term or of a short duration.
Significance of Effect	High X Slight = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends.
Mitigation Factors	<ul style="list-style-type: none"> ➤ The turbines do not appear large or domineering to the receptors represented by this Viewpoint from this location due to the intervening distance (c 3.2 km) and the scale of the turbines themselves. ➤ The mature vegetation that exists within this view partially screens visibility of the turbines. Additionally, the scenic views along this route of the ridgelines of the Ox Mountains are not obstructed or impacted with the addition of the turbines as the turbines appear behind some of the mature vegetation in the background of the view. ➤ The residential properties along this road have sufficient separation distance from the turbines to ensure residential visual amenity is not significantly impacted. In addition to this, the residences along this roadway are screened either to the front of rear of the dwellings by either mature tree lines, hedgerows or farm buildings, restricting potential views of the site.

Viewpoint 3 - Ballyeeskeen	
	<ul style="list-style-type: none"> ➤ Road users will be travelling at speeds close to the speed limit of 100kmph on this straight section of road, hence any views are likely to be relatively fleeting. ➤ The visual impact is low due to the small size of the turbines and the distance from the viewer across the flat landscape thereby allowing the turbines to blend into the background without creating domineering effects. ➤ View of turbines is adjacent to the direction of travel. Hence, the turbines will not be in the direct line of vision of road users.
Residual Effect (incl. mitigating factors)	<p>Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.</p>

Viewpoint 4 - Doonbeakin			
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View from a local road in the townland of Doonbeakin. ➤ This viewpoint is located along Scenic Route 49 and the Sligo Way. ➤ Located within a Sensitive Rural Landscape Area. ➤ Approximately 440 meters north of the nearest turbine. ➤ Grid Reference: E 545193, N 829447 ➤ No. of turbines visible: 10/13 		
LCA and Sensitivity	Easky-Kingsmountain (MKO)- Medium Landscape Sensitivity	Visual Receptor(s) and Sensitivity	Scenic Route (SR 49) – High Recreational Route (Sligo Way) – High Landscape Designation (Sensitive Rural Landscape Area) – High Residences – High Road users – Low
Baseline Description	<p>This image was taken from a local road adjacent to the site boundary and is representative of visual receptors travelling along the scenic route SR49, as well as the Sligo Way. Viewpoint A (directed south) shows an agricultural grass field in the foreground with layers of coniferous forestry in the midground and background view. A small wire fence with wooden posts is seen on the left side of the image throughout much of the agricultural field. The topography within this view is undulating, as this view was taken along the northern foothills of the Ox Mountains.</p> <p>From this viewpoint location looking north (Viewpoint B), a roadside grass verge and small shrubs is seen lining the local road. Shrub height and density becomes more substantial towards the midground and background. Large areas of coniferous forestry plantation are seen throughout much of the background image. Views of the skyline are</p>		

Viewpoint 4 - Doonbeakin	
	<p>short and enclosed due to mature vegetation screening in the midground and background of the view.</p> <p>It is notable that despite the location of this viewpoint along a designated scenic route, there are no views of a particularly scenic quality from this location.</p>
Viewpoint Description	<p>2 No. images were used at this location to capture the full extent of the project. From this viewpoint location, the Dunneill turbines will be visible on either side of the road. On the left-hand side of the road (Viewpoint A south) 5 No. turbines will be visible. One turbine will only be visible from blade-tip, as screening by mature coniferous vegetation limits visibility from this viewpoint location. From the second viewpoint location (Viewpoint B north), five of the Dunneill turbines will be partially visible behind the layers of vegetation screening in the midground and background view. The blade tip of one turbine will be slightly visible in the centre of the image but is significantly screened by vegetation. The vertical extent of the Dunneill turbines is large given the proximity to the nearest turbine is c. 440m from this location.</p>
Cumulative Effects	<p>Cumulative visual effects do not arise in this viewpoint.</p>
Sensitivity of Visual Receptor(s)	<p>High: Includes viewers at designated views or landscapes. Viewers such as residents in close proximity to the viewpoint who have primary views that will be in the direction of the development that may not necessarily be of a particularly scenic quality; viewers at well-known heritage or popular tourist or recreational areas, viewers along scenic or tourist routes.</p> <p>There are a number of high sensitivity visual receptors represented by this viewpoint including a designated scenic route.</p>
Magnitude of Change	<p>Moderate: The change in the view may involve partial obstruction of existing view or partial change in character and composition of the baseline through the introduction of new elements or removal of existing elements. Likely to occur at locations where the development is partially visible over a moderate or medium extent, and which are not in close proximity to the development. Change may be readily noticeable but not substantially different in scale and character from the surroundings and wider setting.</p>
Significance of Effect	<p>High X Moderate = Moderate = Significant (EPA, 2022) An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.</p>
Mitigation Factors	<ul style="list-style-type: none"> ➤ Coniferous forestry plantation is a man-made element, therefore decreasing the overall aesthetic quality of the local landscape, it is also noted that there are limited views of a scenic quality from this location, despite its location along a designated scenic route. ➤ Substantial screening of by mature vegetation and undulating topography ➤ Local road is currently in poor repair and is likely a low-trafficked road

Viewpoint 4 - Doonbeakin	
	<ul style="list-style-type: none"> ➤ Residential properties along this road have sufficient separation distance from the turbines and given the scale of the turbines they do not appear domineering or overbearing.
Residual Effect (incl. mitigating factors)	<p>Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends</p>

Viewpoint 5 - Ballyglass			
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View from a local road in the townland of Ballyglass. ➤ This viewpoint is located along Scenic Route 49, the Sligo Way and located within a Sensitive Rural Landscape Area. ➤ Approximately 250 meters southeast of the nearest turbine. ➤ Grid Reference: E 544705, N 829290 ➤ No. of turbines visible: 5/13 		
LCA and Sensitivity	Easky-Kingsmountain (MKO)- Medium Landscape Sensitivity	Visual Receptor(s) and Sensitivity	Scenic Route (SR 49) – High Recreational Route (Sligo Way) – High Landscape Designation (Sensitive Rural Landscape Area) - High Residences – High Road users - Low
Baseline Description	This view was taken as it is representative of visual receptors travelling along Scenic Route SR49 as well as the Sligo Way. The view shows an agricultural grass field bordered by commercial coniferous forestry on either side. From this viewpoint location, the landscape appears to slope downwards to the north. Coniferous forestry is a common landscape element within this view, thereby preventing any longer-range views of the landscape beyond.		
Viewpoint Description	From this location looking northwards, the Dunneill turbines appear in the midground of the image behind the row of coniferous forestry vegetation. Approximately five of the turbines from the northern site boundary will be visible from approximately mid-tower. The remaining turbines to the south will be entirely screened by the coniferous forestry found on the southern side of the local road. The vertical extent of the Dunneill turbines is large given the proximity to the nearest turbine is c. 250m from this location.		
Cumulative Effects	Cumulative visual effects do not arise in this viewpoint.		
Sensitivity of Visual Receptor(s)	<p>High: Includes viewers at designated views or landscapes. Viewers such as residents in close proximity to the viewpoint who have primary views that will be in the direction of the development that may not necessarily be of a particularly scenic quality; viewers at well-known heritage or popular tourist or recreational areas, viewers along scenic or tourist routes.</p> <p>There are a number of high sensitivity visual receptors represented by this viewpoint including a designated scenic route.</p>		

Viewpoint 5 - Ballyglass	
Magnitude of Change	Moderate: The change in the view may involve partial obstruction of existing view or partial change in character and composition of the baseline through the introduction of new elements or removal of existing elements. Likely to occur at locations where the development is partially visible over a moderate or medium extent, and which are not in close proximity to the development. Change may be readily noticeable but not substantially different in scale and character from the surroundings and wider setting.
Significance of Effect	High X Moderate = Moderate = Significant (EPA, 2022) An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Mitigation Factors	<ul style="list-style-type: none"> ➤ Siting and design were developed in accordance with the guidelines for mountain moorland landscape character type. ➤ Coniferous forestry plantation is a man-made element, therefore decreasing the overall aesthetic quality of the local landscape, it is also noted that there are limited views of a scenic quality from this location, despite its location along a designated scenic route. ➤ Screening by mature vegetation ➤ Local road is currently in poor repair and is likely a low-trafficked road ➤ Turbines located in the southern portion of the site will be entirely screened by coniferous forestry vegetation from this viewpoint location
Residual Effect (incl. mitigating factors)	Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends

Viewpoint 6 – Crowagh			
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View from the L-2702 local road in the townland of Crowagh. ➤ This viewpoint is located along Scenic Route 49, the Sligo Way and located within a Sensitive Rural Landscape Area. ➤ Approximately 1km west of the nearest turbine. ➤ Grid Reference: E 543471, N 829163 ➤ No. of turbines visible: 5/13 		
LCA and Sensitivity	Easky-Kingsmountain (MKO) – Medium Landscape Sensitivity	Visual Receptor(s) and Sensitivity	Scenic Route (SR 49) – High Recreational Route (Sligo Way) – High Landscape Designation (Sensitive Rural Landscape Area) - High Residences – Medium Road users - Low
Baseline Description	This viewpoint was taken from the L-2702, which is also along Scenic Route 49, the Sligo Way and is located within a Sensitive Rural Landscape Area. The left side of this image shows roadside verge and small shrubs		

Viewpoint 6 – Crowagh	
	<p>approximately 1 meter in height. Behind this, an agricultural grass field is seen. The field ends in a row of dense coniferous plantation forestry.</p> <p>From this viewpoint location looking south, taller and more mature shrubs line the road, therefore enclosing views to the south. A water treatment plant is located to the right of this viewpoint location but is not visible from this angle due to vegetation screening. Longer-distance views of the eastern extents of the Ox Mountains can be seen along the skyline of the image in the right background.</p>
Viewpoint Description	<p>Approximately 5 turbines from the northern portion of the Dunneill Wind Farm will be visible from this viewpoint location. 2 No. of the turbines will only be visible from mid-blade due to the screening provided by coniferous forestry in the background of the image. The spatial extent of the Dunneill turbines is considered low given that the majority of the turbines within the project will not be visible and the turbines that are visible, are significantly screened by vegetation.</p>
Cumulative Effects	<p>Cumulative visual effects do not arise in this viewpoint.</p>
Sensitivity of Visual Receptor(s)	<p>High: Includes viewers at designated views or landscapes. Viewers such as residents in close proximity to the viewpoint who have primary views that will be in the direction of the development that may not necessarily be of a particularly scenic quality; viewers at well-known heritage or popular tourist or recreational areas, viewers along scenic or tourist routes.</p> <p>There are a number of high sensitivity visual receptors represented by this viewpoint including a designated scenic route.</p>
Magnitude of Change	<p>Slight: The proposals would be partially visible or visible at sufficient distance to be perceptible and result in a low level of change in the view and its composition and a low degree of contrast. The character of the view may be altered but will remain similar to the baseline existing situation. This change could be short term or of a short duration.</p>
Significance of Effect	<p>High X Slight = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends</p>
Mitigation Factors	<ul style="list-style-type: none"> ➤ Coniferous forestry plantation is a man-made element, therefore decreasing the overall aesthetic quality of the local landscape, it is also noted that there are limited views of a scenic quality in the direction of the Dunneill Wind Farm from this location, despite its location along a designated scenic route. ➤ Significant screening is provided by mature vegetation ➤ Local road is currently in poor repair and is likely a low-trafficked road. ➤ Turbines located in the southern site boundary will be entirely screened by coniferous forestry vegetation from this viewpoint location. ➤ Water treatment plan adds industrial elements to the character of the view and the local landscape.
Residual Effect (incl. mitigating factors)	<p>Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities</p>

Viewpoint 7 - Crowagh			
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View from the L-2702 local road in the townland of Crowagh ➤ This viewpoint is located along Scenic Route 49, the Sligo Way and is located within a Sensitive Rural Landscape Area ➤ Approximately 1.7 km southwest of the nearest turbine. ➤ Grid Reference: E 543936, N 827355 ➤ No. of turbines visible: 4/13 		
LCA and Sensitivity	Easky-Kingsmountain (MKO) – Medium Landscape Sensitivity	Visual Receptor(s) and Sensitivity	Scenic Route (SR 49) – High Recreational Route (Sligo Way) – High Landscape Designation (Sensitive Rural Landscape Area) – High Tourist Designation (Coopers Lodge: local) – Medium Road users - Low
Baseline Description	<p>This viewpoint location was chosen as it is representative of visual receptors along Scenic Route 49, the Sligo Way and is located within a Sensitive Rural Landscape Area. This viewpoint is located adjacent to Coopers Lodge, which is not recorded as a protected structure but does have a rich local history (particularly regarding its “haunted” status, recorded as early as 1938, and features in the National Folklore Collection, UCD). The landscape condition of this viewpoint location offers relatively remote, unspoilt views of a ridgeline in the Ox Mountains.</p> <p>From this viewpoint location looking northeast, scenic views of the Ox Mountains can be observed. Low vegetation occupy the majority of land cover within the view, although coniferous plantation forestry is visible within the background and skyline on the left side of the image. The topography within the view is undulating, and appears to gently slope downwards from the background to the left-hand side of the image.</p>		
Viewpoint Description	<p>The ZTV suggests that 5-9 turbines will be visible from this location, however this is not the case in reality as the ridgeline of Ox Mountain screens the majority of the Dunneill turbines from view. Approximately four turbines will be visible from blade tip, the remainder of which are screened by the intervening topography. The intervening distance from this viewpoint location to the nearest turbine is c.1.7km. However, the spatial extent of the Dunneill turbines within the view is considered low as the turbines appear indiscernible from this viewpoint location due to the screening effect provided by the topography.</p>		
Cumulative Effects	<p>The existing Black Lough wind farm turbines are visible from this location, in the opposite direction to the Dunneill wind turbines, thereby increasing the horizontal extent of visible turbines and creating a combined view of turbines in succession (where there observer has to turn their head to see the separate development). However, given the extremely limited views of the Dunneill Wind Turbines available from this location, significant cumulative visual effects are unlikely to arise.</p>		

Viewpoint 7 - Crowagh	
Sensitivity of Visual Receptor(s)	<p>High: Includes viewers at designated views or landscapes. Viewers such as residents in close proximity to the viewpoint who have primary views that will be in the direction of the development that may not necessarily be of a particularly scenic quality; viewers at well-known heritage or popular tourist or recreational areas, viewers along scenic or tourist routes.</p> <p>There are a number of high sensitivity visual receptors represented by this viewpoint including a designated scenic route.</p>
Magnitude of Change	<p>Negligible: Any change would only be barely distinguishable from the status quo “do-nothing scenario” in the surroundings. The composition and character of the view would be substantially unaltered, approximating to little or no change.</p>
Significance of Effect	<p>High X Negligible = Minor = Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities</p>
Mitigation Factors	<ul style="list-style-type: none"> ➤ Siting and design were developed in accordance with the guidelines for mountain moorland landscape character type. ➤ Significant screening by topography ➤ Local road is currently in poor repair and is likely a low-trafficked road. ➤ Coopers Lodge is not a recorded historical monument and is likely of local tourism value ➤ Vast majority of the turbines in the Dunneill layout will not be visible ➤ View of turbines is adjacent to the direction of travel. Hence, the turbines will not be in the direct line of vision of road users.
Residual Effect (incl. mitigating factors)	<p>Not Significant (EPA, 2022) An effect which causes noticeable changes in the character of the environment but without significant consequences.</p>

Viewpoint 8 - Owenbeg			
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View from the N59 in the townland of Owenbeg. ➤ This viewpoint is also located within a Sensitive Rural Landscape Area ➤ Approximately 6.2 km northwest of the nearest turbine. ➤ Grid Reference: E 537986, N 831528 ➤ No. of turbines visible: 13/13 		
LCA and Sensitivity	Inland Bog Basin (MKO) – Low Landscape Sensitivity	Visual Receptor(s) and Sensitivity	Landscape Designation (Sensitive Rural Landscape Area) – High Road Users – Medium Residents – Low
Baseline Description	<p>This view was taken off the N59 and is representative of road users travelling along the N59 with views of the Ox Mountains. It is noted that visibility from the N59 was difficult to establish due to the presence of mature roadside vegetation along long stretches of the route. However,</p>		

Viewpoint 8 - Owenbeg	
	<p>some open views are available and the view presented here is an open view from along the road in this direction.</p> <p>Mature shrub vegetation is seen in the left and right foreground of this image. Between the gap in vegetation and in the centre of the image, longer distance views of the landscape beyond are seen. The midground view comprises mainly of peatland bog, characterised by low-lying vegetation and small hedges. Longer distance views of pockets of coniferous forestry can be seen in the midground and background. The ridgelines of the Ox Mountains are seen along the skyline providing scenic amenity to views from this location. One-off residential dwellings are scattered across the background view but are indiscernible with distance.</p>
Viewpoint Description	<p>All thirteen turbines will be slightly visible from this viewpoint location from approximately mid-hub. The turbines are seen in the background of the image located on the lower foothills of the Ox Mountains. The intervening distance across the flat landscape and the denser vegetation coverage in the background mitigates visibility of the turbines. The Dunneill turbines appear as a relatively coherent cluster from this viewpoint location, with an even spread and scale of the turbines apparent.</p>
Cumulative Effects	<p>The existing Kingsmountain turbines are seen behind the existing Dunneill turbines, with the turbines of both wind farms appearing to have a similar scale and height. Both wind farms are effectively absorbed by the larger topographical features in the surrounding landscape and there is a visual coherence created by virtue of the close proximity of the wind farms to each other within this view, with very little separation distance apparent. The Dunneill turbines do somewhat increase the horizontal extent of the views of turbines available from this location.</p>
Sensitivity of Visual Receptor(s)	<p>Medium: Includes viewers who may have some susceptibility to a change in view. Viewers such as residents in medium proximity but who do not have views focused in the direction of the proposed development or whose views are not of a particularly scenic quality; those from views which are not designated but may have local recreational uses or those travelling along routes or at view which are considered moderately scenic.</p> <p>Visual receptors at this location are likely limited to motorists travelling along the national road, as well as some residential receptors not located in close proximity to the Dunneill wind farm.</p>
Magnitude of Change	<p>Slight: The proposals would be partially visible or visible at sufficient distance to be perceptible and result in a low level of change in the view and its composition and a low degree of contrast. The character of the view may be altered but will remain similar to the baseline existing situation. This change could be short term or of a short duration.</p>
Significance of Effect	<p>Medium X Slight = Minor = Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities</p>
Mitigation Factors	<p>➤ Siting and design were developed in accordance with the guidelines for mountain moorland landscape character type.</p>

Viewpoint 8 - Owenbeg	
	<ul style="list-style-type: none"> ➤ Difficult to establish visibility as the majority of the N59 is screened by roadside vegetation ➤ The Dunneill turbines are at a similar level to the receptor, and at a substantial distance from the viewpoint (c.6.2km), meaning the turbines do not appear dominant and are readily absorbed into the skyline view ➤ View of turbines is adjacent to the direction of travel. Hence, the turbines will not be in the direct line of vision of road users. ➤ Road users will be travelling at speeds close to the speed limit of 100 kmph on this straight section of road, hence any views are likely to be fleeting
Residual Effect (incl. mitigating factors)	<p>Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities</p>

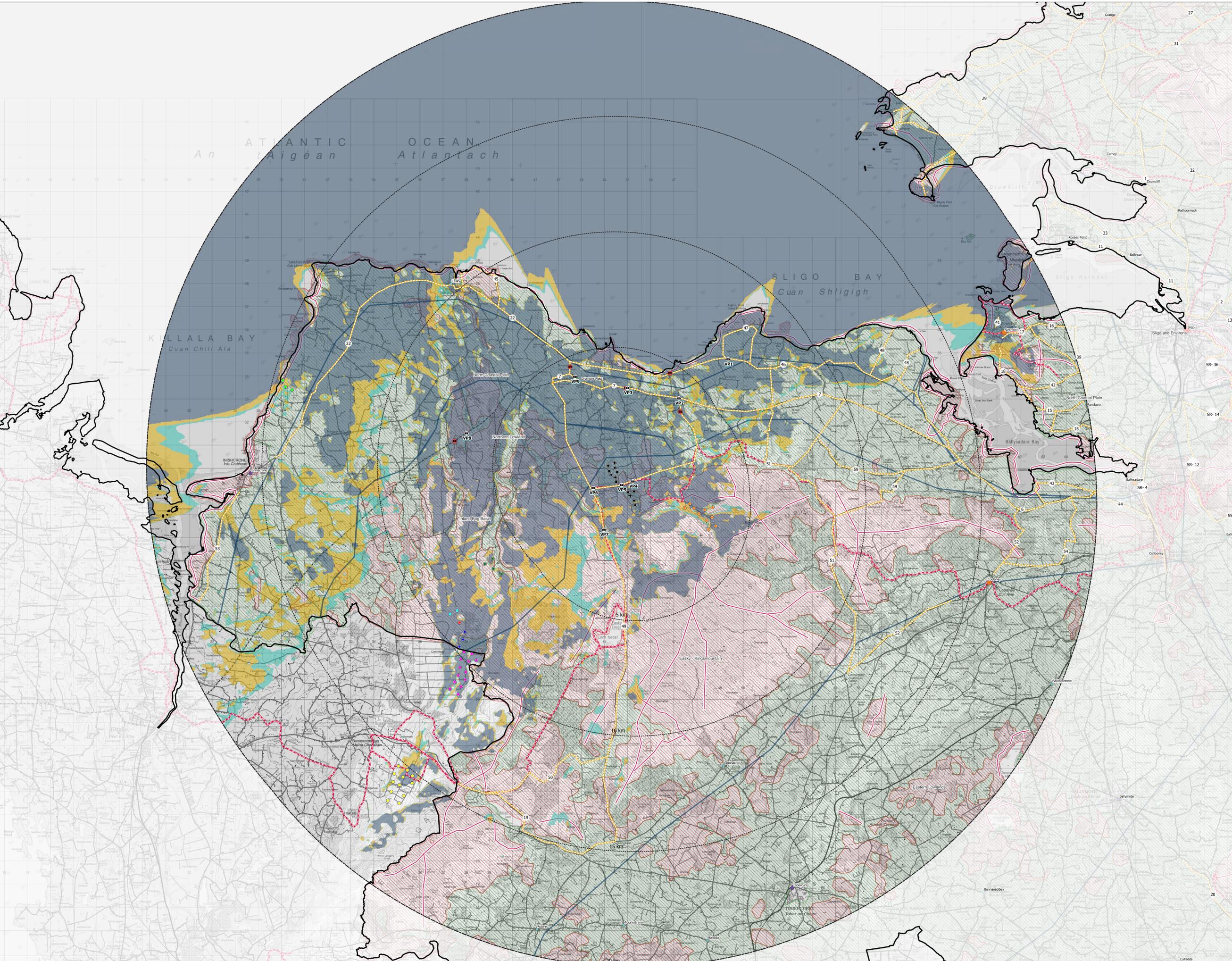
Viewpoint 9 – Knockacullen			
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View from the R297 in the townland of Knockacullen ➤ Approximately 4.2 km northwest of the nearest turbine in the Village of Dromore West. ➤ Grid Reference: E 542679, N 833978 ➤ No. of turbines visible: 13/13 		
LCA and Sensitivity	Northern Lowland (MKO) – Low Landscape Sensitivity	Visual Receptor(s) and Sensitivity	Residents (Village of Dromore West) – Medium Road Users - Low
Baseline Description	<p>This view was chosen as it is representative of residential receptors from the village of Dromore West and road users from the R297. From this viewpoint location looking south, two-storey detached houses, outlined with pavements, private parking and small gardens are seen running adjacent to the R297 in the foreground and midground. Single mature trees are seen throughout much of the view, becoming denser within the background. Longer distance views of the Ox Mountains and foothills are seen along the skyline, thereby adding aesthetic qualities to the view. Landcover of the foothills of the Ox Mountains comprises of agricultural field patterns and patches of coniferous forestry, however, visibility of these are greatly limited with distance.</p>		
Viewpoint Description	<p>From this location, the Dunneill turbines appear in the centre background of the image above the row of the residential dwellings in the foreground. The Dunneill turbines appear progressively more obscured with distance and are partially screened by the vegetation in the background. The view is open and expansive and the reduction in scale of the Dunneill turbines with distance mitigates any potential domineering effects. From this viewpoint location, the turbines achieve a visual balance with the landscape, as the turbines are not domineering and do not interfere with views of the ridgelines of the Ox Mountains.</p>		
Cumulative Effects	<p>The existing Kingsmountain turbines are also partially visible from this viewpoint location. Within the view shown existent weather conditions have</p>		

Viewpoint 9 – Knockacullen	
	<p>screened these turbines from view. The turbines are partially visible in better weather conditions above the centre of the road in the left background, which is currently covered by fog. These turbines appear at a similar scale as the existing Dunneill turbines. There is some visual separation between these wind farms and the existing Dunneill turbines do increase the horizontal extent of turbines visible within the view. Both wind farms are located in the backgrounds of the views available from this location and both are effectively absorbed by the topography backclothing both of them.</p>
<p>Sensitivity of Visual Receptor(s)</p>	<p>Medium: Includes viewers who may have some susceptibility to a change in view. Viewers such as residents in medium proximity but who do not have views focused in the direction of the proposed development or whose views are not of a particularly scenic quality; those from views which are not designated but may have local recreational uses or those travelling along routes or at view which are considered moderately scenic.</p> <p>Visual receptors at this location are likely limited to motorists travelling along the regional road, as well as some residential receptors not located in close proximity to the Dunneill wind farm. However, views from the road are considered moderately scenic.</p>
<p>Magnitude of Change</p>	<p>Slight: The proposals would be partially visible or visible at sufficient distance to be perceptible and result in a low level of change in the view and its composition and a low degree of contrast. The character of the view may be altered but will remain similar to the baseline existing situation. This change could be short term or of a short duration.</p>
<p>Significance of Effect</p>	<p>Medium X Slight = Minor = Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities</p>
<p>Mitigation Factors</p>	<ul style="list-style-type: none"> ➤ The turbine bases are at a similar level to the receptor which means the intervening distance (c 4.2 km) mitigates the potential for domineering impacts. ➤ Viewpoint chosen as a ‘worst case’ view from this heightened position as there was no visibility found from the majority of the streetscape of the settlement of Dromore West ➤ The turbines appear small in scale and the distance from the viewer across the flat landscape allows the turbines to be effectively absorbed into the background of the view. ➤ Turbines are not in the direct line of travel for road users.
<p>Residual Effect (incl. mitigating factors)</p>	<p>Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.</p>



APPENDIX 13.4

ZTV MAP (A0 SIZE)



- Map Legend**
- ▭ LVIA Study Area
 - ▭ County Boundary
 - Infrastructure and Study Boundary**
 - Existing Dunneill Turbines
 - LVIA Assessment Tools**
 - Viewpoint Location
 - Viewpoints not Included for Full Assessment
 - Half Blade ZTV (62m)
 - 1-4 turbine theoretically visible
 - 5-9 turbine theoretically visible
 - 10-13 turbine theoretically visible
 - Visual Receptors**
 - Settlement Hierarchy SCDP 2017-23
 - Gateway Satellite
 - Key Support Town
 - Villages
 - Scenic Routes SCDP 2017-23
 - Waymarked Walking Trails
 - Landscape Receptors**
 - Visually Vulnerable Areas SCDP 2017-23
 - Sensitive Rural Landscape SCDP 2017-23
 - Normal Rural Landscape SCDP 2017-23
 - Provisional Sligo Landscape Character Areas
 - Other Wind Farms Within 20km**
 - Existing Black Lough Turbines
 - Existing Bunnyconnell Turbines
 - Existing Carrowleagh Turbines
 - Existing Cloonkeelun Turbines
 - Existing Cloonkeelun II Turbines
 - Existing Cloonkeelun III Turbines
 - Existing Lackan Turbines
 - Existing Kingsmountain Turbines



Appendix 13-4

LVIA Baseline Map

Dunneill Wind Farm

Scale	Project No.	Date	Drawn By	Checked By
1:51,000	210207	28.07.2021	J5	DN

