Knockastanna Wind Farm

Chapter 9: Landscape

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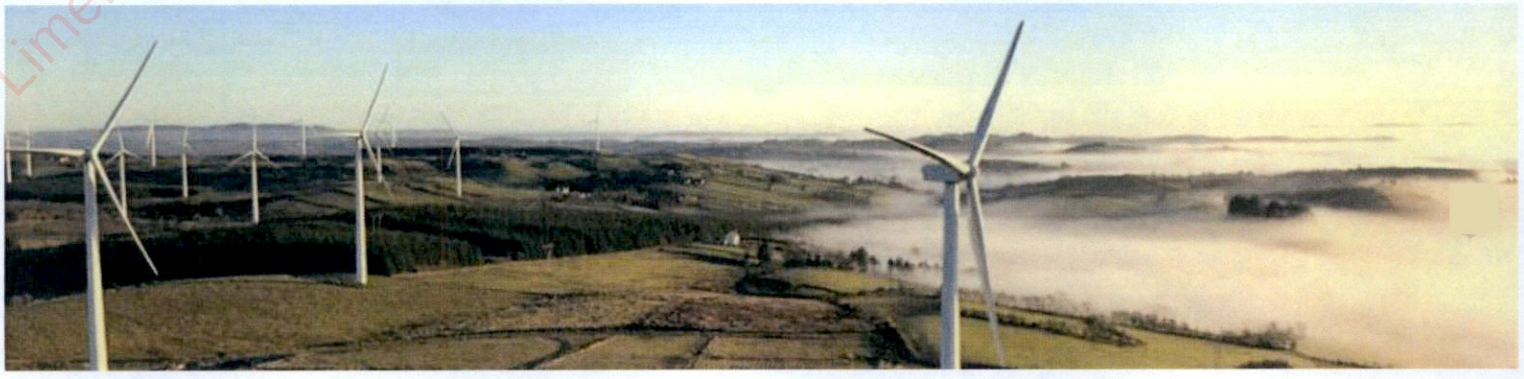

9.1 Introduction

This chapter assesses the landscape and visual effects from the proposed development, i.e. the continuation of operation of the existing Knockastanna Wind Farm for a further 15 years, as described at **Chapter 3**.

The proposed development is located on the north-western slopes of Knockastanna hill, in north-east Co. Limerick, close to the border with Co. Tipperary. The villages of Rear Cross, Doon and Cappamore are located c. 2km to the north-west, c. 6km to the south and c. 10km to the south-west respectively. The centre of Limerick City is located c. 29km to the west.

The existing development comprises 4 no. wind turbines, 3 no. of which are currently in operation with 1 no. having been temporarily dismantled to facilitate remedial works to the turbine foundation. The development further comprises all associated ancillary infrastructure including turbine foundations, crane hardstandings, access tracks, underground electricity cables and electrical switchroom.

The wind farm is connected to the national electricity grid, at Cappamore, via c. 11km of overhead electricity line.

9.1.1 Scope of Work

The EPA guidelines in relation to the preparation of an EIAR[1] suggest the following typical headings that may be included in respect of the prescribed environmental **factor 'The Landscape'**, which were incorporated in this assessment, as appropriate:-

- Landscape Appearance and Character;
- Landscape Context;
- Views and Prospects; and
- Historical Landscapes.

Consideration was also given to the recommendations, with regard to landscape and visual impact of wind energy developments, contained in the *Wind Energy Development Guidelines for Planning Authorities* (2006)[2] and the *Draft Revised Wind Energy Development Guidelines* (December 2019)[3] particularly regarding the definition of the study area and the Zone of Theoretical Visibility (ZTV).

However, in the absence of more detailed Irish guidance, the assessment contained within this chapter is based on the Third Edition of the *Guidelines for Landscape and Visual Impact Assessment* issued by the Landscape Institute and Institute of Environmental Management and Assessment (hereinafter referred to as 'GLVIA3')[4]. These guidelines are referenced in the *Draft Revised Wind Energy Development Guidelines* as offering ***"detailed guidance on the process of assessing the landscape and visual effects of developments and their significance"***.

GLIVIA3 emphasises that landscape and visual effects are related but independent issues; landscape effects are changes in the landscape, its character and quality;

[1] Environmental Protection Agency (May 2022) *Guidelines on the Information to be contained in Environmental Impact Assessment Reports*

[2] Department of Housing, Local Government and Heritage (2006) *Wind Energy Development Guidelines for Planning Authorities*

[3] Department of Housing, Local Government and Heritage (2019) *Draft Revised Wind Energy Development Guidelines*

[4] The Landscape Institute with the Institute of Environmental Management and Assessment (2013) *Guidelines for Landscape and Visual Impact Assessment*, Third Edition, Routledge

while visual effects relate to the appearance of these changes and the resulting effect on visual amenity.

Where possible, identified effects are quantified; however the nature of landscape and visual impact assessment (LVIA) requires interpretation by professional judgement. Further details of LVIA methodology is provided at **Section 9.2** below.

It should be noted that, considering that the proposed development comprises the continuation of operation of an existing development, the assessment work differs from a typical proposed development. The description of the landscape and visual baseline already contains the elements to be assessed. Therefore, instead of describing the likely landscape and visual effects, a description of the existing effects is provided, which are the same as the effects during the operational phase of the proposed development. This is with the exception of the additional duration of operation, which is taken into account.

Photomontages are not required to inform the 'likely' effects, as the existing views already contain the wind turbines and associated ancillary infrastructure. 8 no. sample viewpoints, from locations throughout the study area, are utilised to illustrate the visibility of the existing development; with figures prepared from each viewpoint enclosed at **Annex 9.1** (**Volume II**). 5 no. of these viewpoints were taken from locations similar to viewpoints included in the parent planning application. 3 no. new/additional viewpoint locations were chosen to represent views from greater distances, from different viewing directions and/or along designated scenic routes.

9.1.2 Technical Standards

Photography and visual representations are based on the principles set out in the Landscape Institute – *Technical Guidance Note 06/19 – Visual Representation of Development Proposals*[5]. As mentioned above, photomontages have not been prepared for the proposed development, as the baseline photography incorporates the existing wind turbines and other elements. Therefore, annotated viewpoint photography is provided only. There is no Irish standard/guidance, and in our experience, it is typically considered sufficient to provide two viewpoints on one A3-sized sheet, using a range of horizontal angles of view (i.e. 40°-110°) to illustrate the full extent of the development within each photograph presented, as well as the context within which the site is located.

9.1.3 Consultation

A pre-application discussion was held with Limerick City & County Council ('**the Planning Authority**') on 10 August 2021. With regard to landscape and visual matters, the representatives of the Planning Authority specifically requested that protected views identified in the Tipperary County Development Plan be considered as part of the LVIA, as well as the effects on the Slieve Felim Way.

9.1.4 Statement of Authority

The assessment was carried out by Anne Merkle, an Associate Landscape Architect with SLR Consulting Ireland. Anne graduated from the University of Applied Sciences in Nürtingen (Germany) in Landscape Architecture (Dipl.-Ing. (FH)), in 2002. She has 19 years' post-graduate experience working for landscape consultancies in Ireland, specialising in Landscape and Visual Impact Assessments for a wide range of projects,

[5] The Landscape Institute (2019) Technical Guidance Note 06/19: Visual Representation of Development Proposals, Landscape Institute

including quarries, waste recovery facilities, wind farms, electricity transmission infrastructure and mixed developments. In 2017, Anne completed an MSc in Biodiversity and Land Use Planning at NUIG. She is a full member of the Irish Landscape Institute (MILI) since 2005.

9.1.5 Limitations / Difficulties Encountered

No difficulties were encountered during the desktop study, field survey or in the preparation of this report.

9.1.6 Significant Risks

There are no known significant risks to human health or environmental effects, which may occur in relation to the proposed development in landscape and visual terms.

9.2 Methodology

9.2.1 Introduction

Landscape and Visual Impact Assessment (LVIA) is a tool used to identify the effects of development on "*landscape as an environmental resource in its own right and on people's views and visual amenity*" (GLVIA3, paragraph 1.1). GLVIA3 (paragraph 2.22) states that these two elements, although inter-related, should be assessed separately. GLVIA3 is the main source of guidance on LVIA.

Landscape is a definable set of characteristics resulting from the interaction of natural, physical and human factors: it is a resource in its own right. Its assessment is distinct from visual assessment, which deals specifically with effects on the views and visual amenity of different groups of people at particular locations. Clear separation of these two topics is recommended in GLVIA3.

As GLVIA3 (paragraph 2.23) states, professional judgement is an important part of the LVIA process: whilst there may be some scope for objective measurement of landscape and visual changes, much of the assessment must rely on qualitative judgements. It is critical that these judgements are based upon a clear and transparent method so that the reasoning can be followed and examined by others.

Impacts can be defined as the action being taken, whereas effects are the changes resulting from that action. This method of assessment assesses landscape and visual effects.

Landscape and visual effects can be positive, negative or neutral in nature. Positive effects are those which enhance and/or reinforce the characteristics which are valued. Negative effects are those which remove and/or undermine the characteristics which are valued. Neutral effects are changes which are consistent with the characteristics of the landscape or view.

In LVIAs which form part of an EIAR, it is necessary to identify significant and non-significant effects. In non-EIAR LVIAs, also known as appraisals, the same principles and process as LVIA may be applied but, in so doing, it is not required to establish whether the effects arising are or are not significant given that the exercise is not being undertaken for EIA purposes (see GLVIA3 statement of clarification 1/13 10-06-13, Landscape Institute).

9.2.2 Baseline Assessment Methodology

9.2.2.1 Sources of Information

The desktop study and field work was informed by:-

- Limerick County Development Plan 2010-2016;
- Draft Limerick Development Plan 2022-2028;
- North Tipperary County Development Plan 2010 (as varied);
- South Tipperary County Development Plan 2009 (as varied);
- Draft Tipperary County Development Plan 2022-2028;
- digital and paper (Ordnance Survey Ireland) mapping at different scales; and
- information available on the internet (such as information on recreational facilities and nature conservation sites).

9.2.2.2 Study Area

In accordance with the *Wind Energy Development Guidelines for Planning Authorities 2006*, ZTVs with a 20km radius were produced, both for the hub height (64.7m) and the blade tip height (99.95m) of the existing four turbines at Knockastanna. The ZTVs illustrates the areas from where 1 no., 2 no, 3 no. or 4 no of the turbines are theoretically visible in four different colour bands. As the blade tip height of the turbines is very close to 100m, it was decided to opt for the larger 20km ZTV, rather than the 15km ZTV proposed for blade tips up to 100m.

It should be noted **that the ZTVs represent a 'worst case scenario'**, as they do not take into account the potential screening of views by buildings or vegetation. Therefore, the areas from where a development is actually visible is much reduced in areas where screening structures and vegetation are present. Please refer to the ZTV methodology in **Section 9.2.5** for more detail.

The ZTVs are presented at **Figures 9.2** & **9.3** (**Annex 9.1; Volume II**) and were used to define the study area as a core area of 5km surrounding the proposed development site and extending up to 10km to the north-west and north-east and up to 20km to the south-west. The study area covers parts of County Limerick and County Tipperary. While there are some areas where visibility is indicated outside the defined study area, these are typically on uninhabited upland areas or at a great distance, with only the tips of some of the turbines visible. They were, therefore, scoped out of the study area for this LVIA.

9.2.2.3 Viewpoint Selection and Field Survey

The visibility of the existing development was initially assessed by a desktop study of OSI Discovery Maps (1:50,000), the ZTV mapping and available aerial photography in order to identify a number of provisional viewpoints to be visited during the site survey. The viewpoints utilised as part of the parent planning application, as well as protected views designated within the relevant County Development Plans, were also taken into account.

A detailed site survey was carried out on 29 September 2021 in mostly sunny and clear conditions with good visibility. The assessment concentrated on publicly accessible areas, such as the road and public footpath networks, residential receptors and outdoor recreational areas.

Photographs were taken during the site survey, using a Nikon D610 digital SLR full frame camera, with a fixed 50mm lens, mounted on a tripod with a panoramic head. The individual photos were taken in portrait format.

Eight of the viewpoints surveyed were selected to illustrate the visibility of the proposed development (i.e. the existing wind farm development proposed for continued operation) from a range of locations within the study area (refer to Viewpoints A-H at **Figures 9.4-9.7**; **Annex 9.2**). For the visual presentations, 4-6 photographic frames were

merged together using Adobe Photoshop software. It should be noted that photography is a tool to assist in the visualisation process and cannot be expected to replicate the actual view that would be attained on the ground.

9.2.3 Landscape Effects

Landscape, as defined in the European Landscape Convention, is *"an area, as perceived by people, whose character is the result of the action and interaction of* ***natural and/or human factors"*** (Council of Europe, 2000). Landscape does not apply only to special or designated places, nor is it limited to countryside.

GLVIA3 (paragraph 5.34) recommends that the effect of the development on landscape receptors is assessed. Landscape receptors are the components of the landscape that are likely to be affected by the proposed development, and can include individual elements (such as hedges or buildings), aesthetic and perceptual aspects (for example; sense of naturalness, tranquillity or openness), or, at a larger scale, the character of a defined character area or landscape type. Designated landscapes, such as National Parks or Areas of Outstanding Natural Beauty (AONBs), may also be treated as landscape receptors, in which case attention is also given to effects on their special qualities.

This assessment is being undertaken to identify in how far the existing development has removed or added elements to the landscape, altered aesthetic and perceptual aspects, or added, removed, altered characteristics and thus potentially changed the overall character.

Judging landscape effects requires a methodical assessment of the sensitivity of the landscape receptors to the proposed development and the magnitude of effect which would be experienced by each receptor. The criteria and definitions used in making these judgements are set out below.

9.2.3.1 Landscape Sensitivity

The sensitivity of landscape receptors is assessed by combining assessments of the value attached to each receptor and the susceptibility of each receptor to the type of change which is proposed. (GLVIA3, paragraph 5.39).

Value Attached to Landscape Receptors

Landscape receptors may be valued at community, local, national or international level. Existing landscape designations provide the starting point for this assessment, as set out in **Table 9.1** below.

The table sets out the interpretation of landscape designations in terms of the value attached to different landscape receptors. As GLVIA3 (paragraph 5.24) notes; at the local scale of an LVIA study area, it may be found that the landscape value of a specific area may sometimes be different to that suggested by the presence or absence of a formal designation.

Where landscapes are not designated and where no other local authority guidance on value is available, an assessment is made by reference to criteria in the **Table 9.2** below. This is based on Table 1 of the Landscape Institute *Technical Guidance Note 02/21*[6]. These factors are not fixed and should be reviewed on a case-by-case basis.

[6] The Landscape Institute (2021) Technical Guidance Note 02/21: Assessing landscape value outside national designations, Landscape Institute

When assessing landscape value of a site, it is important to consider not only the site itself but also its context.

Landscapes may be judged to be of local authority or community value on the basis of one or more of these factors. There may also be occasional circumstances where an undesignated landscape may be judged to be of national value, for example where it has a clear connection with a nationally designated landscape or is otherwise assessed to be of equivalent value to a national designation. Similarly, on occasions there may be areas within designated landscapes that do not meet the designation criteria or demonstrate the key characteristics/special qualities in a way that is consistent with the rest of the designated area.

An overall assessment is made for each landscape receptor, based on an overview of the below criteria, to determine its value - whether for example it is comparable to a local authority landscape designation or similar, or whether it is of value to local people and communities. For example, an intact landscape in good condition; where scenic quality, tranquillity, and/or conservation interests make a particular contribution to the landscape, or where there are important cultural or historical associations; might be of equivalent value to a local landscape designation. Conversely, a degraded landscape in poor condition, with no particular scenic qualities or natural or cultural heritage interest is likely to be assessed as being of limited landscape value.

Designation	Description	Value
World Heritage Sites, candidate World Heritage Site	Unique sites, features or areas identified as being of international importance according to UNESCO criteria. Consideration should be given to their settings especially where these contribute to the attributes of outstanding universal value for which such an area of landscape is valued	International
National Parks	Areas of landscape identified as being of national importance. Consideration should be given to their settings especially where these contribute to the special qualities for which the landscape is valued.	National
Local Landscape Designations (e.g. Areas of High Amenity) included in local planning documents; or other landscapes of identified value.	Areas of landscape identified as having value, which are either recognised at the local authority level by a local designation or other equivalent recognition of value OR are landscapes considered to have elevated value, having regard to the criteria in Table 13A-2 and/or by virtue of demonstrable physical attributes.	Local Authority
Undesignated landscapes of community value	Landscapes which do not have any formal designation but which may possess some/several indicators of value.	Local Authority/ Community
Landscapes of low value	Landscapes in poor condition or fundamentally altered by presence of intrusive man-made structures. Landscapes which possess few or no indicators of value.	Low

Table 9.1: Interpretation of Landscape Designations

Designation	Value

Natural Heritage	Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest. Presence of wildlife and habitats that contribute to the sense of place. Landscape which contains valued natural capital assets that contribute to ecosystem services.
Cultural Heritage	Landscape with clear evidence of archaeological, historical or cultural interest. Landscape which contributes to the significance of heritage assets. Landscape which offers a dimension of time depth.
Landscape Condition	Landscape which is in a good physical state both with regard to individual elements and overall landscape structure. Absence of detracting/incongruous features.
Associations	Landscape which is connected with notable people, events and the arts.
Distinctiveness	Landscape that has a strong sense of identity or place. Presence of distinctive features that are characteristic of a place, or presence of rare/unusual features that confer a strong sense of place. Includes landscape that makes an important contribution to the character or identity of a settlement.
Recreational	Landscape offering recreational opportunities where experience of landscape is important. Includes open access areas, common land and rights of way where appreciation of the landscape is an important element of the experience. Landscape that forms part of a view that that is important to the enjoyment of a recreational activity.
Perceptual (Scenic)	Landscape that appeals to the senses, primarily the visual sense. Distinctive features, or distinctive combinations of features. Strong aesthetic qualities. Visual diversity or contrasts. Memorable/distinctive views or landmarks, or landscape that contributes to these.
Perceptual (Wildness and Tranquillity)	Landscape with a strong perceptual value notably remoteness, wildness, tranquillity and/or dark skies.
Functional	Landscape which performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape. Natural hydrological systems, important parts of the green infrastructure network, pollinator rich habitats. Landscapes that have strong physical or functional links with an adjacent national landscape designation or are important to the appreciation of the designated landscape and its special qualities.

Table 9.2: Factors Considered in Assessing the Value of Non-Designated Landscapes

Susceptibility of Landscape Receptors to Change

As set out in GLVIA3, susceptibility refers to the ability of the landscape receptor to *"accommodate the proposed development without undue adverse consequences for the baseline situation and/or the achievement of landscape planning policies and strategies"*. Judgement of susceptibility is particular to the specific characteristics of the proposed development and the ability of a particular landscape or feature to accommodate the type of change proposed, and makes reference to the criteria set out in **Table 9.3** below. Aspects of the character of the landscape that may be affected by a particular type of development include landform, skylines, land cover, enclosure, human influences including settlement pattern and aesthetic and perceptual aspects such as the scale of the landscape, its form, line, texture, pattern and grain, complexity, and its sense of movement, remoteness, wildness or tranquillity. They will vary with the type of development in question.

For example, an urban landscape which contains a number of industrial buildings may have a low susceptibility to buildings of a similar scale and character. Conversely a rural landscape containing only remote farmsteads is likely to have a high susceptibility to large scale built development.

Susceptibility	Criteria
High	The landscape receptor is highly susceptible to the proposed development because the key characteristics of the landscape have no or very limited ability to accommodate it without transformational adverse effects, taking account of the existing character and quality of the landscape.
Medium	The landscape receptor is moderately susceptible to the proposed development because the relevant characteristics of the landscape have some ability to accommodate it without transformational adverse effects, taking account of the existing character and quality of the landscape.
Low	The landscape receptor has low susceptibility to the proposed development because the relevant characteristics of the landscape are generally able to accommodate it without transformational adverse effects, taking account of the existing character and quality of the landscape.

Table 9.3: Landscape Receptor Susceptibility to Change

Defining Sensitivity

As noted above, the sensitivity of landscape receptors is defined in terms of the relationship between value and susceptibility to the proposed change, as indicated in **Plate 9.1** and **Table 9.4**. These summarise the general nature of the relationship but the combination of the two factors is not formulaic. **Table 9.4** provides examples of common combinations but is not comprehensive and other combinations may be judged appropriate. Professional judgement is applied on a case by case basis in determining the sensitivity of individual receptors with the diagram and table only serving as a guide.

Where, taking into account the component judgements about the value and susceptibility of the landscape receptor, sensitivity is judged to lie between levels, an intermediate assessment of high/medium or medium/low may be adopted. In a few limited cases a category of less than low (very low) may be used where the landscape is of low value and susceptibility is particularly low.

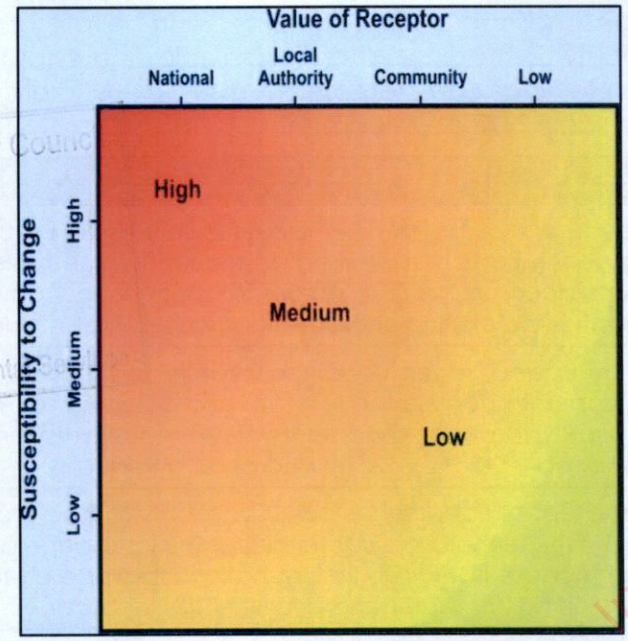

Plate 9.1: Levels of Sensitivity defined by Value and Susceptibility of Landscape Receptors

Sensitivity	Criteria
High	The landscape receptor is of international or national value and is considered to have high susceptibility to the effects of the proposed development OR The landscape receptor is of national value and is considered to have medium susceptibility to the effects of the proposed development OR The landscape receptor is of local authority value and is considered to have high susceptibility to the effects of the proposed development
Medium	The landscape receptor is of international or national value and is considered to have low susceptibility to the effects of the proposed development OR The landscape receptor is of local authority value and is considered to have medium susceptibility to the effects of the proposed development OR The landscape receptor is of community value and is considered to have high susceptibility to the effects of the proposed development
Low	The landscape receptor is of local authority value and is considered to have low susceptibility to the effects of the proposed development OR The landscape receptor is of community value and is considered to have medium susceptibility to the effects of the proposed development OR The landscape receptor is of community value and is considered to have low susceptibility to the effects of the proposed development

Table 9.4: Levels of Sensitivity defined by Value and Susceptibility of Landscape Receptors

9.2.3.2 Magnitude of Landscape Change

The magnitude of landscape change is established by assessing the size or scale of change, the geographical extent of the area influenced and the duration and potential reversibility of the change.

Size and Scale of Change

The size and/or scale of change in the landscape takes into consideration the following factors:-

- the loss or addition of landscape elements; and/or;
- the degree to which aesthetic/perceptual aspects are altered; and
- whether this is likely to change the key characteristics of the landscape.

The criteria used to assess the size and scale of landscape change are based upon the amount of change that will occur as a result of the proposed development, as described in **Table 9.5** below.

Category	Description
Large level of landscape change	There would be a large level of change in landscape character, and especially to the key characteristics if, for example, the proposed development:- • becomes a dominant feature in the landscape, changing the balance of landscape characteristics; and/or • would dominate important visual connections with other landscape types, where this is a key characteristic of the area.
Medium level of landscape change	There would be a medium level of change in landscape character, and especially to the key characteristics if, for example:- • the proposed development would be more prominent but would not change the overall balance or composition of the landscape; and/or • key visual connections to other landscape types may be interrupted intermittently by the proposed development, but these connections would not be dominated by them.
Small level of landscape change	There would be a small level of change in landscape character, and especially to the key characteristics if, for example:- • there would be no introduction of new elements into the landscape and the proposed development would not significantly change the composition/balance of the landscape.
Negligible level of landscape change/ No change	There would be a negligible level of change in landscape character, and especially to the key characteristics if, for example, the proposed development would be a small element and/or would be a considerable distance from the landscape receptor/ the proposed development will cause no change to the landscape.

Table 9.5: Size/Scale of Landscape Change

Geographical Extent of Change

The geographical extent of landscape change is assessed by determining the area over which the changes will influence the landscape, as set out in **Table 9.6**. For example, this could be at the site level, in the immediate setting of the site, or over some or all of the landscape character types or areas affected.

Category	Description
Large extent of landscape change	The change will affect all or the majority of the landscape receptor under consideration.
Medium extent of landscape change	The change will affect approximately half of the landscape receptor under consideration.
Small extent of landscape change	The change will affect a small extent of the landscape receptor under consideration.
Negligible extent of landscape change	The change will affect only a limited or negligible extent of the landscape receptor under consideration.

Table 9.6: Geographical Extent of Change

Duration and Reversibility of Change

The duration of the landscape change is categorised in **Table 9.7** below, which considers whether the change will be permanent and irreversible or temporary and reversible. The levels of duration are based on the EPA *Guidelines on the information to be contained in Environmental Impact Assessment Reports* (2022).

Category	Description
Permanent/ Irreversible	Change that will last for over 60 years and is deemed permanent or irreversible.
Long-term reversible	Change that will last between 15 and 60 years and is potentially, or theoretically reversible.
Medium-term reversible	Change that will last between 7 and 15 years and is wholly or partially reversible.
Temporary/ Short-term reversible	Change that will last from 0 to 7 years and is reversible - includes construction effects.

Table 9.7: Duration and Reversibility

Deciding on Overall Magnitude of Landscape Change

The relationships between the three factors that contribute to assessment of the magnitude of landscape effects are illustrated graphically, as a guide, in **Plate 9.2** below. Various combinations are possible and the overall magnitude of each effect is determined using professional judgement rather than by formulaic application of the relationships in the diagram.

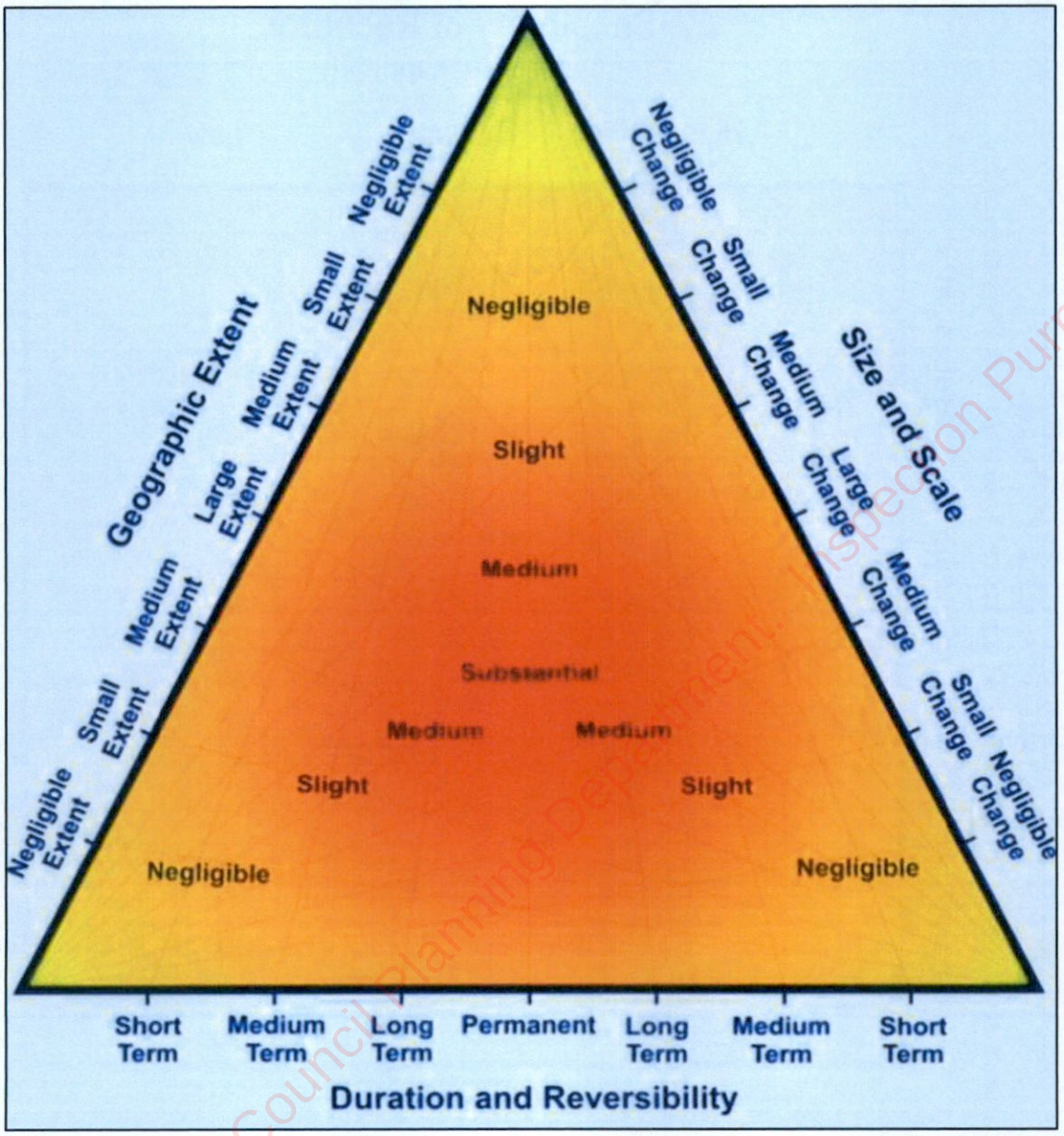

Plate 9.2: Determining the Magnitude of Landscape Change

9.2.3.3 Assessment of Landscape Effects and Significance

The assessment of landscape effects, and whether these are significant or not significant, is defined in terms of the relationship between the sensitivity of the landscape receptors and the magnitude of the change. The diagram below (**Plate 9.3**) summarises the nature of the relationship but it is not formulaic. Judgements are made about each landscape effect using this diagram as a guide.

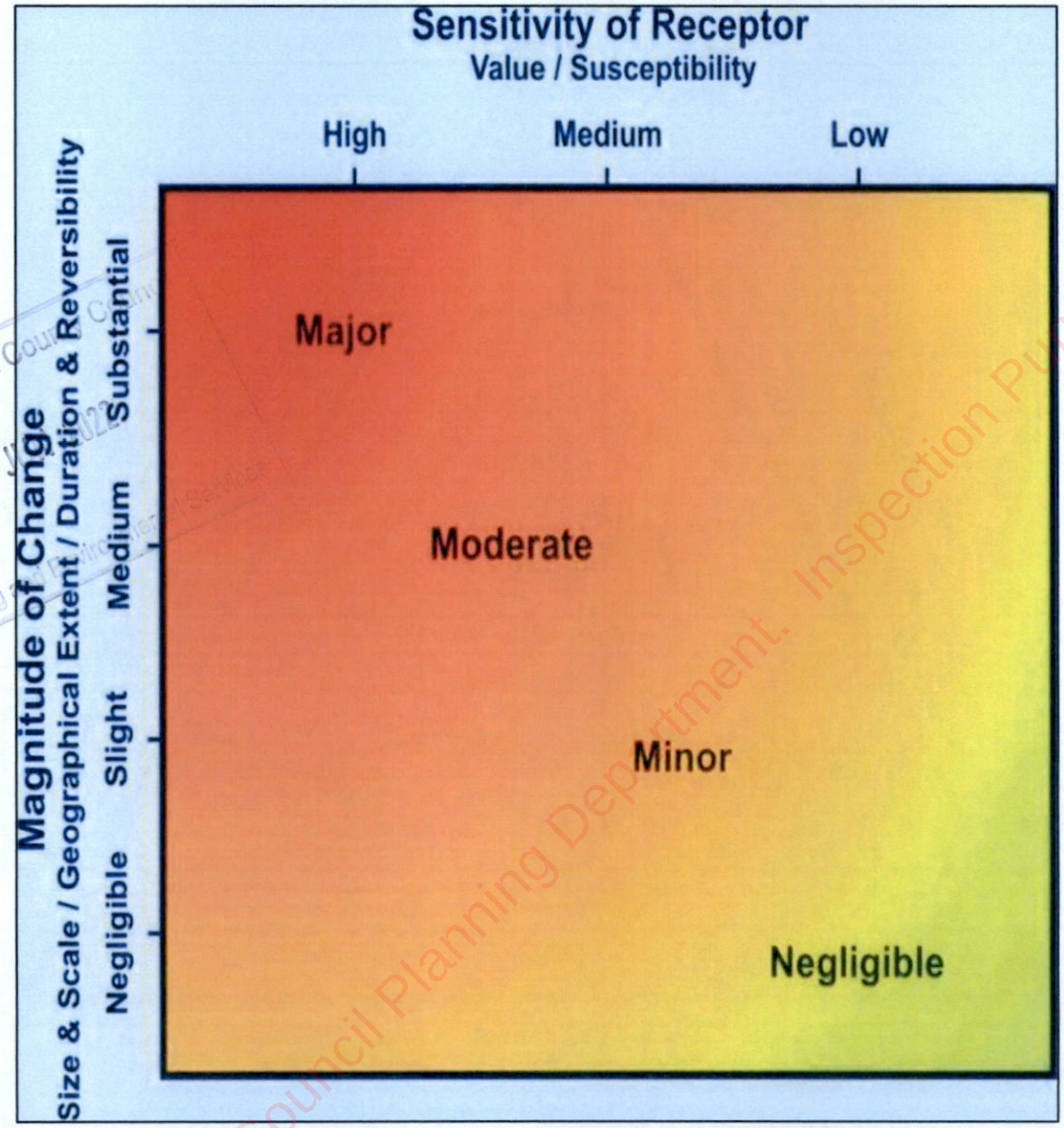

Plate 9.3: Assessment of Landscape Effects and Overall Significance

Effects that fall in the red (darker) section of the diagram, that is those which are assessed to be major and major/moderate effects by virtue of the more sensitive receptors and the greater magnitude of effects, are generally assessed to be the significant landscape effects. Those effects falling outside the major or major/ moderate categories are generally assessed to be not significant. However, it should be noted that GLVIA3 states *"there are no hard and fast rules about what effects should be deemed significant"* and in some cases professional judgement may determine that a moderate effect is significant. Moderate effects are considered individually on a case by case basis, to determine whether each effect is assessed to be significant or not significant. In determining whether moderate effects are or are not significant, particular attention is given to the constituent judgements leading to the assessment of a moderate effect and particularly to value, susceptibility and size/scale of effect, and in addition whether the effect is found across a number of receptors or in a pattern that intensifies the overall impact.

9.2.4 Visual Effects

Visual effects are the effects of change and development on the views available to people and their visual amenity. Visual receptors are the people whose views may be affected by the proposed development. They may include:-

- Communities within settlements (i.e. towns and villages);
- Residents of individual properties and clusters of properties outside settlements;
- People using nationally designated or regionally promoted footpaths and cycle routes;
- Visitors at publicly accessible sites including, for example, gardens and designed landscapes, historic sites, and other visitor attractions or outdoor recreational facilities where the landscape or seascape is an important part of the experience;
- Users of outdoor sport and recreation facilities;
- Visitors staying at caravan parks or camp sites;
- Road users on recognised scenic or promoted tourist routes;
- Travellers using other roads who may pass through the study area because they are visiting, living or working there;
- Rail passengers; and/or
- People at their place of work.

Judging visual effects requires a methodical assessment of the sensitivity of the visual receptors to the proposed development and the magnitude of effect which would be experienced by each receptor.

Viewpoints are chosen for a variety of reasons but most commonly because they represent views experienced by relevant groups of people although they may also include specific promoted or otherwise important viewpoints.

9.2.4.1 Visual Sensitivity

Sensitivity of visual receptors is assessed by combining an assessment of the susceptibility of visual receptors to the type of change which is proposed with the value attached to the views. (GLVIA3, paragraph 6.30).

Value Attached to Views

Different levels of value are attached to the views experienced by particular groups of people at particular viewpoints. Assessment of value takes account of a number of factors, including:-

- Recognition of the view through some form of planning designation or by its association with particular heritage assets;
- The popularity of the viewpoint, in part denoted by its appearance in guidebooks, literature or art, or on tourist maps, by information from stakeholders and by the evidence of use including facilities provided for its enjoyment (seating, signage, parking places, etc.); and
- Other evidence of the value attached to views by people including consultation with local planning authorities, some of whom have carried out assessments of valued views, and professional assessment of the quality of views.

The assessment of the value of views is summarised in **Table 9.8** below. These criteria are provided for guidance only.

Value	Criteria
High	Views from nationally (and in some cases internationally) known viewpoints, which:- • have some form of planning designation; or • are associated with internationally or nationally designated landscapes or important heritage assets; or • are promoted in sources such as maps and tourist literature; or • are linked with important and popular visitor attractions where the view forms a recognised part of the visitor experience; or • have important cultural associations. Also, may include views judged by assessors to be of high value.
Medium	Views from viewpoints of some importance at regional or local levels, which:- • have some form of local planning designation associated with locally designated landscapes or areas of equivalent landscape quality; or • are promoted in local sources; or • are linked with locally important and popular visitor attractions where the view forms a recognised part of the visitor experience; or • have important local cultural associations. Also, may include views judged by assessors to be of medium value.
Low	Views from viewpoints which, although they may have value to local people:- • have no formal planning status; or • are not associated with designated or otherwise high-quality landscapes; or • are not linked with popular visitor attractions; or • have no known cultural associations. Also, may include views judged by assessors to be of low value.

Table 9.8: Examples of Factors Considered in assessing the Value Attached to Views

Where judgements are made about the value attached to views experienced by residential receptors, the following considerations also apply:-

- Views in a rural or designed context (e.g. an avenue of trees or designed view from a parkland), especially if associated with landscapes of national or local authority value, where residential receptors are positioned to take advantage of the views, will generally be assessed to be of high value;
- Views in a semi-rural or general townscape context, and/or where locations of residential receptors are not positioned to take full advantage of views, will generally be assessed of medium value; and
- Views in an urban/industrial context, and/or where locations of residential receptors are not positioned to take advantage of views, will generally be assessed of low value.

Susceptibility of Visual Receptors to Change

The susceptibility of different types of people to changes in views is mainly a function of:-

- The occupation or activity of the viewer at a given viewpoint; and
- The extent to which the viewer's attention or interest be focussed on a particular view and the visual amenity experienced at a given view.

The susceptibility of different groups of viewers is assessed with reference to the guidance in **Table 9.9 below. However, as noted in GLVIA3 "this division is not black and white and, in reality, there will be a gradation in susceptibility to change".** Therefore, the susceptibility of each group of people affected is considered for each project and assessments are included in the relevant text in the report.

Susceptibility	Criteria
High	• Residents; • People engaged in outdoor recreation where their attention is likely to be focused on the landscape and on particular views; • Visitors to heritage assets or other attractions where views of the surroundings are an important part of the experience; and • Communities where views contribute to the landscape setting enjoyed by the residents.
Medium	• Travellers on scenic routes where the attention of drivers and passengers is likely to be focused on the landscape and on particular views; and • People engaged in outdoor sport or recreation, which may involve appreciation of views e.g. users of golf courses.
Low	• People engaged in outdoor sport or recreation, which does not involve appreciation of views; • People at their place of work whose attention is focused on their work; where the setting is not important to quality of working life; and • Travellers, where the view is incidental to the journey.

Table 9.9: Visual Receptor Susceptibility to Change

Defining Sensitivity

As noted above, the sensitivity of visual receptors is defined in terms of the relationship between the value of views and susceptibility of the different receptors to the proposed change, as indicated in **Plate 9.4** and **Table 9.10**. These summarise the general nature of the relationship but the combination of the two factors is not formulaic. **Table 9.10** provides examples of common combinations but is not comprehensive and other combinations may be judged appropriate. Professional judgement is applied on a case by case basis in determining the sensitivity of individual receptors with the diagram and table only serving as a guide.

Where, taking into account the component judgements about the value and susceptibility of the visual receptor, sensitivity is judged to lie between levels, an intermediate assessment of high/medium or medium/low may be adopted. In a few limited cases a category of less than low (very low) may be used where the visual receptor is of low value and susceptibility is particularly low.

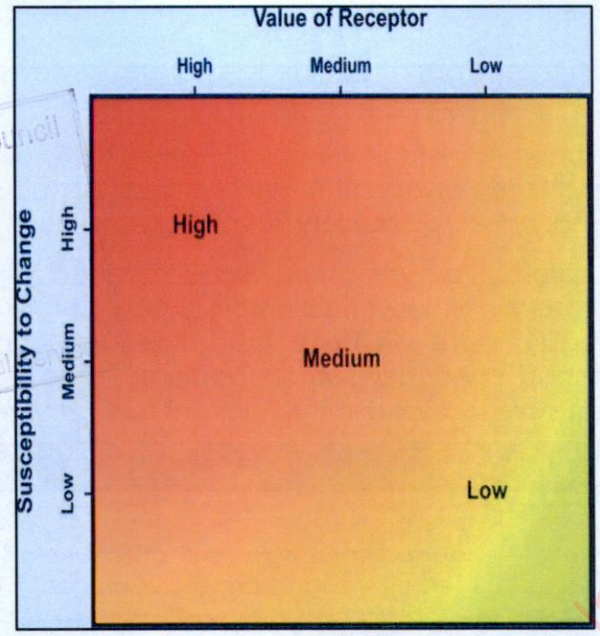

Plate 9.4: Levels of Sensitivity Defined by Value and Susceptibility of Visual Receptor Groups

Sensitivity	Criteria
High	The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of high value OR The visual receptor group has a medium level of susceptibility to changes in views and visual amenity and relevant views are of high value OR The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of value at the medium level
Medium	The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of value at the low level OR The visual receptor group has a medium level of susceptibility to changes in views and visual amenity and relevant views are of value at the medium level OR The visual receptor group has a low level of susceptibility to changes in views and visual amenity and relevant views are of value at the high level
Low	The visual receptor group has a medium level of susceptibility to changes in views and visual amenity and relevant views are of value at the low level OR The visual receptor group has a low level of susceptibility to changes in views and visual amenity and relevant views are of value at the medium level OR The visual receptor group has a low level of susceptibility to changes in views and visual amenity and relevant views are of value at the low level

Table 9.10: Levels of Sensitivity defined by Value and Susceptibility of Visual Receptor Groups

9.2.4.2 Magnitude of Visual Change

The magnitude of visual change is established by assessing the size or scale of change, the geographical extent of the area influenced and the duration and potential reversibility of the change. Representative viewpoints are used as 'sample' points to assess the typical change experienced by different groups of visual receptors at different distances and directions from the proposed development.

Size and Scale of Change

The criteria used to assess the size/scale of visual change are as follows:-

- the scale of the change in the view with respect to the loss or addition of features in the view, changes in its composition, including the proportion of the view occupied by the proposed development and distance of view;
- the degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of factors such as form, scale and mass, line, height, colour and texture; and
- the nature of the view of the proposed development, for example whether views will be full, partial or glimpses or sequential views while passing through the landscape.

The above criteria are summarised in the **Table 9.11**.

Category	Description
Large visual change	The proposed development will cause a complete or large change in the view, resulting from the loss of important features in or the addition of important new ones, to the extent that this will substantially alter the composition of the view and the visual amenity it offers.
Medium visual change	The proposed development will cause a clearly noticeable change in the view, resulting from the loss of features or the addition of new ones, to the extent that this will alter to a moderate degree the composition of the view and the visual amenity it offers. Views may be partial/intermittent.
Small visual change	The proposed development will cause a perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this will partially alter the composition of the view and the visual amenity it offers. Views may be partial only.
Negligible visual change	The proposed development will cause a barely perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this will barely alter the composition of the view and the visual amenity it offers. Views may be glimpsed only.
No change	The proposed development will cause no change to the view.

Table 9.11: Size/Scale of Visual Change

Geographical Extent of Change

The geographical extent of the visual change identified at representative viewpoints is assessed by reference to a combination of the ZTV, where this has been prepared, and field work. The way that geographical extent is assessed varies with circumstances.

Most commonly, a number of representative viewpoints are used as 'sample' points to assess the typical change experienced by a particular group of visual receptors in

locations at different distances and directions from the proposed development. In such cases, the geographical extent of the visual change is judged for each group of receptors (for example, people using a particular route or public amenity) drawing on the relevant viewpoint assessments, plus information about the approximate number and distribution of that particular group of people in the Study Area. For example, the geographical extent would be small if the change is experienced at only one or two locations and/or by a smaller number of viewers. Community views may, for example, be experienced from a small number of dwellings, or affect numerous properties in the community, or several different communities. Similarly, changes to a view from a public footpath may be visible from a single isolated viewpoint (small geographical extent), or over a prolonged stretch of the route (large geographical extent).

In the case of individual (rather than representative) viewpoints in a specific location, the following factors (as noted in GLVIA3), are considered in judging geographical extent:-

- the angle of view in relation to the main activity of the receptor;
- the distance of the viewpoint from the proposed development; and
- the extent of the area over which changes would be visible.

For example; from an elevated area of open access land, the proposed development may be widely visible from much or all of the accessible area, be close to it and so occupy a wide angle of the view, suggesting large geographical extent. Alternatively, the proposed development may be visible from only a small proportion of the area, be quite distant from it and so occupy a small proportion of the view, suggesting small geographical extent.

Table 9.12 describes the most common categories of geographical extent based on these two approaches

Category	Description
Large extent of visual change	Either: The proposed development is seen by the group of receptors in many locations across the Study Area or from the majority, or a large proportion, of a linear route and/or by large numbers of viewers; Or: The proposed development is visible from much or all of a specific site is close to it and so occupies a wide angle of the view.
Medium extent of visual change	Either: The proposed development is seen by the group of receptors in several locations across the Study Area or from a moderate proportion of a linear route and/or by moderate numbers of viewers; Or: The proposed development is visible from a moderate part of a specific site, is at a moderate distance from it and so occupies a moderate angle of the view.
Small extent of visual change	Either: The proposed development is seen by the group of receptors at a small number of locations across the Study Area or from limited sections of a linear route and/or by a small numbers of viewers; Or: The proposed development is visible from a small part of a specific site, is at some distance from it and so occupies a small angle of the view.
Negligible extent of visual change	Either: The proposed development is not visible in the Study Area or is seen by the group of receptors at only one or two locations or from a very short length of a linear route and/or by a very small number of viewers; Or: The proposed development is visible from only a very small part of a site, is at a considerable distance from it and so occupies a very small angle of the view.

Table 9.12: Geographical Extent of Change

Duration and Reversibility of Change

The duration of the visual change at viewpoints is categorised in **Table 9.13** below, which considers whether views will be permanent and irreversible or temporary and reversible. The levels of duration are based on the EPA *Guidelines on the Information to be contained in Environmental Impact Assessment Reports* (2022).

Category	Description
Permanent/ Irreversible	Change that will last for over 60 years and is deemed permanent or irreversible.
Long-term reversible	Change that will last between 15 and 60 years and is potentially, or theoretically reversible.
Medium-term reversible	Change that will last between 7 and 15 years and is wholly or partially reversible.
Temporary/ Short-term reversible	Change that will last from 0 to 7 years and is reversible - includes construction effects.

Table 9.13: Duration and Reversibility

Deciding on Overall Magnitude of Visual Change

The relationships between the three factors that contribute to assessment of the magnitude of visual effects are illustrated graphically, as a guide, in **Plate 9.5** below. Various combinations are possible and the overall magnitude of each effect is made using professional judgement rather than by formulaic application of the relationships in the diagram.

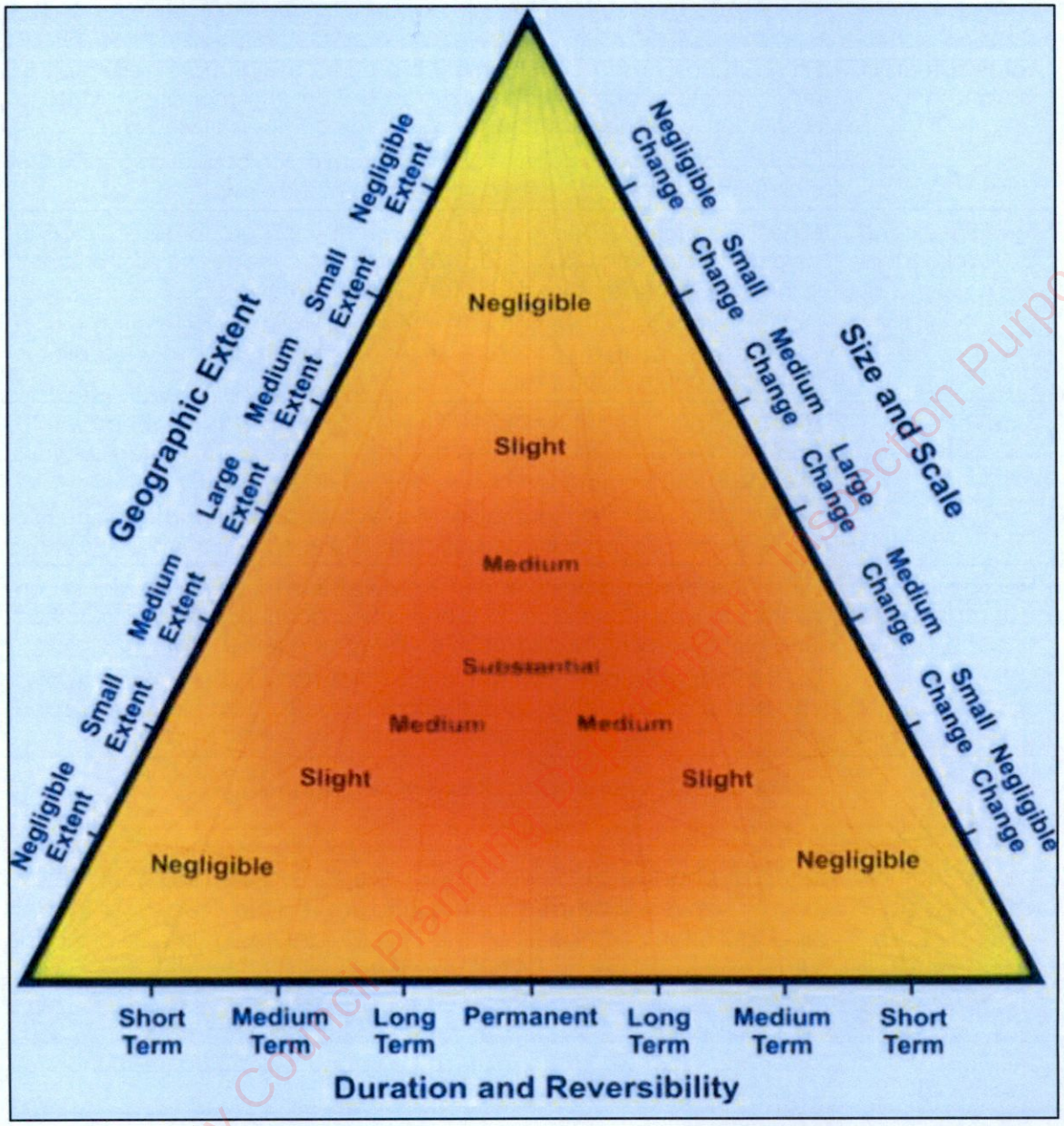

Plate 9.5: Determining the Magnitude of Visual Change

9.2.4.3 Assessment of Visual Effects and Significance

The assessment of visual effects, and whether these are significant or not significant, is defined in terms of the relationship between the sensitivity of the visual receptors and the magnitude of the change. The diagram below (**Plate 9.6**) summarises the nature of the relationship, but it is not formulaic and only indicates broad levels of effect. Judgements are made about each visual effect using this diagram as a guide.

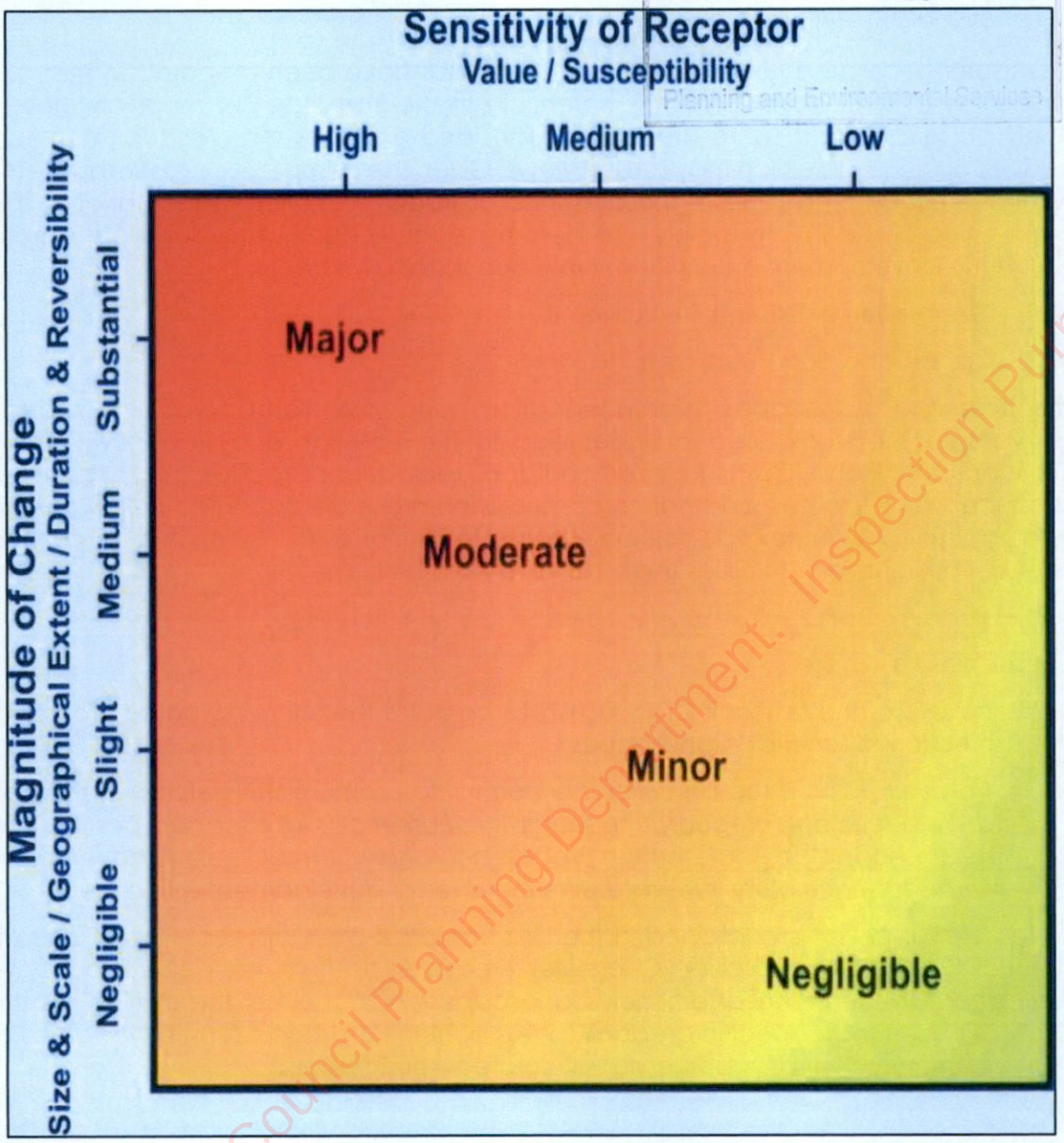

Plate 9.6: Assessment of Visual Effects and Overall Significance

Effects that fall in the red (darker) section of the diagram, that is those which are assessed to be major and major/moderate effects by virtue of the more sensitive receptors and the greater magnitude of effects, are generally assessed to be the significant visual effects. Those effects falling outside the major or major/ moderate categories are generally assessed to be not significant. However, it should be noted that GLVIA3 states 'there are no hard and fast rules about what effects should be deemed significant' and in some cases professional judgement may determine that a moderate effect is significant. Moderate effects are considered individually on a case by case basis, to determine whether each effect is assessed to be significant or not significant. In determining whether moderate effects are or are not significant, particular attention is given to the constituent judgements leading to the assessment of a moderate effect and particularly to value, susceptibility and size/scale of effect, and in addition whether the effect is found across a number of receptors or in a pattern that intensifies the overall impact.

9.2.5 ZTV Methodology

Computer-generated (Resoft WindFarm) ZTV maps have been prepared to illustrate where the existing development is potentially visible from. The ZTV maps are based solely on terrain data (bare ground visibility), and excludes features such as trees, hedges or buildings, which may screen views. Given the complex vegetation patterns within the Study Area (due to the presence of tracts of coniferous plantations), the main value of the ZTV mapping is to determine those parts of the landscape from which the development is definitely visible due to terrain screening.

9.3 Description of Existing Environment

9.3.1 Landscape and Visual Designations

The following landscape/visual designations and associated planning policies relevant to the study area are identified in the Limerick and Tipperary County Development Plans (CDP). Relevant outdoor recreational facilities, such as long-distance walking routes, and nature conservation areas are also listed below. Please refer to **Figure 9.1** (**Annex 9.1**; **Volume II**) for an illustration of the location/extent of the relevant designations/facilities (highlighted in bold below).

9.3.1.1 Limerick CDP 2010-2016

Landscape Character

Section 7.3.3. of the Limerick CDP 2010-2016 contains the following policy regarding **the protection of Limerick's landscapes:-**

> *"Policy EH P2: It is the policy of the Council to promote the distinctiveness and **where necessary safeguard the sensitivity of Limerick's landscape types through** the landscape characterisation process and also where possible to develop the **means to successfully integrate differing kinds of development within them."***

A very similar policy is contained in the Draft Limerick Development Plan 2022-2028 (i.e. Policy EH P8 – Landscape Character Areas). Aside from this general policy to ***"safeguard the sensitivity of Limerick's landscape types"***, neither the existing nor the Draft CDP designate specific areas as 'areas of high landscape sensitivity', 'areas of special amenity', 'landscape conservation areas' or similar.

Views & Prospects

The Views & Prospects to be protected within Co. Limerick are shown on Map 7.6 of the current CDP. This includes a route along local roads to the east and north of the village of Murroe, approximately 9.5km to the west of the proposed development site. The ZTV mapping indicates that there is no visibility of the proposed development from any section of these protected views & prospects and this designation was therefore scoped out from further assessment.

The Draft Limerick City & County Development Plan 2022-2028 contains the following objective with regard to Views and Prospects.

> *"Objective EHO30 – Views and Prospects: It is an objective of the Council to:*
>
> *a) Preserve, protect and encourage the enjoyment of views and prospects of special amenity value or special interests and to prevent development, which would block or otherwise interfere with views and/or prospects.*
>
> *b) In areas where scenic views and prospects are listed in the Draft Plan, there will be a presumption against development, except that required to facilitate*

farming and appropriate tourism and related activities. The development must be appropriately designed so that it can be integrated into the landscape."

Map 5-2 of the Draft CDP shows the same Views & Prospects as those contained in the current CDP, including the one near Murroe, but no others of relevance to the proposed development.

9.3.1.2 Tipperary CDP

Primary and Secondary Amenity Areas

Both the South Tipperary CDP 2009 (as varied) and the North Tipperary CDP 2010 (as varied) contain the following policy:-

"Policy LH2: Protection of Visual Amenity and Character of Primary and Secondary Amenity Areas

It is the policy of the Council to ensure the protection of the visual amenity, landscape quality and character of designated Primary and Secondary Amenity Areas. Developments which would have an adverse material impact on the visual amenities of the area will not be permitted. New development shall have regard to the following:-

a) Developments should avoid visually prominent locations and be designed to use existing topography to minimise adverse visual impact on the character of primary and secondary amenity areas.

b) Buildings and structures shall ensure that the development integrates with the landscape through careful use of scale, form, finishes and colour.

c) Existing landscape features, including trees, hedgerows and distinctive boundary treatment shall be protected and integrated into the design proposal.

d) Developments shall comply with the development standards set out in Chapter 10 and, as appropriate, the Rural Housing Design Guidelines contained in Appendix 5."

The entire County Tipperary upland landscape within 14km to the north and 15km to the east of the proposed development site is designated as a Secondary Amenity Area.

The Draft Tipperary CDP 2022-2028 designates the same Primary and Secondary Amenity Areas and contains very similar planning policy provisions.

Views of Scenic Value

Both the South Tipperary CDP 2009 (as varied) and the North Tipperary CDP 2010 (as varied) contain the following policy:-

"Policy LH3: Protection of Views of Scenic Value

It is the policy of the Council to protect and enhance views identified in Appendix 4: Listed Views in Tipperary, and views to and from lakelands and waterways. The Council will not permit development which would obstruct or have a significant adverse impact on these views."

The following two Listed Views are located within the study area, both of which are contained in the North Tipperary CDP 2010. Their numbers are therefore marked with

'TN' for clarification, below and on **Figure 9.1**. The extent of each of these listed views, as shown on **Figure 9.1**, is taken from Figure 1 in Appendix II of the consolidated Tipperary Landscape Character Assessment 2016. Please note that this designation comprises multiple viewpoints along the named sections of road, rather than individual viewpoints from specific locations. Viewpoints A, E, F and G on **Figures 9.4, 9.6 & 9.7** (**Annex 9.1**) represent views from the listed sections of road:-

- V12 TN - Views north and south on sections of the R503 from Newport to Ballycahill; and
- V13 TN - Views east and west of the R497 from the R503 through the mountains to Dolla Silvermines to the west.

Please note that while there is another listed view c. 6.5km to the south-east of the proposed development site (V036 TS, as listed in the South Tipperary CDP 2009), this is located outside the study area. The ZTV mapping does not indicate any visibility from anywhere along this route and it was therefore scoped out from further assessment.

The numbering and extent of listed views was revised in the Draft Tipperary CDP 2022-2028, as detailed in the **'Schedule of Views and Routes'** contained in Appendix 3 of the Draft CDP. The changes are as follows:-

- V12 TN is proposed to be renumbered 'V55' and covers all views *"North and South of the R503 from Newport to Ballycahill"*, not only sections of it; and
- V13 TN is proposed to be renumbered 'V56' and includes a slightly larger section with views **"East and West of the R497"**.

9.3.1.3 Outdoor Recreational Facilities

Parts of the Slieve Felim Way long-distance walking route and the Glenstal Loop traverse the upland areas within 3.5-10km to the west/north-west of the proposed development site. The ZTV mapping indicates potential visibility of the development from a number of short sections of these walking routes, however, the majority of these are located within existing forestry plantations. Therefore, the actual visibility from these routes is likely to be minimal due to the screening effect of existing vegetation. The visual effects on users of these routes are nevertheless assessed as part of the description of likely effects, below.

The Multeen Way long-distance walking route and the Kilcommon Pilgrim Loop traverse the upland areas within 4-8km to the east/north-east of the proposed development site. The ZTV mapping indicates potential visibility of the development from a number of short sections of these walking routes, most of which are located within existing forestry plantations, reducing the actual visibility from these routes further. The visual effects on users of these routes are assessed as part of the description of likely effects, below

9.3.1.4 Nature Conservation Areas

Large sections of the upland areas and river valleys surrounding the proposed development site are protected by a range of nature conservation designations, indicating the associated ecological value. The proposed development site itself is located within the Slievefelim to Silvermines Mountains Special Protection Area (SPA – Site Code 004165). Further information on nature conservation sites within the study area is provided at **Chapter 5**.

9.3.2 Landscape Baseline

9.3.2.1 Landscape Character Assessments

County Limerick

The current Limerick CDP contains short descriptions of 10 no. Landscape Character Areas (LCAs) which were identified for the county. No details regarding the value, sensitivity or importance of the different LCAs is provided.

The proposed development site is fully located within LCA 8 – Slieve Felim Uplands. This LCA extends to the county boundary within 1km to the north and east of the proposed development site and covers the upland area, approximately above the 100m contour, within 6-12km to the south and west of the site. The description of LCA 8 is as follows:-

> *"The Slieve Felim Hills located in the north east of the County are the most dominant feature in this part of the County. Though not particularly high (the most important peak is 395m), it is because of the low-lying surrounding landscape that they appear such a dominant feature. The hills themselves are rounded in shape lacking the starkness that some of the Galtee range to the south possess, and are generally pastoral in character in that almost all the hills show evidence of enclosure for agricultural purposes, with a well-developed field boundary system in place."*

An objective regarding residential/agricultural development within LCA 8 is provided (*Objective EH O14: Slieve Felim Landscape Character Area*). However, there is no reference to wind energy development.

LCA 8 is adjoined to the south-west by LCA 1 – Agricultural Lowlands, which covers the majority of County Limerick and also the remainder of the study area within this county. The description of LCA 1 is as follows:-

> *"This is the largest of the Landscape Character Areas in the County and comprises almost the entire central plain. This landscape is a farming landscape and is defined by a series of regular field boundaries, often allowed to grow to maturity. This well developed hedgerow system is one of its main characteristics. In terms of topography the landscape is generally rather flat with some locally prominent hills and ridges. The pastoral nature of the landscape is reinforced by the presence of farmyards."*

The extent, descriptions and objectives of the relevant LCAs are almost identical in the Draft Limerick Development Plan 2022-2028.

County Tipperary

The *Landscape Character Assessment of Tipperary 2016* contains detailed descriptions of 23 no. LCAs, which were identified for the county. This includes descriptions of the Landscape Characteristics, Landscape Values and Principles for Management. The Limerick Slieve Felim Uplands LCA 8 is adjoined to the east of the county boundary by the Tipperary LCA 17 – Upperchurch/Kilcommon & Hollyford Mountain Mosaic, which is described as a forested foothills Landscape Character Type (LCT). To the north of the county boundary, the Limerick LCA 8 is adjoined by the Tipperary LCA 18 – Silvermines – Rearcross, described as a mountain & uplands LCT. Each of the two LCAs has been afforded a range of sensitivities, i.e. the sensitivity depending on the exact location. Hovewever, Class 3 – Sensitive, on a range of 0-5, is identified as the dominant one. Furthemore, the compatibility of both LCAs, i.e. LCA

17 and LCA 18, with wind farm development is classed as high. The Landscape Character Assessment document states that "*'Compatibility' refers to the likelihood that a particular development has the potential to give rise to significant visual effects on the landscape [Least Compatible] versus developments that have a low potential [Most Compatible].*"

The detailed description of LCA 17 contains the following paragraphs, of relevance to the landscape baseline within the study area:-

Landscape Characteristics: "*The non-linear arrangement of the hills and valleys that constitute the area, resulting in a less abrupt transition from uplands to plains than elsewhere in the County. Conversely, the landform of the central portion of the area is complex. The area was previously more extensively farmed and is relatively accessible by local road, but the limited land capability has resulted in a change in land cover from the once typical marginal mountain mosaic of pasture and rough grazing towards the contemporary equivalent, incorporating forestry*

- *complex arrangement of rounded hills and steep sided valleys becoming less pronounced and enclosed towards the south and east…*
- *linear uplands to the south*
- *Sparsely populated particularly in central area with remote character…*
- *Cluster of prehistoric graves around Rearcross-Kilcommon creating a distinct archaeological landscape of significant value…*"

Distinctive Features: "…

- *varying degree of enclosure / exposure in the landscape, but distinctly more contained than elsewhere in the County, especially towards the north and west*
- *Upland Forestry Plantation*
- *Marginal Mountain Mosaic*
- *Otherwise random land cover / use pattern, with forestry at lower altitudes than pasture in some areas*
- *plantations extending right over the hilltops, thus excluding the moorland areas found elsewhere…*"

Landscape Values: "…

- *The distinctive undulating landform of the Hills, although not particularly dramatic or of significant aesthetic amenity and recreational amenity value, is dominant in the* **characterisation of the area**…
- *The integrity and unity of the traditional landscape pattern and scale (moorland, field patterns and hedgerow vegetation), although not prominent relative to the distinctive landform, has been significantly altered by recent land cover change (forestry), giving rise to a new, equally recognisable mountain mosaic of land use…*
- *Small areas of peatland and several stretches of semi-natural vegetation on the steep valley sides of watercourses, constitute the remnants of natural habitat* **and contribute to the area's biodiversity value**…"

This is a working landscape featuring pasture as the dominant landuse in the north and forestry in parts of the south. The nature of the varying topography is such that there is a capacity to accommodate development without undue deterioration in the scenic quality. The principal contrary factor in this landscape is the coniferous forestry. Its location on hilltops causes the maximum negative visual impact. ..."

Principles for Management: *"Forces for change include commercial coniferous forestry, further development of wind energy as well as residential development as single houses or groups...*

The area is of Medium Sensitivity so Change or Development is generally acceptable as it may beneficially alter, enhance or reinforce landscape character and value (e.g. the landscape is somewhat degraded, undergoing change or the precedent for such and similar development is set and the landscape is capable of absorbing considerable change without detriment).

Design guidance in respect of commercial forestry in upland areas should be provided in order to integrate this landuse into the landscape. Criteria for the wind energy development and layout should be provided..."

The detailed description of LCA 18 contains the following paragraphs, of relevance to the landscape baseline within the study area:-

Landscape Characteristics:

- *"Highly scenic upland area with extensive views afforded from elevated locations towards the River Shannon and the northern lowlands around Nenagh.*
- *Continuum of landuses noticeable with increased elevation.*
- *Cluster of prehistoric graves around Rearcross and Kilcommon...*
- *Settlement confined to lower slopes with small nucleated settlements at Silvermines and Rearcross."*

Landform and Geology: *"...**The landform is quite distinctive with a graduation from** undulating farmed foothills and more open moorland hills on the lower elevations towards a more irregular and sharply undulating upland fringe. The summits and steeply sided upper slopes are generally composed of blanket bog and coniferous plantation and are frequently inaccessible."*

Landcover and Ecology: *"A mosaic of habitats are found within this LCA, reflecting the diversity of landuses. The lower slopes, in common with much of the County are **dominated by pasture...Elsewhere within these elevations, a mixture of rushy pasture,** improved pasture, pockets of bog and smaller scale coniferous plantations are apparent. The high number of streams and rivers that incise the slopes provide narrow strips of riparian, deciduous vegetation.*

Due to its remote and sometimes inaccessible areas, this LCA has a significant number of nature designations...The principal habitats associated with these designations relate to blanket bog, heath and unimproved grassland."

Human Influences: *"Settlement is extremely sparse on slopes above 200m in this LCA, due to the physical constraints of the landscape. Consequently, the limited tertiary roads generally traverse around the mountains on lower elevations...*

Field enclosures vary throughout this LCA. Generally the lower slopes are enclosed by bushy hedgerows with some post and wire fencing. An increasing elevation is associated with a combination of earthbanks, soil capped stone walls, and post and wire around coniferous plantations. Field boundaries on the uplands proper run parallel upslope and may be a legacy of ladder townlands. Close to the river valleys, ditches reinforced with stone slabs or very high earthbanks are also apparent and support mosses and lichens...

This LCA contains one of the most significant cluster of prehistorical features in the County. The earliest evidence for Neolithic settlement in Tipperary comes from the

large megalithic tomb at Shanballyedmond (Raleigh, 1985). ... A number are also spread across the Rearcross- Kilcommon area on the lower foothills..."

Landscape Condition and Sensitivity: *"This generally mountainous landscape is highly scenic and, at higher elevations, commands distant views. The high scenic quality of this LCA as a whole is derived from the variety of landscape features. In brief, these are the mountain moorlands, the steep sided river valleys and the pastoral foothills. Elements which detract from this landscape at higher elevations relate to the plantations of commercial coniferous forestry. These crops occupy large tracts of land and detract principally from the blanket bog covered mountain summits...*

Below mountain moorland elevation, the landscape changes quite dramatically to high foothills occupied by pasture. This results, virtually, in quite an enclosed landscape visually due to this topography. The landscape is in good condition overall. However, the presence of coniferous forestry plantations detracts from both condition and scenic quality. The forestry plantings in these foothills are generally smaller but tend to occupy hilltops and are thus visually more intrusive.

In terms of landscape designations, scenic views which are protected are gained on the R503 road route in the south western corner of this LCA."

Forces for Change:-

- *"...Wind energy potential."*

9.3.2.2 Landscape of the Site and Study Area

The proposed development site is located on the north-western slopes of Knockastanna Hill, which itself is located in the north-eastern corner of County Limerick, near the border with County Tipperary. Knockastanna's summit reaches 444m above Ordnance Datum (OD) and forms part of the Slieve Felim mountain range, which expands approximately 10km to the west and 10km to the south-east. To the north, the upland area expands over 13km with the Silvermines Mountains forming its northern edge.

Surrounding Knockastanna, the summits and ridgelines are typically of similar elevations, e.g. Cullaun to the west at 460m OD and the summit in the townland of Cummer Beg to the east at 457m OD. There are two noticeably higher peaks within the wider upland area, i.e. Mauherslieve, approximately 5km to the north at 543m OD and Keeper Hill at 694m OD, approximately 10km to the north-west.

The landcover of Knockastanna Hill is a mix of upland blanket bog, wet heath, and conifer plantations, as well as some fields of improved grassland at the lower elevations. Similarly, the proposed development site is set in an area of upland blanket bog / wet heath with a change to (improved) grassland at the lower elevations. To the north-east and south-west, blocks of conifer plantations slope up the hillside, the straight boundaries of which frame the site.

The topography within the proposed development site ranges from 240m OD at the site entrance to approximately 440m OD near the base of the uppermost turbine. The four wind turbines are placed in a straight line at regular intervals along the slope, with the lowest turbine located at approximately 330m OD. The access track to all four turbines winds up the hill due to the steepness of the slope, also passing the electrical control building at approximately 310m OD. The footprint of the access track and the hardstanding areas surrounding the electrical control building and around the turbine

bases occupy a small proportion of the proposed development site, leaving the areas of moorland and rough grassland largely undisturbed.

The core section of the study area (i.e. 5km surrounding the site) and the wider study area up to 10km to the north-west and north-east are entirely of an upland landscape character. This section of the study area covers part of Limerick LCA 8 - Slieve Felim Uplands, Tipperary LCA 17 - Upperchurch/Kilcommon & Hollyford Mountain Mosaic and Tipperary LCA 18 – Silvermines – Rearcross (see above).

A complex arrangement of rounded summits is the main characteristic of this upland area. Most of these summits are of similar heights, resulting in undulating ridgelines with no distinct focal points. Streams and rivers follow the winding valleys in between these summits.

The higher elevations (approximately above the 300m contour) are dominated by a mix of upland moorland and conifer plantations and are of a large scale. In most areas the conifer plantations slope down towards the river valleys, where they form part of a mosaic with fields of rough and improved grassland. The fields on the lower slopes are enclosed by scrubby hedgerows, sometimes lined with mature trees. The scale of the landscape within the river valleys is much smaller. In areas where roadside hedgerows are present, there is a sense of enclosure.

The long, straight boundaries of the conifer plantations and their uniform appearance are a stark contrast to the naturally rounded/undulating upland topography and to the open moorlands, which are typically unenclosed. Also, the dark uniform green of these plantations contrasts the lighter brown shades of the moorlands and the bright green of fields of improved grassland. The presence of the numerous conifer plantations in their current **'artificial'** form, reduce the otherwise scenic appearance of the landscape somewhat.

There are manmade elements present throughout the upland landscape, including the aforementioned conifer plantations, the existing four turbines associated with the Knockastanna wind farm and a large complex of third-party wind farms within 2-10km to the south-east (total of c. 66 no. turbines), as well as roads, residential properties, farm buildings and electricity lines. Nevertheless, there are many locations within the area that have perceptual qualities associated with remoteness and naturalness. This is typically the case along the local roads at higher elevations, i.e. above the 200m contour.

Due to the complex nature of the topography, the existing wind farm developments do not dominate the upland landscape. Their visibility constantly changes, and they are never all visible at one time. Also, their apparent height is typically in scale with the ridgeline/summits they are located on, i.e. the visible height of the turbines is not greater than the height the ridgelines/summits rise up from the surrounding valleys.

The remainder of the study area, i.e. between 5-20km to the south-west of the proposed development site, is of an agricultural lowland landscape character. This section of the study area covers part of Limerick LCA 1 - Agricultural Lowlands (see above).

The landscape here is dominated by improved grassland fields of varying sizes, with typically straight boundaries but of irregular shapes. Mature, often tree lined hedgerows mark the field boundaries and provide some screening in a generally flat landscape and reducing its scale. Levels for the most part range from 40-60m OD but

increase to over 100m OD and with some local summits over 200m OD along the south-western boundary of the study area.

Where hedgerows are kept low or where there are breaks in hedgerows, long-distance views open up, increasing the sense of landscape scale. The Slieve Felim Mountains frame the north-eastern edge of the lowland area and form the skyline in views in this direction. The existing wind farm developments in the adjoining upland area are visible along this skyline without dominating it. This is partly due to the distance of views and associated reduced visibility, but also because the turbines are in scale with the height of the ridgelines / summits visible.

The main road through the core section of the study area is the R503, which passes within 2km to the north of the proposed development site in an east-west direction. This is adjoined by a network of local roads, winding around the summits within this area, as well as crossing some of the ridgelines.

The upland section of the study area is sparsely populated, with one-off housing along the R503 and network of local roads. Typically, there are no dwellings above the 200m contour. The small village of Rear Cross contains the largest cluster of properties within this part of the study area.

The density of one-off housing increases noticeably within the agricultural lowlands landscape, beyond 5km to the south-west of the proposed development site. A number of villages are located within this area, including Cappamore, Doon and Pallas Grean. Dense ribbon development is present for several kilometres along the roads outside these villages. This is also related to the Regional Roads (R505 and R506) and the National Road (N24) traversing this area, which facilitate a quick connection to Limerick City.

Due do the increased settlement density and denser network of roads, there is more movement within the lowland landscape compared with the upland section of the study area. The increased presence of manmade elements, such as residential properties and well-maintained fields, eliminates any sense of remoteness.

The landscape within the study area can be summarised as:-

- Central and north-western/north-eastern section of study area: undulating upland area, with numerous conifer plantations reducing its scenic quality;
- South-western section of study area: large flat lowland landscape, dominated by pasture fields framed by mostly tree-lined hedgerows; and
- frequent signs of human presence in the form of residential and farm buildings, roads and electricity lines, more so in the lowland landscape, with wind farms and conifer plantations added in the upland landscape.

9.3.3 Visual Baseline

9.3.3.1 Visibility according to the ZTV Mapping

The ZTVs at hub height (64.7m) and tip height (99.95m), refer to **Figures 9.2** & **9.3** (**Annex 9.1; Volume II**), indicate that in most areas from where the proposed development is theoretically visible, all four turbines are likely to be seen. The main such areas are:-

- Most of the area within 5km to the west, north and north-east of the site (topography provides some screening locally);
- Some areas within 5-12km to the north-west and north-east (typically elevated slopes (above 200m OD) facing the proposed development); and
- much of the lowland area within 5-20km to the south-west.

The only noticeable areas, where three turbines or fewer are visible, are within 7km and between 11-20km to the south/south-east. This is due to the screening provided by the summit at Knockastanna, which is located to the south-east of the four turbines and fully or partly screens the lower two to three turbines, depending on the elevation of the viewing location.

There is little difference between the hub height and tip height ZTVs, with changes most noticeable along the edges of the areas of theoretical visibility.

It should be noted that large parts of the upland area, for which visibility is indicated, are remote, inaccessible and/or covered with conifer plantations and therefore some views are screened by vegetation and there are few visual receptors in these areas. Furthermore, existing boundary hedgerows along the river valleys of the upland areas and throughout the lowland area within 5-20km to the south-west reduce visibility of the proposed development from these areas.

9.3.3.2 Actual Visibility of the Proposed Development

It was confirmed during the site survey that existing vegetation in both the upland and lowland landscapes within the study area, substantially reduces the areas from where the existing turbines (and therefore the proposed development) are actually visible, compared with what is shown by the ZTVs.

Four main areas from where the proposed development is actually, albeit intermittently, visible were identified. These areas are illustrated at **Figure 9.1** (**Annex 9.1**) as **'Visibility Areas' (VA)**. Views of the proposed development from each of the four areas are broadly similar. The extent of visibility and type of views within each of VAs is described under separate headings below.

Please note that the currently dismantled wind turbine was taken into account in the identification of the VAs and the description of views.

Visibility Area 1

VA 1 covers much of the area between the site and the village of Rear Cross, including an approximately 4km long section of the local road south of the village, approximately 4km along the R503 to the east of the village and sections of the local roads to the north of the R503. Also, a section of the local road circling the base of Knockastanna to the south of the site entrance is included (note: roadside vegetation screens views from other locations along this road).

VA 1 further includes an approximately 1.5km long section of the R503 between 5-6.5km north-west, as well as some of the elevated land to its north, which is traversed by the Slieve Felim Way (note: there are no views towards Knockastanna from the section of the Slieve Felim Way along the R503). This VA contains numerous (dispersed) residential properties, the Shanballyedmond Megalithic Tomb, as well as protected views along the relevant sections of the R503.

Views from the roads within this area are intermittent, as roadside vegetation blocks views in many locations. Similarly, views towards the proposed development site from residential properties within the area are blocked, in some cases, by tall vegetation along the property boundaries. Large sections within this VA cover private agricultural land and while views from this land are possible, there are few visual receptors experiencing these.

Please refer to Viewpoints A-C, E & G on **Figures 9.4-9.7** (**Annex 9.1**) for an illustration of the type of views available from within VA 1.

In all views from within VA 1, Knockastanna hill is visible as one of many summits of a similar height in the surrounding upland landscape, none of which distinctly stand out. Either intervening vegetation (refer to Viewpoints A, B & G) or the Bilboa River valley (refer to Viewpoints C & E) are visible in the foreground of views, while the mix of wet heath, upland blanked bog and conifer plantations on the upper slopes of Knockastanna is visible in the background. The upland landscape visible in these views is scenic, but not pristine. This is due to the presence of manmade elements, such as the uniform conifer plantations, roads, properties and electricity lines, as well as existing wind farms.

Due to the location of the viewpoints within VA 1 to the north, north-west and west of the proposed development site and associated lack of intervening topography, all four (note: currently three) turbines are fully visible. As the turbines are spaced out at regular intervals along a straight line up the slope, they appear in an ordered, visually legible layout in all views. Also, the line of turbines relates to the straight boundary lines of the conifer plantations running up the slope on either side of the proposed development site.

The turbines are seen against the backdrop of the surrounding wet heath, upland blanked bog, conifer plantations and against the sky to varying degrees. Due to their white colour, they are clearly visible in certain conditions. However, when the sky is overcast, they become less noticeable. This is illustrated by the viewpoint photographs provided (e.g. Viewpoint C: the bases of the turbines are clearly visible against the darker colours of the surrounding ground cover, while the turbine nacelles and blades almost disappear against the overcast sky). Please note that the dismantled fourth turbine, which would be visible, at the top of the line of turbines, is currently stored in the vicinity of the electrical control building and therefore noticeable in some of the viewpoints provided (refer to Viewpoints B & C).

The turbines take up small a proportion of the existing panoramic views. The height of the turbines is also appropriate to the scale of Knockastanna hill and as a result the development is not prominent in the views experienced within VA1.

Parts of the access tracks and in most cases the electrical control building are also visible from locations within VA 1. The building and access track below it are screened in some views by intervening vegetation (e.g. Viewpoint A & E). Where visible, neither the track nor the building are very noticeable, as their grey colour is very similar to the brown shades of the surrounding wet heath/blanket bog.

In some views from the local roads to the west of the proposed development site, the overhead electricity line providing the grid connection is visible (refer to Viewpoint C). However, since this has the same appearance as the electricity lines mounted on wooden poles present throughout this landscape, it does not comprise a prominent element in the landscape.

In most views from within VA 1, some of the third-party turbines, located within 2-10km to the south-east of the proposed development site are visible. In all views they are visible as a distinctly separate cluster of turbines. The skyline does not appear crowded with turbines in any views and there is no visual ovelap between the proposed development and any of the third-party turbines.

Visibility Area 2

VA 2 covers part of the area between 1-4km to the south of the proposed development site. Roadside and intervening vegetation within this area restricts or

prevents many views. However, Knockastanna hill is visible in a number of locations. The number of residential properties within this area is low, there are no protected views or recreational facilities.

Please refer to Viewpoint D at **Figure 9.5** (**Annex 9.1**) for a typical view from within VA 2.

As with views from within VA 1, Knockastanna hill is visible as one of many summits in the surrounding upland landscape, none of which distinctly stand out. A river valley landscape with trees and hedgerows (i.e. Bilboa River or Gortnageragh) is visible in the foreground of all views. Knockastanna hill is visible in the background along the skyline, but in views from this direction its uppermost slopes are covered by a mix of improved grassland and conifer plantations. The upland landscape visible in these views is scenic and has a more remote quality, compared with views from within VA 1. However, there is still a noticeable presence of manmade elements, including conifer plantations, roads, properties and electricity lines, as well as the existing turbines.

In views from locations within VA 2, the proposed development is located behind the ridgeline formed by Knockastanna hill. Therefore, the lower section of the turbines, as well as the access tracks, electricity control building and overhead electricity line providing the grid connection are fully screened by topography and in some cases also vegetation. The extent of each turbine visible differs between the turbines and from location to location. The lowest turbine is almost fully screened in some views. This would cause some visual confusion, were it not for the regular spacing of the turbines, resulting in an ordered, visually clear layout in all views. The currently dismantled fourth turbine would be visible at the top of the line of turbines. The turbines are visible against the sky in all views.

The height of the turbines is appropriate to the scale of Knockastanna hill. Also, the turbines take up small a portion of the generally panoramic views available and therefore do not dominate these.

In views from some of the more north-easterly locations within VA 2 some of the third-party turbines, located to the east of this VA (i.e. part of the Garracummer Wind Farm) are visible. However, they are not visible in the same viewshed and the observer would have to turn their head by at least 90 degrees to switch between the two wind farms. Therefore, the two wind farms are distinctly separated in views, avoiding visual confusion. The skyline does not appear crowded with turbines.

Visibility Area 3

VA 3 covers much of the area between 2-10km to the north-east of the proposed development site. Views from the roads within this area are intermittent, as roadside and intervening vegetation blocks views in many locations. There are several dispersed residential properties within this area, most along the R503, but again whether Knockastanna is visible depends on the presence of vegetation on the property boundaries. Parts of the Multeen Way and the Kilcommon Pilgrim Loop, as well as protected views along the relevant sections of the R503 are located within this VA.

Please refer to Viewpoint F at **Figure 9.6** (**Annex 9.1**) for a sample view from within VA 3.

In views from this VA, Knockastanna hill appears as one of the summits along a long undulating ridgeline to the south and parallel to the R503. This ridgeline, which is

covered in a mix of bog and conifer plantations, is visible in the background of views, while a broad valley, covered in a mix of conifer and deciduous plantations, is visible in the foreground. One of the third-party wind farms to the south-east of the proposed development site (i.e. Garracummer Wind Farm) is located along the ridgeline. The upland landscape visible in these views is much influenced by the abundance of conifer plantations, reducing its scenic quality. In addition to these plantations, other manmade elements regularly occur in views, such as roads, properties and electricity lines, as well as the existing turbines.

The proposed development is located behind the ridgeline formed by Knockastanna hill, in views from locations within VA 3. Therefore, the lower section of the turbines, as well as the access tracks, electricity control building and overhead electricity line providing the grid connection are fully screened by topography. As with VA 2, how much of each turbine is visible differs between the turbines and from location to location. However, these differences are hard to discern, due to the minimum distance of 2km and much greater distance in most locations. Also, the regular spacing of the turbines, results in an ordered, visually clear layout in all views. Again, the turbines are visible against the sky in all views. They will be clearly visible against a blue sky, but are much more likely to be inconspicuous against the more typical Irish grey skies.

The height of the turbines is appropriate to the scale of Knockastanna hill. Also, the turbines take up a very small portion of the generally panoramic views available and therefore do not dominate these.

As mentioned above, some third-party turbines are visible along the ridgeline to the south of the R503. In most views from within VA3, these are more closely and more openly visible as those associated with the proposed development (refer to Viewpoint F). As with the other VAs, there is a distinct separation between the proposed development and the third-party wind farm, avoiding overlap between the two developments.

Visibility Area 4

VA 4 covers a large area between 5-20 km to the south-west. Roadside and intervening vegetation within this lowland area restricts and prevents many views towards the site. However, views towards the Slieve Felim Mountains, and therefore Knockastanna hill, open up regularly. There are no protected views or relevant recreational facilities within this area.

Please refer to Viewpoint H at **Figure 9.7** (**Annex 9.1**) for a sample view from within VA 4.

In views from this VA, Knockastanna hill appears as one of the many highpoints along the long undulating ridgeline formed by the Slieve Felim Mountains. The expanse of the agricultural lowland is visible in the foreground of views. The Slieve Felim Mountains are visible in the background. The rural lowland landscape is influenced by manmade elements, including well-maintained fields, roads, properties and electricity lines. The Slieve Felim Mountains form a scenic backdrop, but also show signs of manmade intervention, in the form of wind turbines and conifer plantations.

The proposed development is located behind the ridgeline formed by Knockastanna hill, as well as other intervening summits, in views from VA 4. Therefore, the lower section of the turbines, as well as the access tracks, electricity control building and overhead electricity line providing the grid connection are fully screened by

topography. The extent of each turbine visible differs between each turbine and from location to location. The lowest turbine is almost fully screened in some views. However, the effects of distance, as well as the regular spacing of the turbines reduce any visual confusion this may cause. Again, the turbines are visible against the sky in all views.

The height of the turbines is appropriate to the scale of Knockastanna and surrounding hills. Due to the panoramic long-distance nature of views form within VA 4, the turbines take up a very small portion of these views and are difficult to discern in many of them.

Many of the third-party turbines which form part of the large wind energy complex to the south-east of the proposed development site are visible to the east of Knockastanna along the Slieve Felim Mountains ridgeline. As with the other VAs there is a distinct separation between the proposed development and the third-party wind farms, avoiding the overlapping of these developments in views. In addition, there are broad sections of the ridgeline where no wind turbines are present.

9.3.4 Sensitive Receptors

9.3.4.1 Landscape Receptors

The components of the landscape that are likely to be affected by the proposed development, i.e. the landscape receptors, are:-

- the upland landscape character type surrounding the proposed development site (combining the affected sections of Limerick LCA 8 and Tipperary LCAs 17 & 18);
- the lowland agricultural landscape beyond 5km to the south-west (covering parts of Limerick LCA 1); and
- the proposed development site itself, with its moorland/rough grassland landcover.

9.3.4.2 Visual Receptors

The types of visual receptors that are likely to be affected by the proposed development are the:-

- residents of the properties within the four VAs described above;
- road users along the National, Regional and Local Roads within the four VAs; and
- users of the walking routes present within VAs 1 & 3.

9.4 Description of Likely Effects

This section discusses the landscape and visual effects during the different development phases.

9.4.1 Evaluation Methodology

Refer to **Sections 9.2.3** and **9.2.4** above for the methodology used in the assessment of the sensitivity of landscape and visual receptors and the assessment of the magnitude of landscape and visual change, as well as the assessment of landscape and visual effects and their significance.

9.4.2 Landscape and Visual: Construction Phase

All construction activities associated with the development have been completed and no additional infrastructure is proposed. The proposal seeks to extend the operational life of a pre-existing wind farm and associated on-site infrastructure.

Therefore, there is no likelihood of construction phase related landscape or visual effects.

9.4.3 Landscape: Operation Phase

The operational phase of the proposed development covers the continuation of operations, for a period of 15-years, of the existing Knockastanna Wind Farm. The landscape effects during this additional 15-year period, will be the same as those already present in the baseline landscape, on which the assessment below is based.

9.4.3.1 Landscape Sensitivity

Table 9.14, below, describes the value attached to each of the identified landscape receptors and their susceptibility to the changes caused by the proposed development. A judgement of the overall sensitivity of the landscape receptor is also provided.

Landscape Receptor	Value	Susceptibility	Overall Sensitivity
Upland Landscape Character Type	Upland LCT not covered by a specific landscape designation. However, this LCT is assessed to have elevated value, by reference to the following criteria:- • Natural Heritage: numerous nature conservation sites present; upland moorland areas contribute to the sense of place, although this is reduced by the presence of conifer plantations. • Recreational: several walking routes present in the wider area. **LOCAL AUTHORITY**	The large open upland character is assessed as being able to accommodate large elements, such as wind turbines to some extent without transformational adverse effects. Also, refer to Tipperary LCA 17, the description of which states that *"the nature of the varying topography is such that there is a capacity to accommodate development without undue deterioration in the scenic quality"*. Thus, the susceptibility of this landscape receptor is assessed to be: **MEDIUM**	**MEDIUM**
Lowland Agricultural Landscape Type	Lowland LCT not covered by a specific landscape designation. Also, the LCT is not assessed to contain demonstrable physical attributes that elevate its value (i.e. while the lowland landscape contains some localised nature conservation sites, it does not contain any distinctive features, relevant recreational facilities or strong perceptual values). It is however assessed to be valued by local communities.	The proposed development is not located within the area covered by this landscape receptor. It forms part of the neighbouring LCT, which forms a backdrop to this LCT. The lowland LCT is assessed as able to accommodate the development without transformational effects to its characteristics, due to the physical separation and distance. **LOW**	**LOW**

	COMMUNITY		
Proposed Development Site	Development site not covered by a specific landscape designation. While it has some elevated value in ecological/natural heritage terms, due to its SPA designation, the landscape value is not considered to be elevated above **COMMUNITY**	Similar to the general upland character, the open, elevated character of the site is assessed as able to accommodate large elements, such as wind turbines to some extent without transformational adverse effects. **MEDIUM**	**LOW**

Table 9.14: Sensitivity of Landscape Receptors

9.4.3.2 Magnitude of Landscape Change

Table 9.15 describes the size and scale, geographical extent and duration/reversibility of the landscape effects for each landscape receptor, all of which contribute to the assessment of the magnitude of these effects.

Landscape Receptor	Factors of Magnitude	Magnitude of Change
Upland Landscape Character Type	Size & Scale: The proposed development does not result in the introduction of new elements into the landscape, as it concerns an existing wind farm and as there are several other wind farms present in the wider landscape. The existing four turbines are not particularly prominent in and have not changed the composition/balance of the wider upland landscape.	**SMALL**
	Geographical Extent: Considering the upland area from where the proposed development is visible is much restricted by intervening topography, it is assessed that the change will affect a moderate proportion of the LCT.	**MEDIUM**
	Duration / Reversibility: It is intended to extend the existing wind farm permission by 15 years, i.e. to the year 2039. Considering the turbines are in place since 2009, the overall operational period would be 30 years. The effects would be reversible.	**LONG-TERM**
Lowland Agricultural Landscape Type	Size & Scale: The proposed development does not result in the introduction of new elements into the landscape, as it concerns an existing wind farm and as there are several other wind farms present in the wider landscape. The existing four turbines are a small element at a considerable distance from this LCT and therefore result in a negligible change in landscape character.	**NEGLIGIBLE**
	Geographical Extent: Considering the ample screening provided by existing hedgerows within this lowland LCT and considering the vast extent of the agricultural lowland character within County Limerick, it is assessed that the change will affect a small proportion of the LCT.	**SMALL**
	Duration / Reversibility: Total operational period would be 30 years. The effects would be reversible.	**LONG-TERM**

Proposed Development Site	Size & Scale: The proposed development does not result in the introduction of new elements into the landscape, as it concerns an existing wind farm and as there are several other wind farms present in the wider landscape. The existing four turbines are prominent within the site, due to their height. However, due to their small footprint, they have not changed the underlying open moorland character of the site.	**MEDIUM**
	Geographical Extent: Again, due to their small footprint, the turbines affect a small proportion of the development site.	**SMALL**
	Duration / Reversibility: Total operational period would be 30 years. The effects would be reversible.	**LONG-TERM**

Table 9.15: Factors of Magnitude of Landscape Effects – Operational Phase

The combined magnitude of landscape change on each of the landscape receptors, during the operational phase, based on the findings of **Table 9.15**, is assessed below:-

- Upland LCT: MEDIUM magnitude (mainly due to medium geographical extent and long-term duration);
- Lowland LCT: SLIGHT magnitude (negligible size/scale of change, but with recognition of the long-term duration); and
- Proposed Development Site: MEDIUM magnitude (mainly due to medium size/scale of change and long-term duration).

9.4.3.3 Assessment of Landscape Effects and Significance

The landscape effects, during the operational phase, based on the sensitivity of each of the landscape receptors and the magnitude of change experienced by each of them are assessed below:-

- Upland LCT: The MEDIUM sensitivity of this receptor, combined with the MEDIUM magnitude of change, is judged to result in a MODERATE negative landscape effect;
- Lowland LCT: The LOW sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MINOR negative landscape effect; and
- Proposed Development Site: The LOW sensitivity of this receptor, combined with the MEDIUM magnitude of change, is judged to result in a MINOR negative landscape effect.

None of these landscape effects are assessed to be significant.

9.4.4 Landscape: Decommissioning Phase

The decommissioning phase of the proposed development will cover a period of approximately 2-3 months following the additional 15-years of operation of the existing wind farm. For the purpose of this EIAR, it is assumed that a full decommissioning of the Knockastanna Wind Farm will take place. In general, all structures above ground level shall be demolished and removed from the site; however, access tracks may be retained depending on the proposed future use of the site. Turbine foundations and hard standing areas will be grubbed up to a depth of 1m below ground level and the areas profiled to match the surrounding ground. The areas shall then be covered with topsoil and seeded out or allowed to vegetate naturally.

These decommissioning activities will result in changes to the development site, which will ultimately result in a reduction of the existing landscape effects and which will be positive in nature.

9.4.4.1 Landscape Sensitivity and Magnitude of Landscape Change

The sensitivity of the three landscape receptors is assumed to remain the same, as assessed for the operational stage. The changes to the magnitude of change are discussed in **Table 9.16** below.

Landscape Receptor	Factors of Magnitude	Magnitude of Change
Upland Landscape Character Type	Size & Scale: While there will be some additional machinery present on site to facilitate the decommissioning works, this will be offset by the successive removal of the four turbines. The composition/balance of the wider upland landscape will not be changed.	**SMALL**
	Geographical Extent: As with the operational phase, it is assessed that the change would affect a moderate proportion of the LCT.	**MEDIUM**
	Duration / Reversibility: The decommissioning phase will last c. 2-3 months and would ultimately result in the reversal of the landscape effects.	**SHORT-TERM**
Lowland Agricultural Landscape Type	Size & Scale: The proposed development will continue to be a small element at a considerable distance from this LCT. The removal of the turbines will ultimately result in the reduction of the size & scale of landscape change on this LCT to zero.	**NEGLIGIBLE**
	Geographical Extent: As with the operational phase, it is assessed that the change would affect a small proportion of the LCT.	**SMALL**
	Duration / Reversibility: The decommissioning phase will last c. 2-3 months years and would ultimately result in the reversal of the landscape effects.	**SHORT-TERM**
Proposed Development Site	Size & Scale: All decommissioning works will be contained within the area of existing infrastructure. The surrounding moorland will not be disturbed and its character therefore not changed. There will be a temporarily increased prominence of machinery on site. However, this will be offset by the successive removal of turbines, which will reduce their prominence. Once the decommissioning areas are covered with soil, they will blend in with the surrounding moorland, thereby enhancing the moorland character of the site.	**MEDIUM**
	Geographical Extent: Again, due to the small footprint, of the elements to be decommissioned a small proportion of the development site would be affected.	**SMALL**
	Duration / Reversibility: The decommissioning phase will last c. 2-3 months and would ultimately result in the reversal of the landscape effects.	**SHORT-TERM**

Table 9.16: Factors of Magnitude of Landscape Effects – Decommissioning Phase

The combined magnitude of landscape change on each of the landscape receptors, during the decommissioning phase, based on the findings of **Table 9.16**, is assessed below:-

- Upland LCT: SLIGHT magnitude (short-term duration offsets medium geographical extent);
- Lowland LCT: NEGLIGIBLE magnitude (mainly due to negligible size/scale of change and short-term duration); and
- Proposed Development Site: SLIGHT magnitude (short-term duration offsets medium size/scale of change).

9.4.4.2 Assessment of Landscape Effects and Significance

The landscape effects, during the decommissioning phase, based on the sensitivity of each of the landscape receptors and the magnitude of change experienced by each of them are assessed below:-

- Upland LCT: The MEDIUM sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MINOR negative landscape effect;
- Lowland LCT: The LOW sensitivity of this receptor, combined with the NEGLIGIBLE magnitude of change, is judged to result in a NEGLIGIBLE (neutral) landscape effect; and
- Proposed Development Site: The LOW sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MINOR / NEGLIGIBLE negative landscape effect.

None of these landscape effects are assessed to be significant.

9.4.5 Visual: Operation Phase

The operational phase of the proposed development covers the continuation of operations, for a period of 15-years, of the existing Knockastanna Wind Farm. The visual effects during this additional 15-year period, will be the same as those already present in existing views, as described as part of the visual baseline, on which the assessment below is based.

9.4.5.1 Visual Receptor Sensitivity

Table 9.17 lists the value placed on views from within each of the VAs identified as part of the visual baseline. It further describes the susceptibility to change of each of the Visual Receptors identified within these VAs and provides a judgement of the overall sensitivity of each of the Visual Receptors.

VA	Value	Susceptibility	Overall Sensitivity
1	Protected views / Scenic Routes present along the section of the R503 passing through this VA (North Tipperary CDP 2010). **MEDIUM** No protected or locally promoted views towards the application site in other locations within this VA. **LOW**	Residents: **HIGH** Hikers: **HIGH** Travellers on the R503 aware of its scenic route status, where attention is likely to be on the landscape: **MEDIUM**	**HIGH-MEDIUM** **HIGH-MEDIUM** **MEDIUM** **LOW**

		Other road users, where views are incidental to the journey: **LOW**	
2	No protected or locally promoted views towards the application site in other locations within this VA. **LOW**	Residents: **HIGH** Road users, where views are incidental to the journey: **LOW**	**HIGH-MEDIUM** **LOW**
3	Protected views / Scenic Routes present along the section of the R503 and R497 passing through this VA (North Tipperary CDP 2010). **MEDIUM** No protected or locally promoted views towards the application site in other locations within this VA. **LOW**	Residents: **HIGH** Hikers: **HIGH** Travellers on the R503 & R497 aware of its scenic route status, where attention is likely to be on the landscape: **MEDIUM** Other road users, where views are incidental to the journey: **LOW**	**HIGH-MEDIUM** **HIGH-MEDIUM** **MEDIUM** **LOW**
4	No protected or locally promoted views towards the application site in other locations within this VA. **LOW**	Residents: **HIGH** Road users, where views are incidental to the journey: **LOW**	**HIGH-MEDIUM** **LOW**

Table 9.17: Sensitivity of Visual Receptors

9.4.5.2 Magnitude of Visual Change

Table 9.18 describes the magnitude of change to views from each of the VAs, during the operational phase, in terms of the size and scale of change in views, the geographical extent relating to each of the visual receptors present and the duration/reversibility of the visual change.

VA	Description of Factors of Visual Change	Magnitude of Effect
1	Refer to Viewpoints A, B, C, E & G. Size and Scale:- The proposed development does not result in the introduction of new elements into views from VA1, as it concerns an existing wind farm and as there are several other wind farms present in the wider landscape. The existing four turbines occupy a small proportion of all available views, which are typically panoramic in nature. Due to their clear linear layout, which relates to the boundary lines of adjoining conifer plantations, and appropriate scale, the turbines integrate well into views. The turbines are clearly perceptible in good weather, but only partially alter the composition of views.	**SMALL**
	Geographical Extent:- Residents: In the region of 70 properties with views of the turbines, most of which are within 3km.	**MEDIUM** **SMALL**

	Hikers: Very limited number of intermittent viewpoints along Slieve Felim Way Travellers on Scenic Routes: Intermittent views along approximately 5.5km of the R503. The protected views/scenic routes, while designated in the County Development Plan are not locally promoted (e.g. no sign posts). Therefore, the number of travellers specifically driving along the R503 for the views is believed to be low. Other road users: Intermittent views along approximately 13km of Regional and local roads, most within 3km of the site. Roads used infrequently, due to the remote location and sparse population cover.	**SMALL** **MEDIUM**
	Duration/Reversibility:- It is intended to extend the existing wind farm permission by 15 years, i.e. to the year 2039. Considering the turbines are in place since 2009, the overall operational period would be 30 years. The effects would be reversible.	**LONG-TERM REVERSIBLE**
2	Refer to Viewpoint D. Size and Scale:- The proposed development does not result in the introduction of new elements into views from VA2, as it concerns an existing wind farm and as there are several other wind farms present in the wider landscape. The existing four turbines occupy a small proportion of all available views, which are typically panoramic in nature. The turbines are set out in a clear linear layout, following the ridgeline of Knockastanna Hill, and are appropriate in scale. The turbines are clearly perceptible in good weather, but only partially alter the composition of views.	**SMALL**
	Geographical Extent:- Residents: In the region of 15 properties with views of the turbines Road users: Intermittent views along approximately 5km of local roads. Roads used rarely, due to the very remote location and very sparse population cover.	**SMALL** **SMALL**
	Duration/Reversibility: Total operational period would be 30 years. The effects would be reversible.	**LONG-TERM REVERSIBLE**
3	Refer to Viewpoint F. Size and Scale: The proposed development does not result in the introduction of new elements into views from VA3, as it concerns an existing wind farm and as there are several other wind farms present in the wider landscape. The existing four (note: currently three standing) turbines occupy a very small proportion of all available views, which are typically panoramic in nature. Due to their clear linear layout, following the ridgeline of Knockastanna Hill, and appropriate scale, the turbines integrate well into views. The turbines are perceptible in good weather, but with very limited influence on the composition of views.	**NEGLIGIBLE**
	Geographical Extent:-	

	Residents: In the region of 50 properties with views of the turbines, many of which are at a minimum distance of approximately 4km. Hikers: Very limited number of intermittent viewpoints along Kilcommon Pilgrim Loop and Multeen Way. Travellers on Scenic Routes: Intermittent views along approximately 8km of the R503 & R497. The protected views/scenic routes, while designated in the County Development Plan are not locally promoted (e.g. no sign posts). Therefore, the number travellers specifically driving along these roads for the views is believed to be low. Other road users: Intermittent views along approximately 19km of Regional and Local roads, most at a minimum distance of 4km. Roads used infrequently, due to the remote location and sparse population cover.	**SMALL** **SMALL** **SMALL** **SMALL**
	Duration/Reversibility:- Total operational period would be 30 years. The effects would be reversible.	**LONG-TERM REVERSIBLE**
4	Refer to Viewpoint H. Size and Scale:- The proposed development does not result in the introduction of new elements into views from VA4, as it concerns an existing wind farm and as there are several other wind farms present in the wider landscape. The existing four (note: currently three standing) turbines occupy a very small proportion of all available views, which are typically panoramic in nature. Due to their clear linear layout, following the ridgeline of Knockastanna Hill, and appropriate scale, the turbines integrate well into views. The turbines are perceptible in good weather, but with very limited influence on the composition of views.	**NEGLIGIBLE**
	Geographical Extent:- Residents: Numerous properties with views, but at a minimum distance of approximately 5km. Road users: Intermittent views along a large network of roads, but as a minimum distance of 5km. Roads frequently used due to greater population density and proximity to Limerick.	**SMALL** **SMALL**
	Duration/Reversibility:- Total operational period would be 30 years. The effects would be reversible.	**LONG-TERM REVERSIBLE**

Table 9.18: Factors of Magnitude of Visual Change – Operational Phase

The combined magnitude of visual change on each of the visual receptors within the four VAs, during the operational phase, based on the findings of **Table 9.18**, is assessed below.

VA 1:-

- Residents and Other Road Users: MEDIUM magnitude (mainly due to medium geographical extent and long-term duration); and
- Hikers and Travellers on Scenic Routes: SLIGHT magnitude (small size/scale of change and small geographical extent offsets long-term duration).

VA 2:-

- Residents and Road Users: SLIGHT magnitude (small size/scale of change and small geographical extent offsets long-term duration).

VA 3:-

- Residents, Hikers, Travellers on Scenic Routes and Other Road Users: SLIGHT magnitude (negligible size/scale of change offsets long-term duration).

VA 4:-

- Residents and Road Users: SLIGHT magnitude (negligible size/scale of change offsets long-term duration).

9.4.5.3 Assessment of Visual Effects and Significance

The visual effects, during the operational phase, based on the sensitivity of each of the visual receptors and the magnitude of change experienced by each of them are assessed below:-

VA 1:-

- Residents: The HIGH-MEDIUM sensitivity of this receptor, combined with the MEDIUM magnitude of change, is judged to result in a MODERATE negative visual effect;
- Hikers: The HIGH-MEDIUM sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MODERATE negative visual effect;
- Travellers on Scenic Routes: The MEDIUM sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MINOR negative visual effect; and
- Other Road Users: The LOW sensitivity of this receptor, combined with the MEDIUM magnitude of change, is judged to result in a MINOR negative visual effect.

VA 2:-

- Residents: The HIGH-MEDIUM sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MODERATE negative visual effect; and
- Road Users: The LOW sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MINOR negative visual effect.

VA 3:-

- Residents and Hikers: The HIGH-MEDIUM sensitivity of these receptors, combined with the SLIGHT magnitude of change, is judged to result in a MODERATE negative visual effect
- Travellers on Scenic Routes: The MEDIUM sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MINOR negative visual effect; and
- Other Road Users: The LOW sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MINOR negative visual effect.

VA 4:-

- Residents: The HIGH-MEDIUM sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MODERATE negative visual effect; and
- Road Users: The LOW sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MINOR negative visual effect.

None of these visual effects are assessed to be significant.

9.4.6 Visual: Decommissioning Phase

The decommissioning phase of the proposed development will cover a period of approximately 2-3 months following the additional 15-years of operation of the existing wind farm. For the purpose of this EIAR, it is assumed that a full decommissioning of the Knockastanna Wind Farm will take place. In general, all structures above ground level shall be demolished and removed from the site; however, access tracks may be retained depending on the proposed future use of the site. Turbine foundations and hard standing areas will be grubbed up to a depth of 1m below ground level and the areas profiled to match the surrounding ground. The areas shall then be covered with topsoil and seeded out or allowed to vegetate naturally.

These decommissioning activities will result in changes to the development site, which will ultimately result in a reduction of the existing visual effects and which will be positive in nature.

9.4.6.1 Visual Receptor Sensitivity and Magnitude of Visual Change

The sensitivity of the visual receptors is assumed to remain the same at the decommissioning stage, as assessed for the operational stage. The changes to the magnitude of change are discussed in **Table 9.19**.

VA	Description of Factors of Visual Change	Magnitude of Change
1	Refer to Viewpoints A, B, C, E & G. Size and Scale:- While there will be some additional machinery present on site to facilitate the decommissioning works, this will be offset by the successive removal of the four turbines, reducing the visual effects.	**SMALL**
	Geographical Extent:- The geographical extent of the change for each of the receptors within VA1 will remain the same at the decommissioning stage. Residents: Hikers: Travellers on Scenic Routes: Other road users:	**MEDIUM** **SMALL** **SMALL** **MEDIUM**
	Duration/Reversibility:- The decommissioning phase will last c. 2-3 months and will ultimately result in the reversal of the visual effects.	**SHORT-TERM REVERSIBLE**
2	Refer to Viewpoint D. Size and Scale:- The activities at ground level during the decommissioning phase will be screened in views from within VA 2. Only the cranes dismantling the turbines will be visible for short periods, successively reducing the visual effects.	**NEGLIGIBLE**
	Geographical Extent:- The geographical extent of the change for each of the receptors within VA1 will remain the same at the decommissioning stage. Residents:	**SMALL**

	Road users:	**SMALL**
	Duration/Reversibility:- The decommissioning phase will last c. 2-3 months and will ultimately result in the reversal of the visual effects.	**SHORT-TERM REVERSIBLE**
3	Refer to Viewpoint F. Size and Scale:- The activities at ground level during the decommissioning phase will be screened in views from within VA 3. Only the cranes dismantling the turbines will be visible for short periods, successively reducing the visual effects.	**NEGLIGIBLE**
	Geographical Extent:- The geographical extent of the change for each of the receptors within VA1 will remain the same at the decommissioning stage. Residents: Hikers: Travellers on Scenic Routes: Other road users:	**SMALL** **SMALL** **SMALL** **SMALL**
	Duration/Reversibility:- The decommissioning phase will last c. 2-3 months and will ultimately result in the reversal of the visual effects.	**SHORT-TERM REVERSIBLE**
4	Refer to Viewpoint H. Size and Scale:- The activities at ground level during the decommissioning phase will be screened in views from within VA 4. Only the cranes dismantling the turbines will be visible for short periods, successively reducing the visual effects.	**NEGLIGIBLE**
	Geographical Extent:- The geographical extent of the change for each of the receptors within VA1 will remain the same at the decommissioning stage. Residents: Road users:	**SMALL** **SMALL**
	Duration/Reversibility:- The decommissioning phase will last c. 2-3 months and will ultimately result in the reversal of the visual effects.	**SHORT-TERM REVERSIBLE**

Table 9.19: Factors of Magnitude of Visual Change – Decommissioning Phase

The combined magnitude of visual change on each of the visual receptors within the four VAs, during the decommissioning phase, based on the findings of **Table 9.19**, is assessed below:-

VA 1:-

- Residents and Road Users: SLIGHT magnitude (long-term duration offsets medium geographical extent); and
- Hikers and Travellers on Scenic Routes: SLIGHT magnitude (mainly due to small size/scale of change and small geographical extent).

VA 2:-

- Residents and Road Users: NEGLIGIBLE magnitude (mainly due to negligible size/scale of change and short-term duration).

VA 3:-

- Residents, Hikers, Travellers on Scenic Routes and Other Road Users: NEGLIGIBLE magnitude (mainly due to negligible size/scale of change and short-term duration).

VA 4:-

- Residents and Road Users: NEGLIGIBLE magnitude (mainly due to negligible size/scale of change and short-term duration).

9.4.6.2 Assessment of Visual Effects and Significance

The visual effects, during the decommissioning phase, based on the sensitivity of each of the visual receptors and the magnitude of change experienced by each of them are assessed below:-

VA 1:-

- Residents: The MEDIUM sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MINOR visual effect;
- Hikers and Travellers on Scenic Routes: The MEDIUM sensitivity of both receptors, combined with the SLIGHT magnitude of change, is judged to result in a MINOR visual effect; and
- Other Road Users: The LOW sensitivity of this receptor, combined with the SLIGHT magnitude of change, is judged to result in a MINOR visual effect.

VA 2:-

- Residents: The MEDIUM sensitivity of this receptor, combined with the NEGLIGIBLE magnitude of change, is judged to result in a MINOR visual effect; and
- Road Users: The LOW sensitivity of this receptor, combined with the NEGLIGIBLE magnitude of change, is judged to result in a NEGLIGIBLE visual effect.

VA 3:-

- Residents, Hikers and Travellers on Scenic Routes: The MEDIUM sensitivity of these receptors, combined with the NEGLIGIBLE magnitude of change, is judged to result in a MINOR visual effect; and
- Other Road Users: The LOW sensitivity of this receptor, combined with the NEGLIGIBLE magnitude of change, is judged to result in a NEGLIGIBLE visual effect.

VA 4:-

- Residents: The MEDIUM sensitivity of this receptor, combined with the NEGLIGIBLE magnitude of change, is judged to result in a MINOR visual effect; and
- Road Users: The LOW sensitivity of this receptor, combined with the NEGLIGIBLE magnitude of change, is judged to result in a NEGLIGIBLE visual effect.

None of these visual effects are assessed to be significant.

9.4.7 Landscape and Visual: Cumulative Effects

There is a large wind farm complex beyond 2km to the south-east of the proposed development site, containing a total of c. 66 turbines (refer to **Chapter 1** and **Annex**

1.5). The summit/ridgeline at Knockastanna hill provides a visual barrier between the proposed development and the third party turbines, so that there are no views where one is seen in front of the other. In all available views, there is a distinct visual separation between the existing Knockastanna Wind Farm and third party wind farms, so that there is no visual confusion/overlapping between the two. In addition, Knockastanna Wind Farm comprises four turbines, which limits its contribution to cumulative effects.

There are two consented but not yet constructed wind farms within 10km buffer of the proposed development, i.e. Castlewaller Wind Farm, approximately 9-10km to the north-west and Upperchurch Wind Farm (22 no. turbines) approximately 8-13km to the north-east. Once operational there would be a similar visual separation between these two wind farms and the proposed development, as is the case with the currently operational wind farms. Also, these two wind farms received consent with Knockastanna Wind Farm already in place and it is assumed that the cumulative impact was assessed and found acceptable.

Considering the low number of turbines associated with the proposed development and the above mentioned visual separation from other wind farms, the cumulative landscape or visual effects are assessed to be limited, not significant and have not been considered in greater detail.

Two existing quarry developments, Rearcross Quarries and Lackamore Quarry, are located 3km to the north-west and 3km to the south-west of the proposed development, respectively. Both quarries are substantially screened by topography and vegetation in views from the surrounding landscape. No viewpoints where views of any of the two quarries and the proposed development overlap were identified. Due to this visual separation, the cumulative impact of these two types of development are assessed to be limited, not significant and have not been considered in greater detail.

There are no known other existing, consented or proposed developments, which predominately comprise small scale residential and agricultural developments, likely to result in cumulative landscape or visual effects in combination with the proposed development.

9.4.8 Landscape and Visual: Direct/Indirect Effects

All landscape and visual effects described above are direct effects. The proposed development is not assessed as likely to have indirect effects in landscape and visual terms, i.e. the proposed development is unlikely to cause consequential changes to the surrounding landscape character areas or to existing views of the landscape surrounding the application site.

9.4.9 Landscape and Visual: Unplanned Events (i.e. Accidents)

It is assessed as highly unlikely that any unplanned events within the proposed development site would result in a noticeable landscape or visual impact.

9.4.10 Landscape and Visual: Transboundary Impacts

The proposed development is not located in the vicinity of an international boundary. Therefore, transboundary landscape or visual impacts will not arise.

9.4.11 Landscape and Visual: Interaction with Other Impacts

There are no known interactions with other impacts.

9.4.12 Landscape and Visual: 'Do-nothing Scenario'

If the proposed development does not receive planning permission, the existing Knockastanna Wind Farm decommissioned on the expiry of the current permission ceases. This will result in the same decommissioning phase impact, as described above, only 15 years earlier.

9.5 Mitigation & Monitoring Measures

The following outlines the proposed mitigation and monitoring measures, as appropriate.

9.5.1 Landscape and Visual: Construction Phase

All construction activities associated with the development have been completed and no additional infrastructure is proposed. The proposal seeks to extend the operational life of a pre-existing wind farm and associated on-site infrastructure. Therefore, construction phase mitigation or monitoring measures are not required.

9.5.2 Landscape and Visual: Operation Phase

Similar to the construction phase, mitigation measures during the operation phase of the proposed development are not assessed as being required as the development concerns a wind farm that has been in operation for the past 12-years. Also, no significant landscape or visual impacts, which require mitigation, were identified for the operation phase in the assessment of likely effects above.

However, it was noted during the planning research, that Condition No. 6(ii) of the parent permission (Planning Ref. 01/1385 & ABP Ref. PL13.130938) required a landscaping scheme for the electricity control building and access tracks to be agreed with the Planning Authority. This landscaping scheme comprised the placing of earthen **'screening bunds' around the** electricity control building and on the down-gradient slope of the access tracks, which were to be allowed to vegetate naturally. Such bunds were not installed around the electricity control building and were therefore contemplated for inclusion as part of this planning application.

As described in the visual baseline above, the electricity control building was not found to be visually intrusive in views from the surrounding area, despite the lack of these bunds (refer to Viewpoint C at **Figure 9.5**). Also, the slopes along the western and south-western boundaries of the hardstanding area surrounding the building, i.e. the boundaries facing the surrounding land, are very steep in places (refer to **Plate 9.7**). Placing material on these slopes would result in bunds with a large footprint and of considerable height, which would likely be more visually intrusive than the currently **'unscreened' building.** This would also have an effect on the existing grassland surrounding the hardstanding area.

Proposing tree/shrub planting along the boundaries of the hardstanding area has also been considered. However, the general land cover surrounding the electrical control building is open, with a general absence of trees/hedgerows, which is partly due to the elevation of this part of the site. Tree/shrub planting would therefore be out of place and may struggle to become established, due to the exposure of the site.

In conclusion, it is assessed that it would be more visually intrusive to install screening bunds or carry out tree/shrub planting around the electricity control building, at this stage of the development. It is, therefore, preferable to leave the site 'as is', as all areas disturbed during the construction works have naturally vegetated.

The Applicant is committed to increase the biodiversity value of the proposed development site, which may also result in positive visual and landscape effects. In order to achieve this, those actions appropriate to the site, as set out in the All-Ireland Pollinator Plan – Pollinator-friendly management of Wind Farms, will, where possible, be implemented (https://pollinators.ie/wp-content/uploads/2021/04/Windfarm_Pollinator_Guidelines-WEB.pdf). These include, *inter alia*:-

- **Pollinator Action 2:** *Maintain native flowering hedgerows for biodiversity* – this will be implemented with regard to the existing hedgerows in the vicinity of the site entrance. There is also some scope to plant pollinator friendly hedgerows along the lowest section of the access track, i.e. up to the second bend in the track. There are existing gorse bushes and some individual hawthorn shrubs present up to that point. These could be interplanted to form a hedgerow; and
- **Pollinator Action 3:** *Eliminate or reduce pesticide use* – this will be implemented on all hardstanding areas and along the access tracks throughout the site, in particular on any of the earth banks along the access tracks, as these provide nesting habitat for mining solitary bees.

Plate 9.7: View of steep slope to the west of the Electricity Control Building

There are no specific monitoring requirements in relation to potential landscape or visual effects during the operational phase.

9.5.3 Landscape and Visual: Decommissioning Phase

No significant landscape or visual impacts, which require mitigation, were identified as being required for the decommissioning phase.

As part of this phase, it is proposed to demolish and remove all structures above ground level and to grub the turbine foundations and hard standing areas up to a depth of 1m below ground level. The areas will be profiled to match the surrounding

ground, shall be covered with topsoil and seeded with a suitable grass mix or allowed to vegetate naturally. These proposed works will result in a reduction/removal of the existing landscape and visual effects and will therefore be positive in nature.

A 2-year monitoring period (visual inspection only with intervention only where required) following the completion of the decommissioning works is proposed to ensure that the regraded areas successfully establish a grass sward or heathland cover similar to that surrounding these areas. This monitoring will ensure that he proposed development site is assimilated by local vegetative patterns thus avoiding any long-term visual effects, particularly from VA 1.

9.6 Residual Effects

On the basis of the above assessment, and considering that no specific landscape or visual mitigation measures are proposed for any of the development phases, the residual effects will be the same as those identified as part of the assessment of likely effects above.

None of the landscape or visual effects identified for any of the development phases are assessed to be significant.

9.7 Summary

The above assessment provides a detailed description of the landscape and visual baseline within the study area. This was identified as a core area of 5km surrounding the proposed development site and extending up to 10km to the north-west and north-east and up to 20km to the south-west. This is based on the zone of theoretical visibility prepared for the four turbines associated with Knockastanna Wind Farm. The likely effects of the proposed development on landscape and visual receptors are described for its construction, operational and decommissioning phases.

The landscape within the 5km core area and extensions to the north-west and north-east is of an undulating upland character. Views of the proposed development would be experienced intermittently from this area, by residents and road users, as well as hikers from a small number of locations along walking routes within the area. Intervening topography and vegetation restrict views towards the proposed development in many locations within the upland area.

The landscape beyond 5km to the south-west is of an agricultural lowland character. The proposed development is visible in the distance along the skyline. This is applicable, where views are not restricted by intervening hedgerow vegetation, which is abundant throughout this landscape.

While the existing four turbines associated with Knockastanna Wind Farm are noticeable elements, they do not change the composition/balance of the surrounding upland landscape and do not notably affect the agricultural lowland landscape, due to the physical separation. Also, due to their small footprint, the turbines do not affect the character of the open wet heath / upland blanket bog character of the site itself. Landscape effects were judged to be moderate or less for all landscape receptors and not significant.

The four turbines occupy a small proportion of available views, which are typically panoramic in nature. They do not dominate any of these views their visually clear, regularly spaced, linear layout aligns with the straight lines of conifer plantations. This is particularly the case in views from locations to the north-west. and the wind turbine layout follows the ridgeline of Knockastanna Hill in other key views. The height of the

turbines is appropriate to the scale of Knockastanna Hill and they do not diminish the scale of the landform. Visual effects were judged to be moderate or less for all visual receptors and not significant.

While there is a large wind farm complex beyond 2km to the south-east of the proposed development site, there is a distinct visual separation between the existing Knockastanna Wind Farm and third party wind farms in all available views, so that there is no visual overlap or confusion between the two from the key locations in the surrounding landscape. Also considering the low number of turbines associated with the proposed development the cumulative landscape or visual effects are assessed to be limited.

The decommissioning phase of the wind farm will result in the reduction/removal of all landscape and visual effects and will be positive in nature.

As no significant landscape or visual impacts were identified, no specific landscape or visual mitigation measures are required. Subsequently, the residual landscape and visual effects are the same as those identified for the different phases of the proposed development.