



Cush Wind Farm
Phase II

Environmental Impact Assessment Report

Chapter 10: Landscape

Cush Wind Limited

Contents

10.1 Introduction	1
10.1.1 Assessment Structure	1
10.1.2 Statement of Authority	2
10.1.3 Description of the Project	2
10.1.4 Assessment of Turbine Dimension Range	3
10.2 Methodology	3
10.2.1 Definition of Study Area	4
10.2.2 Department of the Environment, Heritage and Local Government Wind Energy Development Guidelines (2019 Draft)	6
10.2.3 Use of the Term 'Effect' vs 'Impact'	6
10.2.4 Assessment of Both 'Landscape' and 'Visual' Effects	7
10.2.5 Desktop Study	7
10.2.6 Fieldwork	7
10.2.7 Landscape and Visual Assessment	8
10.2.8 Computer Generated Images, Photomontages and Wireframes	8
10.2.9 Assessment Criteria for Landscape Effects	8
10.2.10 Assessment Criteria for Visual Effect	10
10.2.11 Level of Effects	14
10.2.12 Assessment Criteria for Cumulative Effects	16
10.2.13 Assumption and Limitations	19
10.2.14 Visual Material and Photography	19
10.3 Description of the Existing Environment	19
10.3.1 Landscape Baseline	19
10.3.2 Landscape Policy Context and Designations	23
10.3.3 Visual Baseline	34
10.4 Description of Likely Effects	48
10.4.1 Do-Nothing Scenario	49
10.4.2 Landscape Sensitivity	50
10.4.3 Landscape Effects	52
10.4.4 Visual Effects	55
10.4.5 Cumulative Effects	66
10.4.6 Interactive Effects	69
10.5 Mitigation Measures	70
10.5.1 Embedded Mitigation	70
10.5.2 Construction Phase	70
10.5.3 Operation Phase	71
10.5.4 Decommissioning Phase	71
10.5.5 Monitoring Measures	71
10.6 Residual Effects	71
10.7 Summary	72

10.1 INTRODUCTION

This chapter assesses the likelihood of significant effects on the landscape and visual amenity of the receiving environment during the construction, operation, and decommissioning phases of the project.

This chapter is supported by a visual impact assessment at **Annex 10.1 (Volume II)**, a photomontage and visualisation pack at **Annex 10.2** and a comparative photomontage pack at **Annex 10.3**.

This landscape and visual impact Assessment (LVIA) describes the landscape context of the project site and assesses the likely landscape and visual effects of the project on the receiving environment. Although closely linked, landscape and visual effects are assessed separately.

Landscape Impact Assessment (LIA) relates to changes in the physical landscape brought about by a project, which may alter its character, and how this is experienced. This requires a detailed analysis of the individual elements and characteristics of a landscape that go together to make up the overall landscape character of that area. By understanding the aspects that contribute to landscape character, it is possible to make judgements in relation to its quality (integrity) and to identify key sensitivities. This, in turn, provides a measure of the ability of the landscape in question to accommodate the type and scale of change associated with the project without causing unacceptable adverse changes to its character.

Visual Impact Assessment (VIA) relates to assessing effects on specific views and the general visual amenity experienced by people. This deals with how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the landscape and/or introduction of new elements. Visual impacts may occur from visual obstruction (blocking of a view, be it full, partial or intermittent) or visual intrusion (interruption of a view without blocking).

Cumulative landscape and visual impact assessment is concerned with additional changes to the landscape or visual amenity caused by the project in conjunction with other developments (associated or separate from it).

While this assessment predominately focuses on the likely impacts of the proposed wind turbines due to their scale, detailed appraisal of all elements of the overall project have been assessed including ancillary infrastructure (access tracks and site entrances), electrical switch room, underground electricity line, and haul route upgrade works.

10.1.1 ASSESSMENT STRUCTURE

In accordance with the Landscape Institute and the Institute of Environmental Management and Assessment publication entitled *Guidelines for Landscape and Visual Impact Assessment – Third Edition (2013) (GLVIA3)*, the structure of this chapter will consist of separate considerations of landscape effects and visual effects in the following order:-

- Assessment of landscape value and sensitivity;
- Assessment of the magnitude of landscape change;
- Assessment of the level (significance) of landscape effects;

- Assessment of visual receptor sensitivity;
- Assessment of the magnitude of visual change;
- Assessment of the level (significance) of visual effects; and,
- Assessment of cumulative landscape and visual effects.

GLVIA3 outlines the differences between 'impact' and 'effect' in regard to undertaking LVIA as follows:-

"The process is generally known as impact assessment, but the European Union Directive refers to the assessment of the effects, which are changes arising from the development that is being assessed. This guidance generally distinguishes between the 'impact', defined as the action being taken, and the 'effect', defined as the change resulting from that action."

This assessment adopts the GLVIA3 terminology, arriving at a judgement regarding the level (significance) of a landscape or visual effect, before arriving at an assessment as to whether the effect is 'Significant'.

10.1.2 STATEMENT OF AUTHORITY

This chapter was prepared by Jorden Derecourt, Landscape Architect at Macro Works Ltd (part of APEM Group), in Blackrock, Dublin. Jorden is a Professional Member of the Irish Landscape Institute (ILI) and has over 5-years of experience preparing LVIA reports for a broad range of development types, including numerous wind farm projects such as that proposed.

Macro Works is a specialist LVIA consultancy with over 20-years of experience in the appraisal of effects from a variety of energy, infrastructure and commercial developments. Macro Works' relevant experience includes LVIA work on over 140 no. on-shore wind farm proposals throughout Ireland, including 6 Strategic Infrastructure Development (SID) wind farms. Macro Works and its senior staff members are affiliated with the Irish Landscape Institute.

The chapter has been reviewed by Cian Doughan, Associate Director in Macro Works, and Landscape Architect affiliated with the Irish Landscape Institute. Cian has undertaken LVIA work for over 30+ no. wind farms amongst numerous other development projects in Ireland.

10.1.3 DESCRIPTION OF THE PROJECT

The project site is located in rural Co. Offaly, approximately 4km north of the town of Birr and c.28km south-west of Tullamore, Co. Offaly.

The project assessed within this EIAR comprises a 3 no. wind turbine extension to the permitted Cush Wind Farm Phase I¹, together with all associated and ancillary infrastructure and works. This includes turbine foundations, crane hardstanding areas, access tracks, internal wind farm underground cabling, site drainage and rehabilitation works, peat/spoil management, a proposed electrical switch room building, and a c.5km underground electricity line required to facilitate connection of the proposed wind farm to the national electricity network.

The final turbine model has not yet been selected; however, the proposed turbines will be selected within the turbine dimension range assessed in this EIAR, as set out in

¹ An Coimisiún Pleanála Reference: ABP-318816-24

Section 1.8.3, Chapter 1. The approach adopted for the assessment of the turbine dimension range in respect of landscape and visual effects is set out in **Section 10.1.4** below.

A full description of the project is presented in **Chapter 3**.

10.1.4 ASSESSMENT OF TURBINE DIMENSION RANGE

As set out in **Section 1.8.3, Chapter 1**, the final turbine model has not yet been selected and the proposed turbines will be selected from within a defined turbine dimension range comprising an overall tip height of 199.1m to 200m, a rotor diameter of 158m to 175m and a hub height of 111.6m to 120.9m.

For the purposes of the Landscape and Visual Impact Assessment, Macro Works has considered the potential visual characteristics of the turbine permutations falling within this range, including the interaction between overall tip height, hub height, rotor diameter and the apparent proportions and scale of the turbine when viewed in the landscape. On this basis, the 200m tip height / 118m hub height / 164m rotor diameter permutation was considered to present the greatest overall visual presence across the turbine dimension range and has therefore been adopted as the specimen turbine permutation for the principal landscape and visual assessment and associated photomontages. The selection of this permutation is therefore based on its landscape and visual characteristics rather than simply its position at the midpoint of the turbine dimension range.

To verify that the assessment appropriately encompasses the potential visual effects arising across the full turbine dimension range, comparative photomontages have also been prepared using the outer rotor diameter permutations, comprising a 175m rotor diameter / 111.6m hub height / 199.1m tip height permutation and a 158m rotor diameter / 120.9m hub height / 199.9m tip height permutation. These comparative views are presented at **Annex 10.3** and allow any material variation in the appearance, scale and resulting landscape and visual effects of the turbines across the assessed dimension range to be identified.

The cumulative landscape and visual assessment has also had regard to the permitted Cush Wind Farm Phase I and the current Section 146B alteration request² relating to that development, which seeks to provide for a turbine dimension range comparable to that proposed for the Project. For the purposes of the comparative photomontages presented at **Annex 10.3**, the 8 no. permitted Phase I turbines have therefore been represented using the same turbine dimension permutations as the 3 no. proposed Phase II turbines. This provides a consistent and realistic representation of the potential combined development, particularly having regard to the anticipated coordinated construction of Phase I and Phase II and the likelihood that the turbine technology ultimately selected for the two phases will be closely aligned.

10.2 METHODOLOGY

The production of this assessment involved baseline work in the form of desktop studies and fieldwork comprising professional evaluation by qualified and experienced Landscape Architects.

The LVIA adheres to methodology as prescribed in the following guidance documents:

² An Coimisiún Pleanála Reference: ACP-324405-26

- European Union (EU) *Guidance on the preparation of the EIA Report* (Directive 2011/92/EU as amended by 2014/52/EU) (2017);
- Environmental Protection Agency (EPA) publication *Guidelines on the Information to be contained in Environmental Impact Assessment Reports* (2022);
- Landscape Institute and the Institute of Environmental Management and Assessment (IEMA) publication entitled *Guidelines for Landscape and Visual Impact Assessment – Third Edition* (2013) (herein referred to as GLVIA3);
- NatureScot Guidance - *Assessing the cumulative landscape and visual impact of onshore wind energy developments* (2021) [online];³
- Department of the Environment, Heritage and Local Government *Wind Energy Development Guidelines* (2006);
- Department of the Housing, Planning, and Local Government *Draft Revised Wind Energy Development Guidelines* (2019); and,
- Scottish Natural Heritage *Visual Representation of Wind Farms: Best Practice Guidelines* (version 2.2 - 2017).⁴

10.2.1 DEFINITION OF STUDY AREA

Both the 2006 *Wind Energy Development Guidelines* (WEDGs) and Draft Revised 2019 *Wind Energy Development Guidelines* (DWEDGs) published by the Department of the Environment, Heritage and Local Government specify radii for examining the zone of theoretical visibility (ZTV) of proposed wind farm projects. The 2006 guidance and Draft Revised WEDG⁵ is identical in relation to defining the radii for examining the ZTV of proposed wind farm projects. The extent of this search area is influenced by turbine height, as follows:

- 15 km radius for blade tips up to 100m;
- 20 km radius for blade tips greater than 100m and;
- 25 km radius where landscape features of national and international importance exist.

In the case of the proposed project, the blade tips are up to a maximum 200 m height and, thus, the minimum ZTV radius applied is 20km from the outermost turbines, which represents current best practice with regard to the height of the turbines and scale of the turbine array. Clonmacnoise, a landscape feature of national importance, is located just over 20 km northwest of the site, as per WEDGs guidance, it is recommended to include this receptor within the study even though it falls outside of the principal 20 km study area. Notwithstanding the full 20 km extent of the LVIA study area, there will be a particular focus on receptors and effects within the central study area where there is higher potential for significant effects to occur. When referenced within this assessment, the 'central study area' is the landscape within 5km of the proposed wind farm site boundary, which represents current best practice.

In relation to other features of the proposed project, such as the underground

³ There is no current guidance document in Ireland relating to the assessment of cumulative landscape and visual effects for onshore wind energy development, and thus, it is standard practice to use the NatureScot guidance

⁴ As above.

⁵ The draft Revised WEDGs represent a consultation draft which are not in force and subject to change.

electricity line and the proposed turbine haul route, their study area relates to their immediate context and a 50 m corridor either side of these linear features, as per current best practice. This is principally due to the localised nature of likely significant effects.

For clarity, a summary of defined terms with regard to the study area that are used throughout this chapter is provided below:

- Site and Immediate Study Area – the proposed wind farm site and immediate surrounding landscape up to 1 km.
- Central Study Area – areas outside of the site and immediate study area up to 5 km from the proposed turbine array.
- Wider Study Area – parts of the surrounding landscape between 5-20 km from the proposed turbine array

Relevant guidance does not require a 'central study area', or 'wider study area' to be defined, but it has become standard/best practice to highlight the distinction between the immediate context of the project site and then the context of the wider landscape.

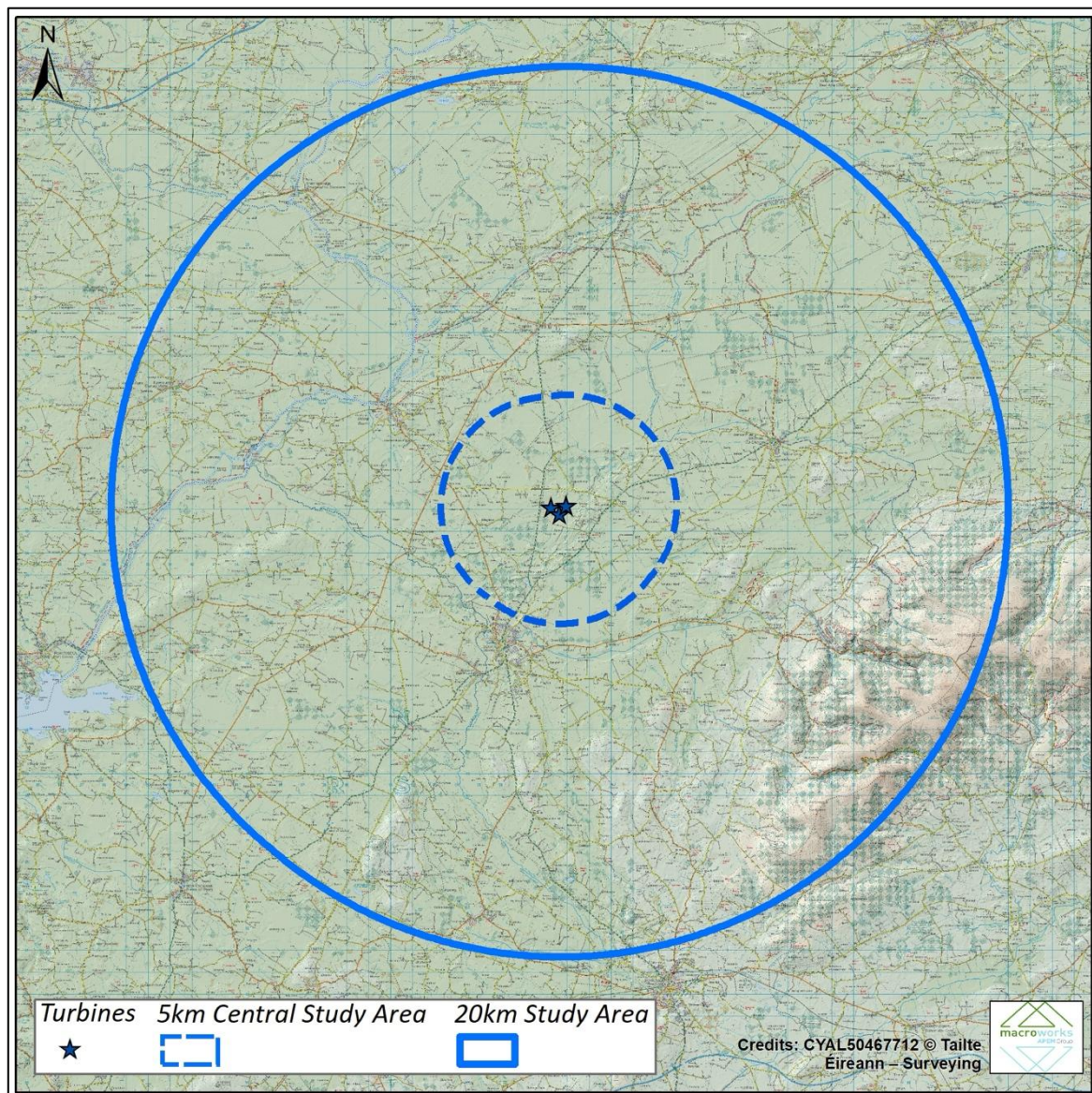


Figure 10.1: Mapping illustrating the full extent of the study area

10.2.2 DRAFT WIND ENERGY DEVELOPMENT GUIDELINES (2019)

The draft revised WEDGs (DWEDGs) represent a consultation draft which are not in force and subject to change. Nevertheless, this assessment has had regard to the content of the currently drafted document. It is important to note that all information and guidelines relating to landscape areas and types in the current wind energy development guidelines (WEDGs) are duplicated in the draft revised wind energy development guidelines (DWEDGs). The only additional information relating to landscape and visual in the draft revised guidelines relates to the visual amenity setbacks. Thus, the current (WEDGs) and revised (DWEDGs) guidelines have been referenced.

10.2.3 USE OF THE TERM 'EFFECT' VS 'IMPACT'

GLVIA3 advises that the terms 'impact' and 'effect' should be clearly distinguished and consistently used in the preparation of an LVIA.

'Impact' is defined as the action being taken. In the case of the proposed works, the

impact would include the construction of the proposed project.

'Effect' is defined as the change or changes resulting from those actions, e.g. a change in landscape character, or changes to the composition, character and quality of views in the receiving environment. This report focusses on these effects.

10.2.4 ASSESSMENT OF BOTH 'LANDSCAPE' AND 'VISUAL' EFFECTS

Another key distinction to make in a LVIA is between landscape effects and the visual effects of development.

'Landscape' results from the interplay between the physical, natural and cultural components of our surroundings. Different combinations of these elements and their spatial distribution create distinctive character of landscape in different places. 'Landscape character assessment' is the method used in LVIA to describe landscape, and by which to understand the potential effects of a development on the landscape as 'a resource'. Character is not just about the physical elements and features that make up a landscape, but also embraces the aesthetic, perceptual and experiential aspects of landscape that make a place distinctive.

Views and 'visual amenity' refer to the interrelationship between people and the landscape. The LVIA prescribes that effects on views and visual amenity should be assessed separately from landscape, although the two topics are inherently linked. Visual assessment is concerned with changes that arise in the composition of available views, the response of people to these changes and the overall effects on the area's visual amenity.

Production of this Landscape and Visual Impact Assessment involved baseline work in the form of desktop studies and fieldwork comprising professional evaluation by qualified and experienced Landscape Architects. This entailed the following:

10.2.5 DESKTOP STUDY

The desktop study comprised:-

- Establishing an appropriate Study Area from which to study the landscape and visual impacts of the proposed project;
- Review of a Zone of Theoretical Visibility (ZTV) map, which indicates areas from which the proposed project is potentially visible in relation to terrain within the Study Area;
- Review of relevant National and Regional Policies and Designations, County Development Plans, particularly with regard to sensitive landscape and scenic view/route designations and associated policies and objectives.
- Selection of potential Viewshed Reference Points (VRPs) from key visual receptors to be investigated during fieldwork for actual visibility and sensitivity.

10.2.6 FIELDWORK

Macro Works has a comprehensive understanding of the project site context within the wider study area and has carried out numerous site visits to the locality over the last 10+ years. In respect of this project, site visits to potential VRP locations and the wider study area were carried out in Summer/Autumn 2023, to gain a baseline understanding of landscape context and to interrogate the ZTV. Subsequent site visits to the site and surrounding landscape context have also been undertaken in 2024 and 2025. Photography obtained for use in the production of photomontages was

undertaken in 2026.

Fieldwork involved:-

- Recording of a description of the landscape elements and characteristics within the Study Area; and
- Selection of a refined set of VRP's for assessment. This includes the capture of reference images and grid reference coordinates for each VRP location for the visualisation specialist to prepare photomontages

10.2.7 LANDSCAPE AND VISUAL ASSESSMENT

The process adopted in regard to the identification of landscape and visual effects (adopting the assessment criteria) is summarised as follows:-

- Selection of a refined set of VRPs for assessment (outlined in 10.3.3.3).
- Consideration of the receiving landscape with regard to overall landscape character as well as the salient features of the study area including landform, drainage, vegetation, land use and landscape designations.
- Consideration of the visual environment including receptor locations such as centres of population and houses, transport routes, public amenities and facilities and designated and recognised views of scenic value.
- Consideration of relevant design guidance and planning policies.
- Consideration of potentially significant construction, operation and decommissioning phase effects and the mitigation measures that could be employed to reduce such effects.
- Assessment of the level (significance) of residual landscape effects.
- Assessment of the level (significance) of residual visual effects aided by photomontages prepared at all of the selected VRP locations.
- Assessment of cumulative landscape and visual effects in combination with other relevant surrounding developments that are either existing, permitted, or subject to a valid planning application.

10.2.8 COMPUTER GENERATED IMAGES, PHOTOMONTAGES AND WIREFRAMES

This assessment is supported by a range of computer-generated maps and visualisations, including Zone of Theoretical Visibility (ZTV) maps and verifiable photomontages prepared from a representative selection of visual receptor locations. The photomontages comprise existing views, wireframe views and proposed views and are presented within the Landscape and Visual Impact Assessment visualisation pack at **Annex 10.2**. In addition, comparative photomontages have been prepared to illustrate the visual differences arising across the assessed turbine dimension range. These comparative views, presented at **Annex 10.3**, compare the specimen turbine permutation used for the principal assessment with the maximum and minimum rotor diameter permutations and are used to confirm whether any material variation in landscape or visual effects arises across the turbine dimension range.

10.2.9 ASSESSMENT CRITERIA FOR LANDSCAPE EFFECTS

The classification system to determine the significance of landscape and visual impacts complies with the Landscape Institute and IEMA Guidelines for Landscape

and Visual Impact Assessment (2013). When assessing the potential impacts on the landscape resulting from a wind farm development, the following criteria are considered:

- Landscape character, value and sensitivity;
- Magnitude of likely effects; and
- Significance of landscape effects.

The sensitivity of the landscape to change is the degree to which a particular landscape receptor (Landscape Character Area [LCA] or feature) can accommodate changes or new features without unacceptable detrimental effects to its essential characteristics. Landscape Value and Sensitivity is classified using the following criteria outlined in **Table 10.1**.

Sensitivity	Description
Very High	Areas where the landscape character exhibits a very low capacity for change in the form of development. Examples of which are high value landscapes, protected at an international or national level (World Heritage Site/National Park), where the principal management objectives are likely to be protection of the existing character.
High	Areas where the landscape character exhibits a low capacity for change in the form of development. Examples of which are high value landscapes, protected at a national or regional level (Area of Outstanding Natural Beauty), where the principal management objectives are likely to be considered conservation of the existing character.
Medium	Areas where the landscape character exhibits some capacity and scope for development. Examples of which are landscapes, which have a designation of protection at a county level or at non-designated local level where there is evidence of local value and use.
Low	Areas where the landscape character exhibits a higher capacity for change from development. Typically, this would include lower value, non-designated landscapes that may also have some elements or features of recognisable quality, where landscape management objectives include, enhancement, repair and restoration.
Negligible	Areas of landscape character that include derelict, mining, industrial land or are part of the urban fringe where there would be a reasonable capacity to embrace change or the capacity to include the development proposals. Management objectives in such areas could be focused on change, creation of landscape improvements and/or restoration to realise a higher landscape value.

Table 10.1: Landscape Value and Sensitivity

The magnitude of a predicted landscape effect is a product of the scale, extent or degree of change that is likely to be experienced as a result of the proposed project. The magnitude takes into account whether there is a direct physical impact resulting from the loss of landscape components and/or a change that extends beyond the proposal site boundary that may have an effect on the landscape character of the area, see **Table 10.2**.

Magnitude of Effect	Description
Very High	Change that would be large in extent and scale with the loss of critically important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to an extensive change of the landscape in terms of character, value and quality.
High	Change that would be more limited in extent and scale with the loss of important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to a considerable change of the landscape in terms of character, value and quality.
Medium	Changes that are modest in extent and scale involving the loss of landscape characteristics or elements that may also involve the introduction of new uncharacteristic elements or features that would lead to noticeable changes in landscape character, and quality.
Low	Changes affecting small areas of landscape character and quality, together with the loss of some less characteristic landscape elements or the addition of new features or elements that would lead to discernible changes in landscape character, and quality.
Negligible	Changes affecting small or very restricted areas of landscape character. This may include the limited loss of some elements or the addition of some new features or elements that are characteristic of the existing landscape or are hardly perceivable leading to no material change to landscape character, and quality.

Table 10.2: Magnitude of Landscape Effects

10.2.10 ASSESSMENT CRITERIA FOR VISUAL EFFECT

As with the landscape effect, the visual effect of the project will be assessed as a function of receptor sensitivity versus magnitude. In this instance, the sensitivity of visual receptors weighed against the magnitude of visual effects.

10.2.10.1 Visual Sensitivity

As with landscape sensitivity, the sensitivity of a visual receptor is categorised as Very High, High, Medium, Low, and Negligible. Unlike landscape sensitivity, however, the sensitivity of visual receptors has an anthropocentric (human) basis. It considers factors such as the perceived quality and values associated with the view, the landscape context of the viewer, the likely activity the viewer is engaged in and whether this heightens their awareness of the surrounding environment.

Visual sensitivity is a two-sided analysis of receptor susceptibility (people or groups of people) versus the value of the view on offer at a particular location.

To assess the susceptibility of viewers and the amenity value of views, the assessors use a range of criteria and provide a four-point weighting scale to indicate how strongly the viewer/view is associated with each of the criteria. Susceptibility criteria are extracted directly from the GLVIA3, whilst the value criteria relate to various aspects of a view that might typically be related to high amenity including, but not limited to, scenic designations. These are set out below.

Susceptibility of Visual Receptors to Change

In accordance with GLVIA3, visual receptors most susceptible to changes in views

and visual amenity are:-

- Residents at home;
- People, whether residents or visitors, who are engaged in outdoor recreation, including use of public rights of way, whose attention or interest is likely to be focussed on the landscape and on particular views;
- Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience;
- Communities where views contribute to the landscape setting enjoyed by residents in the area; and,
- Travellers on road, rail or other transport routes where such travel involves recognised scenic routes and awareness of views is likely to be heightened.

Visual receptors that are less susceptible to changes in views and visual amenity include:-

- People engaged in outdoor sport or recreation, which does not involve or depend upon appreciation of views of the landscape; and,
- People at their place of work whose attention may be focussed on their work or activity, not their surroundings and where the setting is not important to the quality of working life.

Values typically associated with Visual Amenity

The value attached to a view is determined by considering the following:-

- Recognised scenic value of the view, including County Development Plan ('CDP') designations, guidebooks, touring maps, postcards etc. These represent a consensus in terms of which scenic views and routes within an area are strongly valued by the population because in the case of CDPs, at least, a public consultation process is required;
- Views from within highly sensitive landscape areas. Again, highly sensitive landscape designations are usually part of a county's Landscape Character Assessment, which is then incorporated with the CDP and is therefore subject to the public consultation process. Viewers within such areas are likely to be highly attuned to the landscape around them;
- Intensity of use, popularity. Whilst not reflective of the amenity value of a view, this criterion relates to the number of viewers likely to experience a view regularly and whether this is significant at the county or regional scale;
- Connection with the landscape. This considers whether or not receptors are likely to be highly attuned to views of the landscape i.e. commuters hurriedly driving on busy national route versus hill walkers directly engaged with the landscape enjoying changing sequential views over it.
- Provision of elevated panoramic views. This relates to the extent of the view on offer and the tendency for receptors to become more attuned to the surrounding landscape at locations that afford broad vistas;
- Sense of remoteness and/or tranquillity. Remote and tranquil viewing locations are more likely to heighten the amenity value of a view and have a lower intensity of development in comparison to dynamic viewing locations such as a busy street scene, for example;

- Degree of perceived naturalness. Where a view is valued for the sense of naturalness of the surrounding landscape it is likely to be highly sensitive to visual intrusion by obvious human interventions;
- Presence of striking or noteworthy features. A view might be strongly valued because it contains a distinctive and memorable landscape feature such as a promontory headland, lough or castle;
- Historical, cultural or spiritual value. Such attributes may be evident or sensed at certain viewing locations that attract visitors for the purposes of contemplation or reflection heightening the sense of their surroundings;
- Rarity or uniqueness of the view. This might include the noteworthy representativeness of a certain landscape type and considers whether other similar views might be afforded in the local or the national context;
- Integrity of the landscape character in view. This criterion considers the condition and intactness of the landscape in view and whether the landscape pattern is a regular one of few strongly related components or an irregular one containing a variety of disparate components;
- Sense of place. This criterion considers whether there is a special sense of wholeness and harmony at the viewing location; and,
- Sense of awe. This criterion considers whether the view inspires an overwhelming sense of scale or the power of nature.

Those locations where highly susceptible receptors or receptor groups are present and which are deemed to satisfy many of the view value criteria above are likely to be judged to have a high visual sensitivity and vice versa.

It is recognised that a viewer's interpretation and experience of the landscape can have preferential and subjective components. Where relevant, judgements are made on those elements of the landscape that are considered to contribute more prominently and positively as well as those elements that contribute negatively. Overall sensitivity may be a result of a number of these factors or a strong association with one or two in particular.

10.2.10.2 Magnitude of Change - Visual

The magnitude of visual effects is determined on the basis of two factors; the visual presence of the proposed project and its effect on visual amenity.

Visual presence is a somewhat quantitative measure relating to how noticeable or visually dominant the proposal is within a particular view. This is based on a number of aspects beyond simply scale in relation to distance. Some of these include the extent of the view as well as its complexity and the degree of existing contextual movement experienced such as might occur where turbines are viewed as part of / beyond a busy street scene. The backdrop against which the project is presented and its relationship with other focal points or prominent features within the view is also considered. Visual presence is essentially a measure of the relative visual dominance of the proposal within the available vista and is expressed as such, i.e. minimal, sub-dominant, co-dominant, dominant, highly dominant.

For wind energy developments, a strong visual presence is not necessarily synonymous with adverse impact. Instead, the 2012 Fáilte Ireland survey entitled 'Visitor Attitudes

On The Environment – Wind Farms' found that:

"Compared with other types of development in the Irish landscape, wind farms elicited a positive response when compared to telecommunication masts and steel electricity pylons".... and that "most (tourists) felt that their presence did not detract from the quality of their sightseeing, with the largest proportion (45%) saying that the presence of the wind farm had a positive impact on their enjoyment of sightseeing...".

A further study by Fáilte Ireland titled 'Report on Visitor Awareness and Perceptions of the Ireland Landscape' (2018) found that in relation to views from prominent tourism sites in Ireland:

"There is consistent evidence of the majority of visitors not reporting the visibility of large, visually prominent developments that were close and directly in their line of sight".

Some examples of this were where no visitors reported the visibility of a windfarm or nearby industrial units at Cashel and no visitor noticed the offshore windfarm at Brittas Bay. The purpose here is not to suggest that turbines are either inherently liked or disliked, but rather to highlight that the assessment of visual effect magnitude for wind turbines is more complex than just the degree to which turbines occupy a view. Furthermore, a clear and comprehensive view of a wind farm might be preferable in many instances to a partial, cluttered view of turbine components that are not so noticeable within a view.

On the basis of these reasons, the visual amenity aspect of assessing effect magnitude is qualitative and considers such factors as the spatial arrangement of turbines both within the scheme and in relation to surrounding terrain and land cover. It also examines whether the project contributes positively to the existing qualities of the vista or results in distracting visual effects and disharmony.

It should be noted that as a result of this two-sided analysis, a high order visual presence can be moderated by a low level of effect on visual amenity and vice versa. Given that wind turbines do not represent significant bulk, visual effects result almost entirely from visual 'intrusion' rather than visual 'obstruction' (the blocking of a view). The magnitude of visual effect is classified in **Table 10.3**.

Criteria	Description
Very High	The proposal obstructs or intrudes into a large proportion or critical part of the available vista and is without question the most noticeable element. An extensive degree of visual change will occur within the scene completely altering its character, composition and associated visual amenity
High	The proposal obstructs or intrudes into a significant proportion or important part of the available vista and is one of the most noticeable elements. A considerable degree of visual change will occur within the scene substantially altering its character, composition and associated visual amenity
Medium	The proposal represents a moderate intrusion into the available vista and is a readily noticeable element. A noticeable degree of visual change will occur within the scene perceptibly altering its character, composition and associated visual amenity
Low	The proposal intrudes to a minor extent into the available vista and may not be noticed by a casual observer and/or the proposal would not have a marked effect on the visual amenity of the scene
Negligible	The proposal would be barely discernible within the available vista and/or it would not influence the visual amenity of the scene

Table 10.3: Magnitude of Visual Effect

10.2.11 LEVEL OF EFFECTS

The purpose of an LVIA when produced in the context of an EIA is to identify any 'significant' effects on landscape and visual amenity arising from a project. Neither EC Directive 2014/52/EU⁶ nor domestic legislation defines a threshold at which an effect may be determined to be significant. In certain other environmental disciplines, there are regulatory thresholds or quantitative standards which help to determine the threshold of what constitutes a significant effect.

The EPA Guidelines (2022) defines 'Significant Effects' (within Table 3.4 of the Guidelines):

"an effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment."

This definition is, however, provided as guidance alongside 7 no. other generalised definitions that may be used to describe the 'Significance' of effects, "in the absence of specific descriptions". 'Significance' is cited as "a concept that can have different meanings for different topics", and a chart is included (at Figure 3.4 of the Guidelines) to guide this process.

GLVIA3 defines 'significance' as:

"a measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic".

It does not define what may constitute a 'significant' effect or provide thresholds that indicate where effects would become significant rather than not significant but states that "there are no hard and fast rules about what effects should be deemed 'significant'" (paragraph 3.32 of GLVIA3).

This is further expanded upon in paragraph 5.54 (concerning landscape effects), which states that:

"significance can only be defined in relation to each development and its

⁶ Directive 2014/52/EU (2014). The assessment of the effects of certain public and private projects on the environment. Official Journal of the European Union.

specific location. It is for each assessment to determine how the judgements about the landscape receptors and landscape effects should be combined to arrive at significance and to explain how the conclusions have been derived."

GLVIA3 also states that the assessment of significance is "an evidence-based process combined with professional judgement" (paragraph 3.23). Professional judgement is (as acknowledged in GLVIA3) a very important aspect of LVIA, and it is important to remember that:

"even with qualified and experienced professionals there can be differences in the judgements made. This may result from using different approaches or different criteria, or from a variation in judgements based on the same approach and criteria" (GLVIA3 paragraph 2.25).

This assessment has been undertaken by appropriately qualified and experienced LVIA practitioners, experienced in the production of LVIAs as previously outlined, using well-established and tested methodology.

The level of a landscape or visual effect (or relative significance) is based on a balance between the sensitivity of the receptor and the magnitude of change and is categorised as Profound, Substantial, Moderate, Slight, or Imperceptible. Intermediate judgements are also provided to enable an effect to be more accurately described where relevant. 'No Effect' may also be recorded as appropriate where the effect is so negligible it is not noteworthy.

The level category judgement is arrived at using the matrix in **Table 10.4** as a guide which applies the principle of significance being a function of magnitude weighed against sensitivity but employs slightly different terminology (level of effect) that avoids the potentially confusing use of the term 'Significant'.

Magnitude	Sensitivity of Receptor				
	Very High	High	Medium	Low	Negligible
Very High	Profound	Profound-substantial	Substantial	Moderate	Slight
High	Profound-substantial	Substantial	Substantial - moderate	Moderate-slight	Slight-imperceptible
Medium	Substantial	Substantial - moderate	Moderate	Slight	Imperceptible
Low	Moderate	Moderate-slight	Slight	Slight-imperceptible	Imperceptible
Negligible	Slight	Slight-imperceptible	Imperceptible	Imperceptible	Imperceptible

Table 10.4: Effect Significance Matrix

Note: Judgements deemed 'Substantial' and above are considered to be 'significant effects' in EIA terms. Substantial-Moderate judgements and below are classified as Not Significant.

Whilst the matrix and criteria provide a useful guide, the level of an effect is ultimately determined by the landscape specialist using professional judgement, and also in the context of occasionally using hybrid judgements to account for nuance.

For the purposes of assessment, effects assessed as 'Substantial' or greater (in shaded cells) in **Table 10.4**, are considered to be the most notable in landscape and visual terms and most material in the decision-making process, albeit not a reflection of their

acceptability in planning terms.

10.2.11.1 Quality and Timescale of Effects

In addition to assessing the level (significance) of landscape and visual effects, the EPA Guidance requires that the quality of the effects is also determined. This could be negative/adverse, neutral, or positive/beneficial:-

- Positive Effects: A change which improves the quality of the environment;
- Neutral and/or balanced Effects: No effects, or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error; and,
- Negative/adverse Effects: A change that reduces the quality of the environment.

The same EPA guidelines also set out categories of duration:-

- Temporary – Lasting for 1-year or less;
- Short Term – Lasting 1 to 7-years;
- Medium Term – Lasting 7 to 15-years;
- Long Term – Lasting 15 years to 60-years; and,
- Permanent – Lasting over 60-years.

In the case of commercial wind energy developments and the associated introduction of new moving structures within rural and upland areas, the quality of the landscape and visual effects will almost always be negative, rather than positive and, unless otherwise stated, is the default quality of any identified effect. Where effects are imperceptible or not possible as a result of distance, context, or views being screened by foreground elements, effects are considered Neutral as the proposals neither improve nor reduce the quality of the environment.

In terms of duration, the wind turbines will have a long-term impact, as permission is being sought for a 35-year operational life after which the turbines will be decommissioned. Some other elements of the project relating to access tracks and buried foundation sections and underground electricity line ducting will likely remain in perpetuity and will therefore have permanent effects.

10.2.12 ASSESSMENT CRITERIA FOR CUMULATIVE EFFECTS

NatureScot's *Guidance – Assessing the Cumulative Effects of Onshore Wind Farms* (2021) is considered a key reference with regard to cumulative landscape and visual effects. GLVIA3 provides comparable guidance in relation to cumulative issues whilst recognising that it is an emerging area of study.

The principal focus of wind energy cumulative impact assessment guidance relates to other wind farms, as opposed to other forms of development (existing, permitted or subject to a valid planning application) that are considered relevant. This will be the main focus herein.

In relation to cumulative landscape impacts, the NatureScot guidance states:-

“Cumulative landscape impacts can change either the physical fabric or character of the landscape, or any special values attached to it. For example:

Cumulative impacts on the physical fabric of the landscape arise when two or more developments affect landscape components such as woodland, dykes, rural roads or hedgerows. Although this may not significantly affect the landscape character, the cumulative effect on these components may be significant – for example, where the last remnants of former shelterbelts are completely removed by two or more developments.

Cumulative impacts on landscape character arise when two or more developments introduce new features into the landscape. In this way, they can change the landscape character to such an extent that they create a different landscape character type, in a similar way to large scale afforestation. That change need not be adverse; some derelict or degraded landscapes may be enhanced as a result of such a change in landscape character, especially where opportunities for new woodland planting, or peatland restoration are maximised, for example."

In relation to cumulative visual impacts, the NatureScot guidance states:-

"Cumulative impacts on visual amenity can be caused by 'combined visibility' and/or 'sequential impacts':-

- Combined visibility occurs where the observer is able to see two or more developments from one viewpoint. Assessments should consider the combined effect of all wind farms which are (or would be) visible from relevant viewpoints. Combined visibility may either be in combination (where several wind farms are within the observer's arc of vision at the same time) or in succession (where the observer has to turn to see the various wind farms).*
- Sequential impacts occur when the observer has to move to another viewpoint to see different developments. Sequential impacts should be assessed for travel along regularly-used routes like major roads, railway lines, ferry routes, popular paths, etc. The magnitude of sequential effects will be affected by speed of travel and distance between viewpoints."*

The WEDGs describe a cumulative effect as "the perceived effect on the landscape of two or more wind energy developments visible from any one place", and provides guidance as to the aesthetic effects of multiple wind energy developments in various landscape contexts. It also requires that cumulative effects are represented using ZTV maps that show other wind energy developments.

Based on both sets of guidance, cumulative impacts can be experienced in a variety of ways.

In terms of landscape character, additional wind energy developments might contribute to an increasing sense of proliferation. A new wind farm might also contribute to a sense of being surrounded by turbines with little relief from the view of them.

In terms of visual amenity, there is a range of ways in which additional wind energy development might generate visual conflict and disharmony with other wind energy developments. Some of the most common include visual tension caused by disparate extent, scale or layout of neighbouring developments. A sense of visual ambivalence might also be caused by adjacent developments traversing different landscape types. Turbines from a proposed wind farm that are seen stacked in perspective against the turbines of nearer or further developments tend to cause visual clutter and confusion. Such effects are exacerbated when, for example, the more distant turbines

are larger than the nearer ones and the sense of distance is distorted.

Table 10.5 provides Macro Works' criteria for assessing the magnitude of cumulative effects. The approach adopted is informed by the NatureScot Guidelines (2021) and GLVIA3, but adopts a study area that is consistent with the main assessment to retain a proportionate focus on the most notable effects. As industry-specific guidance for the assessment of cumulative landscape and visual effects, this guidance is widely adopted for LVIA work and is considered best practice in Ireland, and the approach adopted in relation to many other projects across Ireland.

Other wind energy developments are the most relevant type of development in a cumulative assessment given the comparable characteristics. In this regard, small and domestic-scale wind turbines are generally not considered relevant given their proportions and potential to generate notable cumulative effects. Given the potentially extensive scope of including all other types of development within a cumulative assessment, a proportionate level of consideration is given to projects that are assessed as likely to significantly alter the cumulative landscape and visual baseline environment. Factors such as scale and proximity of a project are important factors, in addition to the characteristics of the development in question.

Criteria	Description
Very High	The proposed wind farm will strongly contribute to wind energy development being the defining element of the surrounding landscape. It will strongly contribute to a sense of wind farm proliferation and being surrounded by wind energy development. Strongly adverse visual effects will be generated by the proposed turbines in relation to other turbines.
High	The proposed wind farm will contribute significantly to wind energy development being a defining element of the surrounding landscape. It will significantly contribute to a sense of wind farm proliferation and being surrounded by wind energy development. Significant adverse visual effects will be generated by the proposed turbines in relation to other turbines.
Medium	The proposed wind farm will contribute to wind energy development being a characteristic element of the surrounding landscape. It will contribute to a sense of wind farm accumulation and dissemination within the surrounding landscape. Adverse visual effects might be generated by the proposed turbines in relation to other turbines.
Low	The proposed wind farm will be one of only a few wind farms in the surrounding area and will be viewed in isolation from most receptors. It might contribute to wind farm development becoming a familiar feature within the surrounding landscape. The design characteristics of the proposed wind farm accord with other schemes within the surrounding landscape and adverse visual effects are not likely to occur in relation to these.
Negligible	The proposed wind farm will most often be viewed in isolation or occasionally in conjunction with other distant wind energy developments. Wind energy development will remain an uncommon landscape feature in the surrounding landscape. No adverse visual effects will be generated by the proposed turbines in relation to other turbines.

Table 10.5: Magnitude of Cumulative Effect

10.2.13 ASSUMPTION AND LIMITATIONS

The assessment of effects has been derived through the use of publicly available information and site visits. In terms of the latter, whilst it is unfeasible to visit every single location from which the project might be visible, the authors of the assessment are familiar with the landscape and have undertaken extensive work previously within the study area.

10.2.14 VISUAL MATERIAL AND PHOTOGRAPHY

Photography and photomontages have been produced by Galettech Energy Services. The production of visual material has followed a highly accurate and verifiable process to accurately communicate the scale, appearance, context, form, and extent of the project. The photography has been captured during good weather conditions with high levels of visibility. Photography has been taken with a full-frame sensor camera (Canon EOS 6D) and 50mm fixed lens mounted on a tripod with a panoramic head.

10.3 DESCRIPTION OF THE EXISTING ENVIRONMENT

10.3.1 LANDSCAPE BASELINE

The landscape baseline represents the existing landscape context and is the scenario against which any changes to the landscape brought about by the project will be assessed. This also includes reference to any relevant landscape character appraisals and the current landscape policy context (both are generally contained within County Development Plans).

A description of the landscape context of the project site and study area is provided below under the headings of landform and drainage, vegetation and land use, centres of population, transport routes and public amenities and facilities as well as the immediate site context.

Additional descriptions of the landscape, as viewed from each of the selected viewpoints, are provided under the detailed assessments later using a similar structure. Although this description forms part of the landscape baseline, many of the landscape elements identified also relate to visual receptors i.e. places and transport routes from which viewers can potentially see the project. The visual resource will be described in greater detail below. **Figure 10.2** shows the project site in its landscape context and the immediate surroundings.



Figure 10.2: Project Site and its local context.

10.3.1.1 Landform and Drainage

The landform of the northern study area is an open, relatively uniform landscape characterised by extensive areas of peatland, including large areas of former industrial peatland now comprising cutaway bog, together with areas of cutover bog. There are three water features which converge to the northwest of the study area at Shannon Harbour, where the River Brosna and Grand Canal terminate at the much more influential Shannon River. The Shannon River, tributaries and islands define most of the western study area, as it loops towards the site before winding away to exit the study area at the northern end of Lough Derg. The last major waterway across the study area is the River Suck, which is a major tributary of the Shannon and enters the study area from the northwest before emptying into the Shannon at Shannonbridge. Working northeast from where they meet the Shannon, the Grand Canal and River Brosna run generally parallel to one-another, both crossing the north of the study area. The Little Brosna river follows a similar pattern over the south of the study area, running southeast/northwest from the southeast of the study area to the Shannon on the west.

There is a network of smaller streams and drains across the study area, some feeding wetlands and lakes, generally associated with bogland areas (particularly in the north of the study area).

As the Shannon defines the west of the study area, the main upland areas of the study area define the east of the study area. The Slieve Bloom Mountains, with a maximum height of over 500m (Arderin 527amsl) line the eastern boundary of the study area from to the south. Generally, the south and east of the study area have a more varied topography, with distinctive upland areas (most significant of which are the Slieve Blooms), as well as more subtle local rolling landform. There are some localised hilly areas in the southwest, to the north of Lough Derg, as well as isolated features such as Cloghan Hill in the north.

Lastly, there are a number of eskers across the study area, which create localised areas of elevation, contrasted with enclosure between them. The most significant of these is the Clonmacnoise Esker which traces the River Shannon along the northwest boundary of the study area, but there are other smaller examples throughout the study area.

10.3.1.2 Vegetation and Land Use

Across the central and northern study area there is a high proportion of former industrial peatland, including extensive areas of cutaway bog at various stages of natural colonisation and rehabilitation, set within a network of waterways and improved agricultural land, generally in pastoral use. Commercial conifer plantations, including Sitka spruce plantations, are also a notable feature of parts of the former peatland landscape. While active commercial peat extraction is now limited within the study area, there remains a strong and readily discernible 20th Century Bord na Móna legacy across the landscape. Areas within Lough Boora Discovery Park provide some of the clearest contrasts between the former industrial peatland landscape and the developing ecological and amenity value associated with rehabilitation and restoration. Areas of native woodland and scrub also occur amongst the conifer plantations and agricultural land.

In contrast, the southern part of the study area contains smaller and, in places, more intact areas of bog. Along the southeast of the study area, the Slieve Bloom Mountains are capped by bog, while their lower slopes are generally forested. Areas of forestry also occur throughout the wider southern study area, although these tend to comprise smaller and more dispersed blocks than those associated with the extensive peatland areas to the north.

Field sizes vary throughout the study area, with smaller and more irregular fields generally associated with local landform and drainage features, and larger fields occurring where more cohesive areas of agricultural land are present, including around the foothills of the Slieve Bloom Mountains and to the south and west of the Little Brosna and River Shannon in the southwest of the study area.

A number of small to medium sized settlements also occur throughout the study area, including several associated with the principal waterways and transport routes, as described below.

10.3.1.3 Centres of Population

Birr is the largest settlement within the study area. Smaller towns include Ferbane (in the northern extents of the study area), Kilcormac (northeast), and Banagher (northwest on the Shannon).

Clusters of residences and settlements generally occur at the intersection of main routes or waterways, of which there are many scattered over the study area. These include: Pollagh, along the grand canal to the northeast, Cloghan, along the N62 to the northwest, Shannonbridge, at the junction of the Shannon and Suck to the far northwest, and Kinnitty at the base of the Slieve Blooms. The nearest cluster of residences and services is at Fivealley, along the N52, directly east of the site.

Finally, the entire study area, with the exception of the most sensitive areas around the Shannon and Slieve Blooms, is scattered with residences and short bursts of linear residential development along local roads.

10.3.1.4 Transport Routes

The main transport routes across the study area are the national roads which cross the central study area, converging at Birr, south of the site. The N62 is located approx. 300m from a turbine at the nearest point, running north/south across the central study area. The N62 combines with the N52 to the south of the site, running into Birr, before diverging again to the south of the population centre. The only other national road across the study area is the N65 which skirts the southwest of the study area to the north of Lough Derg.

Connecting the national roads and population centres throughout the study area are the following regional roads; R357, R356, R421, R436, R437, R438, R439, R440, R444, R491, R492, and R493. The nearest of these is the R439, which runs along the west of the site to/from Birr to Banagher. The R489 and R440 also diverge from Birr, to the west and east respectively. The R421 and R438 cross the study area diagonally on opposite sides of the site. The R421 traces the Slieve Bloom foothills, while the R438 follows the Shannon Corridor.

A network of local roads traverse the study area. It should be noted that, consistent with several lowland areas across the Midlands, some roads in the study area are elevated above the immediately surrounding terrain. This has meant that views of the immediate land use in the vicinity of the road are often more pronounced from these roads than may be the case elsewhere in the country. Be that as it may, such marginally elevated views are often curtailed by roadside vegetation.

10.3.1.5 Tourism, Recreation, and Heritage Features

Whilst the central study area is not synonymous with tourism, heritage and recreational activities, a number of these features occur within the study area's wider surrounds. The most notable of these is the monastery at Clonmacnoise on the southern bank of the River Shannon in County Offaly. Clonmacnoise is located marginally outside of the study area but included due to its significance. It is a candidate World Heritage Site with a rich and varied history. A submission prepared by the Department of Environment, Heritage and Local Government in respect of its nomination as a World Heritage Site states that Clonmacnoise is;

“an unparalleled and outstanding example of a relict early medieval insular monastic city unobscured by modern building development”. It adds that it is

set “within a superlative semi-natural landscape that deepens its spiritual qualities, adding greatly to its authenticity and integrity”.

The River Shannon is the largest river in the country and the section within the study area is an important recreational asset enjoyed by anglers and boating enthusiasts. At its nearest point, the River Shannon is 8.5km to the north/west of the site, and is joined by the Grand Canal from Dublin a further 1km north (9.5km from the site). The Grand Canal runs east-west across the study area to the north of the site. The Grand Canal is currently only a modest recreational asset enjoyed predominantly by walkers and canal boat enthusiasts. However, there is potential for it to become more popular with the potential to host similar walking and cycling facilities as applied to the Royal Canal.

Lough Boora Parklands is a composite area of Bord na Móna cutaway bogs that have been regenerated as naturalistic wetlands and amenity features over the last 20 years. This is a pilot project for the regeneration of potentially vast areas of cutaway bog throughout the country. The strategy for some areas of the Parklands, such as the Drinagh Wetland, is little intervention or public access in order to allow for natural regeneration of undisturbed habitat. For other areas, such as Lough Cloghan and Lough Boora/Finnimore Lakes, there is a greater emphasis on recreational amenity. This is generally in the form of walking and cycling tracks but also includes stocked fishing ponds and a sculpture garden. The Lough Boora Parklands occur throughout the area to the east of the site with the most recent addition, Drinagh Wetland, just over 1km away. The nearest publicly accessible feature of the Parklands is Lough Cloghan, approximately 8.5km to the north.

There are multiple national way-marked trails across the study area, with The Slieve Bloom Way, The Offaly Way, the Grand Canal Way and the Hymany Way. The Slieve Bloom Way winds its way through the valleys of the Slieve Bloom range at the south-eastern periphery of the study area. It links with the Offaly Way near the settlement of Kinnitty, which runs northward for 37km to Lemanaghan on the R436. The Offaly Way is approximately 10km to the northeast of the project site at its nearest point, and intersects the Grand Canal Way where it crosses the Grand Canal over the northern sections of Lough Boora. The Grand Canal Way follows the Grand Canal across the study area to terminate at the Shannon River. Slightly further south along the Shannon is the Hymany Way which follows the river to Portumna/Lough Derg.

There are smaller (in physical extent) features throughout the study area, in particular built features of scenic and historic amenity values such as Kinnitty Castle, and Birr Castle. Further details on the heritage values of the site will be discussed within the relevant specialist chapters.

10.3.2 LANDSCAPE POLICY CONTEXT AND DESIGNATIONS

The relevant CDP covering the project site is the *Offaly County Development Plan 2021-2027* ('the Offaly CDP'). However, the *Tipperary County Development Plan 2022-2028* ('the Tipperary CDP') is located 4km from the site at its nearest point. As can be seen in **Figure 10.3**, the *Laois County Development Plan 2021-2027* ('the Laois CDP'), *Galway County Development Plan 2022-2028* ('the Galway CDP'), and *Roscommon County Development Plan 2022-2028* ('the Roscommon CDP') occupies smaller components of the study area. Reference has been made to the CDP context of these administrative areas insofar as there is the likelihood of the project generating

indirect effects on landscape character, or visual effects.

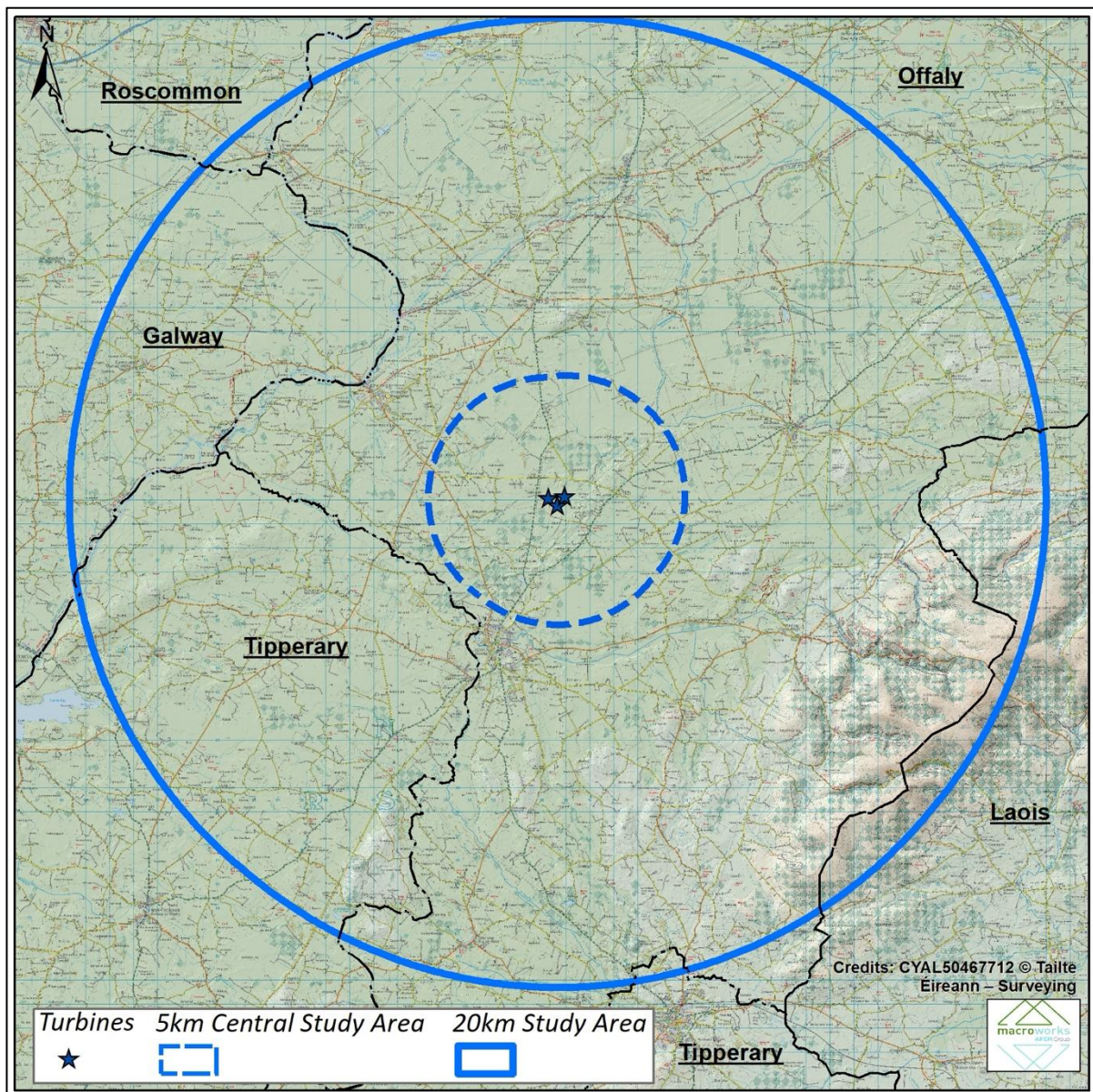


Figure 10.3: County Boundaries within the Study Area

10.3.2.1 2006 Guidelines and 2019 Wind Energy Development Guidelines

Wind energy development within the Republic of Ireland is undertaken in accordance with the WEDGs and DWEDGs.

Recommendations on the siting and design of wind energy developments are provided in Chapter 6 of the WEDGs and DWEDGs based on 6 no. potential landscape character types. As described in the landform/drainage and landcover/land use section, the eastern side of the project site is generally located within the 'Flat Peatland' landscape, while the western side is partially 'Flat Peatland' and partially 'Hilly and Flat Farmland'.

'Flat Peatland' Landscape Type

The key characteristics are outlined in the WEDGs and DWEDGs as follows:-

- Landscapes of this type comprise a vast planar extent of peatland and have

significant potential for future wind energy development;

- In their relatively undisturbed and naturalistic state the wet bogs comprise a landcover mostly of heather, wild grasses and bog cotton, as well as patches of coniferous plantation;
- Some of these bogs have been harvested for peat and may comprise long parallel ridges of stacked milled peat and deep drains;
- Evidence of human habitation is sparse;
- Roads tend to run in straight lines over considerable distances, followed by electricity and/or telephone lines; and
- This landscape type is horizontal, open, extensive and also characterised by a sense of remoteness.

"The preferred approach here is one of large-scale response. The vast visual openness with few, if any, dominant geometric elements provides a certain freedom in the siting and design of wind energy developments."

Key recommendations for siting and design within the 'Flat peatland' landscape type are set as follows:

Location

"Wind energy developments can be placed almost anywhere in these landscapes from an aesthetic point of view. They are probably best located away from roadsides allowing a reasonable sense of separation. However, the possibility of driving through a wind energy development closely straddling a road could prove an exciting experience."

Spatial Extent

"The vast scale of this landscape type allows for a correspondingly large spatial extent for wind energy developments."

Spacing

"Regular spacing is generally preferred, especially in areas of mechanically harvested peat ridges."

Layout

"In open expanses, a wind energy development layout with depth, preferably comprising a grid, is more appropriate than a simple linear layout. However, where a wind energy development is located close to feature such as a river, road or escarpment, a linear or staggered linear layout would also be appropriate."

Height

"Aesthetically, tall turbines would be most appropriate. In any case, in terms of viability they are likely to be necessary given the relatively low wind speeds available. An even profile would be preferred."

Cumulative Effect

"The openness of vista across these landscapes will result in a clear visibility of other wind energy developments in the area. Given that the wind energy developments are likely to be extensive and high, it is important that they are not perceived to crowd and dominate the flat landscape. More than one wind energy development might be acceptable in the distant background"

provided it was only faintly visible under normal atmospheric conditions."

'Hilly and Flat Farmland' Landscape Type

The key characteristics are outlined in the 2006 and 2019 guidance as follows:-

- Intensively managed farmland, whether flat, undulating or hilly;
- A patchwork of fields delineated by hedgerows varying in size;
- Farmsteads and houses are scattered throughout, as well as occasional villages and towns;
- Roads, and telegraph and power lines and poles are significant components; and,
- A working and inhabited landscape type.

"The essential key here is one of rational order and simplicity, as well as respect for scale and human activities. The predominance of field pattern introduces an organised patchwork landcover structure that not only prompts a similar response in the siting and design of wind energy developments, but also provides a spatial structure and rhythm. Although hilly and flat farmland type is usually not highly sensitive in terms of scenery, due regard must be given to houses, farmsteads and centres of population."

Key recommendations for siting and design within the 'Hilly and Flat Farmland' landscape type are set as follows:

Location

"Location on ridges and plateaux is preferred, not only to maximise exposure, but also to ensure a reasonable distance from dwellings. Sufficient distance should be maintained from farmsteads, houses and centres of population in order to ensure that wind energy developments do not visually dominate them. Elevated locations are also more likely to achieve optimum aesthetic effect."

Spatial Extent

"This can be expected to be quite limited in response to the scale of fields and such topographic features as hills and knolls. Sufficient distance from buildings, most likely to be critical at lower elevations, must be established in order to avoid dominance by the wind energy development."

Spacing

"The optimum spacing pattern is likely to be regular, responding to the underlying field pattern. The fields comprising the site might provide the structure for spacing of turbines. However, this may not always be the case and a balance will have to be struck between adequate spacing to achieve operability and a correspondence to field pattern."

Layout

"The optimum layout is linear, and staggered linear on ridges (which are elongated) and hilltops (which are peaked), but a clustered layout would also be appropriate on a hilltop..."

Height

"Turbines should relate in terms of scale to landscape elements and will

therefore tend not to be tall. However, an exception to this would be where they are on a high ridge or hilltop of relatively large scale. The more undulating the topography the greater the acceptability of an uneven profile, provided it does not result in significant visual confusion and conflict."

Cumulative Effect

"It is important that wind energy development is never perceived to visually dominate. However, given that these landscapes comprise hedgerows and often hills, and that views across the landscape will likely be intermittent and partially obscured, visibility of two or more wind energy developments is usually acceptable."

Siting in Relation to Individual Properties ('Setback')

Section 6.18 of the Draft Revised Wind Energy Development Guidelines (DWEDGs) (December 2019) refers to appropriate setback distances for visual amenity purposes. The guidelines outline a mandatory minimum setback distance of "500 meters" or the distance of "4 times the tip height" of the proposed turbines "between the nearest point of the curtilage of any residential property". This is set out in Specific Planning Policy Requirements (SPPR) 2 of the DWEDGs which is included below:

SPPR 2: *With the exception of applications where reduced setback requirements have been agreed with relevant owner(s) as outlined at 6.18.2 below, planning authorities and An Bord Pleanála (where relevant), shall, in undertaking their development planning and development management functions, ensure that a setback distance for visual amenity purposes of 4 times the tip height of the relevant wind turbine shall apply between each wind turbine and the nearest point of the curtilage of any residential property in the vicinity of the proposed development, subject to a mandatory minimum setback of 500 metres from that residential property. Some discretion applies to planning authorities when agreeing separation distances for small scale wind energy developments generating energy primarily for onsite usage. The planning authority or An Bord Pleanála (where relevant), shall not apply a setback distance that exceeds these requirements for visual amenity purposes.*

Evaluation of 'Setback' Recommendations in relation to the Proposed Project

The nearest residential dwelling to any of the proposed turbines is located approximately 710m from the nearest turbine, along the local road to the south of the site between Eglish and Troopers Hill. This dwelling is associated with an economically involved landowner. All non-involved residential properties are located beyond the setback distance of four-times turbine tip height identified in the DWEDGs, which equates to 800m for the maximum 200m turbine tip height.

It is worth noting that the DWEDGs are not yet adopted, although new wind farm projects tend to apply their recommended setback from sensitive receptors. It is important to note that the project has been designed and sited to adhere to both the WEDGs and DWEDGs to the extent that the draft updated guidelines align with current best practice.

10.3.2.2 Offaly County Development Plan 2021-2027

As with the previous iteration, the latest Offaly CDP does not incorporate a traditional Landscape Character Assessment. Instead, it simply categorises the landscape of the

county into High, Moderate/Medium and Low sensitivity classes based on topographical and land cover features such as eskers and peatland.

The project site is classified as Medium and Low sensitivity on the basis of being within peatland, mixed conifer/woodland and farmland, whereas areas of 'High' sensitivity in the surrounding area are associated with Eskers, Lough Boora and the Shannon River corridor (including Clonmacnoise).

Moderate sensitivity areas are described as;

“Moderate sensitivity areas can accommodate development pressure but with limitations in the scale and magnitude. In this category of sensitivity, elements of the landscape can accept some changes while others are more vulnerable to change.”

Low sensitivity landscapes are described as:

“Low sensitivity areas are robust landscapes which are tolerant to change, such as the county's main urban and farming areas, which have the ability to accommodate development.”

A number of 'Areas of High Amenity' are also designated in County Offaly, 8 (of 13) of which are located within the study area and include the Shannon River and Callows (1), The Grand Canal (2), Lough Boora Discovery Park (3), Pallas Lake (4), Slieve Bloom Mountains (5), Eiscir Riada (9), Other Eskers (11), Clonmacnoise (12). These Areas of High Amenity (AHA) are deemed “worthy of special protection / enhancement due to their uniqueness and scenic / amenity value” and the designation is “additional to statutory national and European designations which may overlap with these AHA”.

Offaly Scenic Designations

Section 4.14.2 of the Offaly CDP 'Protection of Key Scenic Views, Prospects and Key Amenity Routes' lists “the Key Scenic Views and Prospects ‘from’ i.e. the specific road and/or townlands from which the view is experienced and ‘to’ the particular amenity or area which is visible from that view” within Table 4.21. An analysis of those located within the study area and their relevance to the assessment is provided in **Table 10.6**.

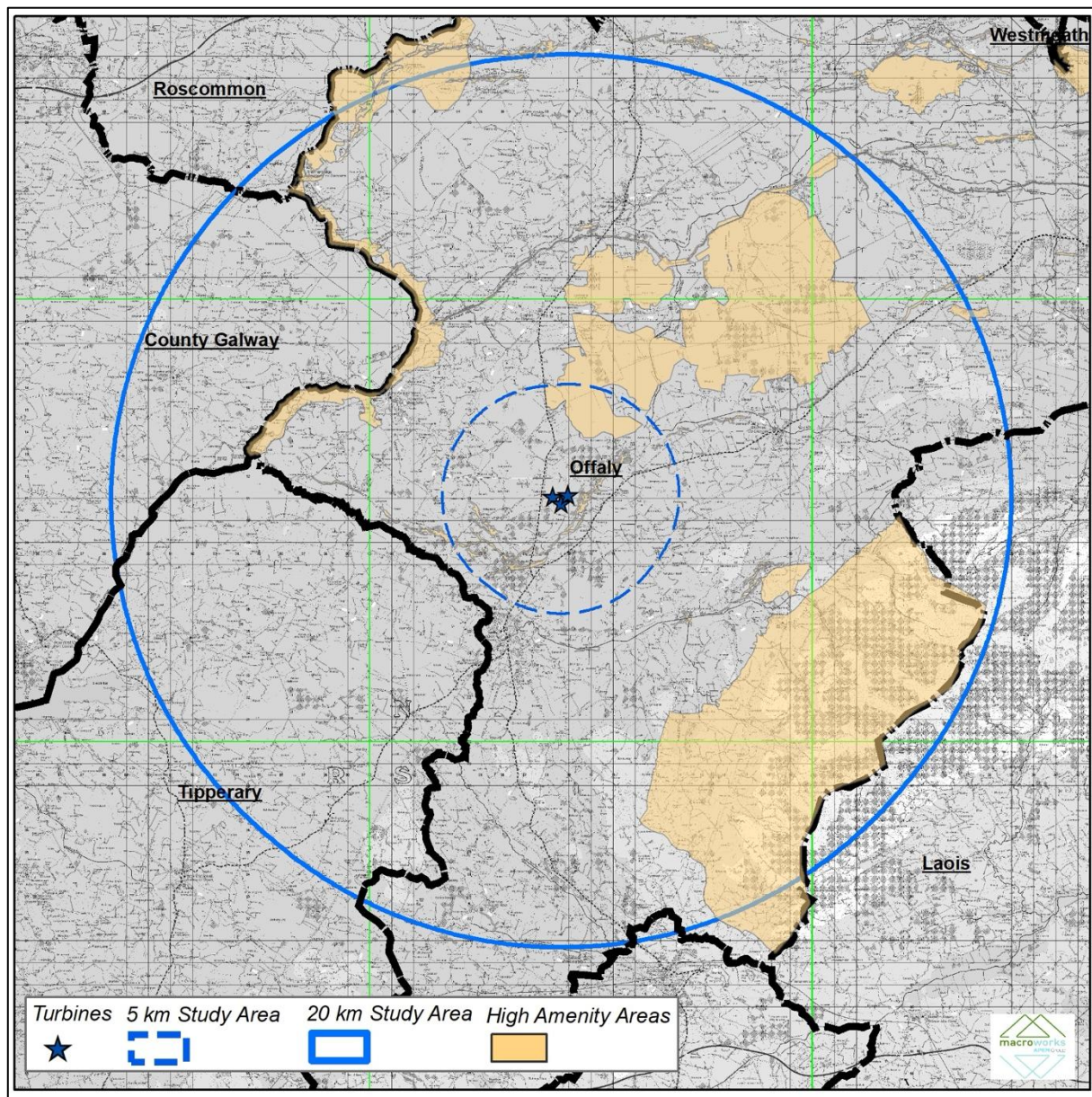


Figure 10.4: Offaly Areas of High Amenity

Offaly County Development Plan 2021-2027 - Chapter 4 (Landscape and Biodiversity) - Policies

The Biodiversity and Landscape Policies of the Offaly CDP are divided based on landscape features (Designations, Geology, Eskers, Quarries, Peatlands, Waterways, Lakes, Wetlands, Trees, Forestry, and Hedgerows), followed by species specific policies (All Ireland Pollinator Plan, Invasive Species), and strategy/character based policies (Green Infrastructure, Areas of High Amenity, Landscape, Key Scenic Views, Prospects, Amenity Routes), with the addition of a few specific policies not included in the above list. Biodiversity and Landscape Objectives follow the same format. These are listed below and included in full when relating to amenity, landscape and scenic designations (e.g. Landscape and Visual).

Policies which are pertinent considerations in the assessment of the project include BLP-01 to BLP-07 (Designated and Non-Designated Sites), BLP-09 and BLP-11 (Geology,

Eskers and Quarries), BLP-14, BLP-16 and BLP18 (Peatlands), BLP-19 and BLP-23 (Waterways, Lakes and Wetland Landscapes), BLP-24 (Trees, Forestry and Hedgerows), BLP-35 (Areas of High Amenity - below), BLP-38 to BLP-41 (Landscape - below), and BLP-43 (Scenic designations - below).

Landscape and Biodiversity Policies - Areas of High Amenity

“BLP-35 It is Council policy to protect and preserve the county's Areas of High Amenity namely the Slieve Bloom Mountains, Clonmacnoise Heritage Zone, Durrow High Cross, Abbey and surrounding area, the River Shannon, Lough Boora Discovery Park, Grand Canal, Croghan Hill, Raheenmore Bog, Pallas Lake, Clara Bog, Clara eskers, Eiscir Riada and other eskers. Notwithstanding the location of certain settlements, or parts of, for which there are settlement plans (Towns, Villages, Sráids), within the Areas of High Amenity, it is not the intention of this policy to hinder appropriate sustainable levels of development (as set out in the plans and subject to proper planning). Further, it is policy to facilitate the sustainable extension and expansion of existing visitor, tourist related or other rural enterprises within the Areas of High Amenity, where such development is appropriate and where it can be demonstrated that it gives 'added value' to the extending activity and to the immediate area which is the subject of the 'Area of High Amenity' designation.”

Landscape Policy

“BLP-38 It is Council policy to protect and enhance the county's landscape, by ensuring that development retains, protects and where necessary, enhances the appearance and character of the county's existing landscape.”

“BLP-39 It is Council policy to seek to ensure that local landscape features, including historic features and buildings, hedgerow, shelter belts and stone walls, are retained, protected and enhanced where appropriate, so as to preserve the local landscape and character of an area, whilst providing for future development.”

“BLP-40 It is Council policy to ensure that consideration of landscape sensitivity is an important factor in determining development uses.”

“BLP-41 It is Council policy to require a Landscape/Visual Impact Assessment to accompany significant proposals, located within or adjacent to sensitive landscapes. This assessment will provide details of proposed mitigation measures to address likely negative impacts.”

Landscape Policy - Protection of Key Scenic Views and Prospects and Key Amenity Routes

“BLP-43 It is Council policy to require a Landscape/Visual Impact Assessment to accompany significant proposals that are likely to significantly affect Key Scenic Views and Prospects as listed in Table 4.21 and Key Amenity Routes as listed in Table 4.22.”

Offaly County Development Plan 2021-2027 - Chapter 4 (Landscape and Biodiversity) – Objectives

Objectives which are pertinent considerations in the assessment of the project include BLO-02 (Designated and Non-Designated Sites), BLO-22 (Areas of High Amenity - below), BLO-23 to BLO-25 (Landscape - below), BLO-26, and BLO-27 (Scenic designations - below).

Landscape Objectives - Areas of High Amenity

“BLO-22 *It is an objective of the Council to ensure that new development, whether individually or cumulatively, does not impinge in any significant way on the character, integrity and distinctiveness of or the scenic value of the Areas of High Amenity listed in Table 4.17. New development in Areas of High Amenity shall not be permitted if it;*

- Causes unacceptable visual harm;
- Introduces incongruous landscape elements; and
- Causes the disturbance or loss of (i) landscape elements that contribute to local distinctiveness; (ii) historic elements that contribute significantly to landscape character and quality such as field or road patterns; (iii) vegetation which is a characteristic of that landscape type and (iv) the visual condition of landscape elements.”

Landscape Objectives - Landscape

“BLO-23 *It is an objective of the Council to prepare a County Landscape Character Assessment in accordance with all relevant legislation and guidance documents and following the forthcoming National and Regional Landscape Character Assessment.”*

“BLO-24 *It is an objective of the Council to have regard to the Landscape Sensitivity Areas in Tables 4.18, 4.19 and 4.20 in the consideration of planning applications.”*

“BLO-25 *It is an objective of the Council to protect skylines and ridgelines from development where such developments will create significant visual intrusion.”*

Landscape Objectives - Protection of Key Scenic Views, Key Prospects and Key Amenity Routes

“BLO-26 *It is an objective of the Council to protect Key Scenic Views and Key Prospects contained in Table 4.21, and Key Amenity Routes as listed in Table 4.22 from inappropriate development.”*

“BLO-27 *It is an objective of the Council to ensure that proposed developments take into consideration their effects on views from Key Scenic Views and Prospects and Key Amenity Routes and are designed and located to minimise their impact on this views and prospects.”*

Scenic designations within Offaly relevant to the assessment are outlined in

the visual baseline section.

Offaly Wind Energy Designations

The Wind Energy strategy included in the current County Development Plan overlays these higher sensitivity areas, as well as the scenic views and routes, in order to classify areas of the county for a Wind Energy Strategy.

The site/central study area is located within areas 7 and 8. Within area 7: Area generally south of Cloghan and Birr Environs, the "Area generally south of Cloghan" is deemed "Open for consideration for Wind Energy Development in principle", while 'Birr Environs' is deemed "not suitable for windfarms". Within Area 8 'Area generally south and west of Kilcormac' is deemed "Area not deemed Suitable for Windfarms". However, the more detailed 'Wind Energy Designations' map shows that the proposed turbines are located within the identified 'Areas Open for Consideration for Wind Energy Development'."

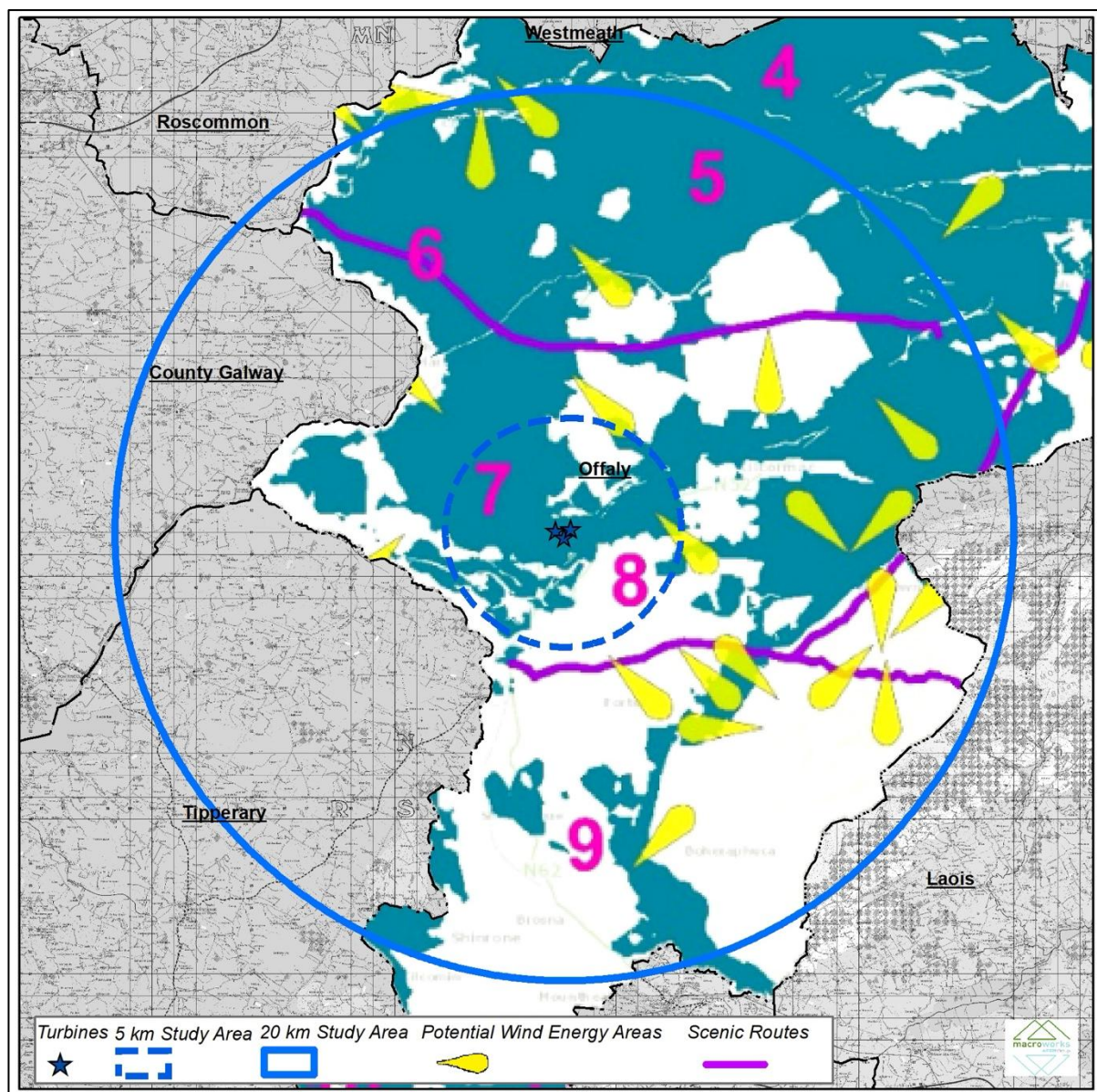


Figure 10.5 Wind Energy Strategy Map No. 8: Protected Views and Potential Wind Energy Areas

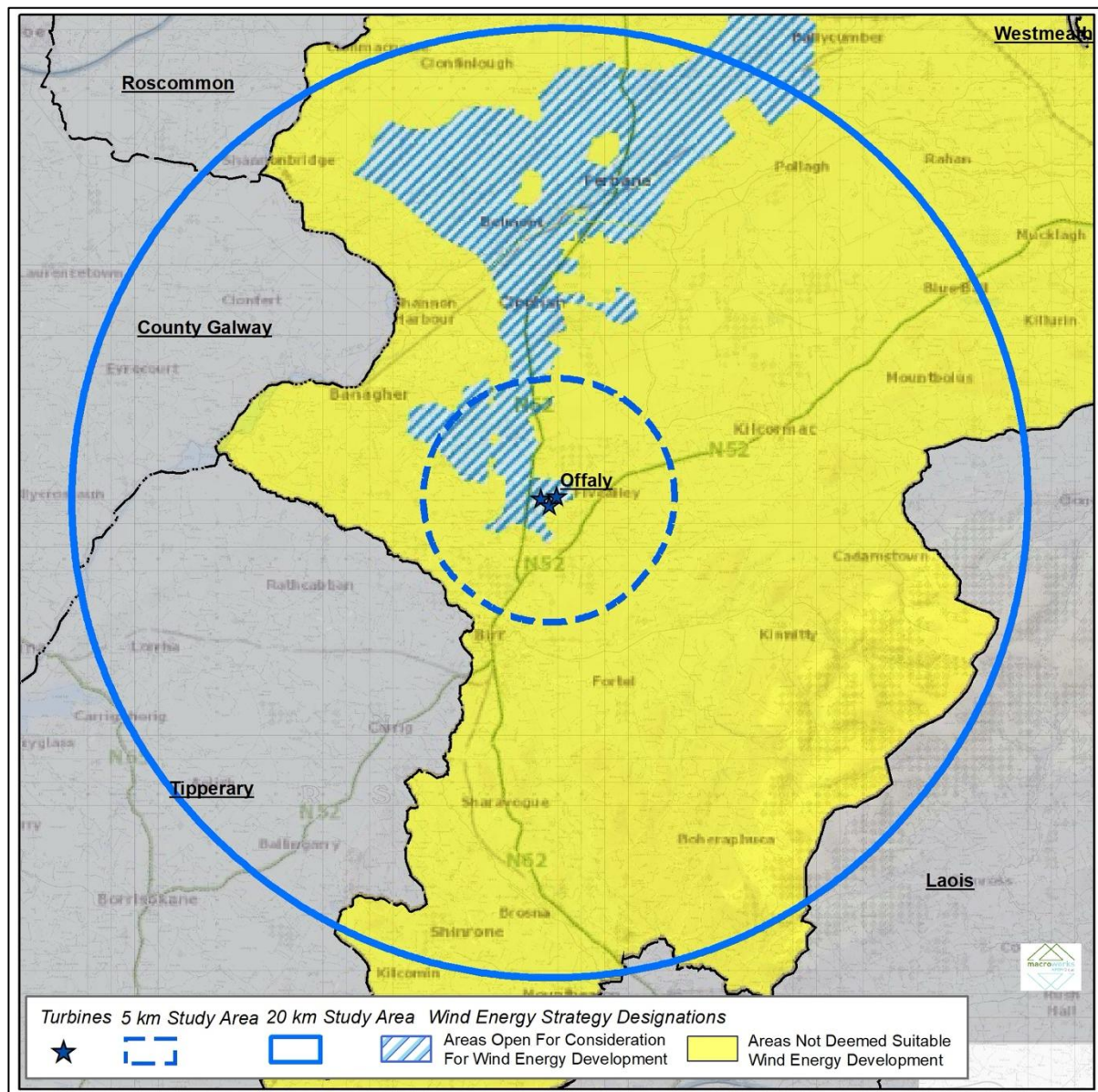


Figure 10.6 Offaly Wind Energy Strategy Map No. 10: Wind Energy Strategy Designations

10.3.2.3 Tipperary County Development Plan 2022-2028

Whilst the project site is wholly contained within county Offaly, the Tipperary County border is situated less than 4km from the site at its nearest point. The nearest and most relevant landscape character areas in County Tipperary are:

'LCA 7 – Borrisokane lowlands':

"Peatlands and wet mixed farmlands. The plains also contain large areas where impeded drainage and peat formation give rise to less densely inhabited areas and more marginal agriculture with very open vistas".

'LCA 11 – Lakeland Waterside (Shannon Callows)':

"some of Ireland's most important and cherished large lake scenery and recreation areas".

The following sensitivity and compatibility with 'Wind Farm' land use apply for each

landscape character area: LCA 7: Borrisokane Lowlands has been classified with a Moderate sensitivity to change, reduced capacity, and low compatibility with wind farm land use. LCA 11: Lakeside Waterside (Shannon Callows) has been classified with a Class 3 High sensitivity to change, low capacity, and least compatibility with wind farm land use.

10.3.3 VISUAL BASELINE

Only those parts of the study area that potentially afford views of the project are relevant to this part of the assessment. Therefore, the first part of the visual baseline is establishing a ZTV and, subsequently, identifying visual receptors on which to base the visual impact assessment.

10.3.3.1 Zone of Theoretical Visibility (ZTV)

A computer-generated ZTV map (**Annex 10.2**) has been prepared to illustrate locations from where the project is potentially visible. The ZTV map is based solely on terrain data (bare ground visibility) and ignores features such as trees, hedges, or buildings, which may screen views. Given the nature of the topography in parts of the landscape, and the combined influence of successive layers of vegetation throughout the landscape, the main value of this form of ZTV mapping is to determine those areas from which the project will not be visible, such as to retain a proportionate focus on locations where there is potential for visibility.

ZTV mapping is enclosed at **Annex 10.2**; having been produced to illustrate three separate scenarios, half hub height, hub height, and tip height. In combination, these help to present the theoretical visibility of the wind turbines.

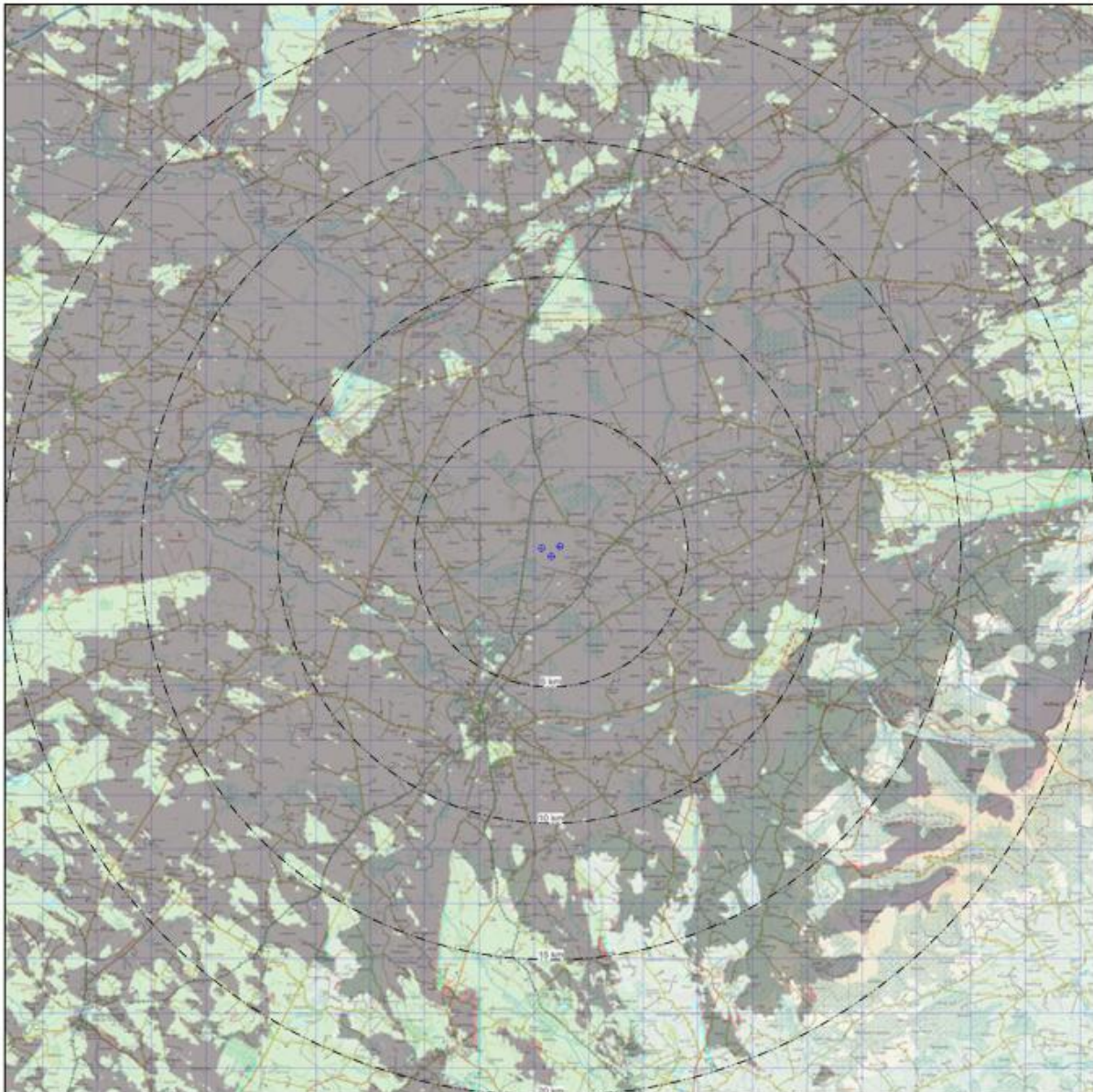


Figure 10.7: Bare-ground ZTV Map based on Turbine Tip Height (Refer to Figure 112 of Annex 10.2 for full version)

The ZTV maps show that comprehensive visibility of all the proposed turbines will be theoretically afforded from the central portions of the study area (<5km from the site) and extending up to 10km. This large block of comprehensive visibility relates to the notably flat nature of the landscape in the central study area which principally comprises large peatbogs and pastoral farmland.

Nevertheless, within the wider surrounds of the 20km study radius consistent theoretical visibility begins to become patchy as the terrain begins to transition into a low rolling landscape comprising of low hills and eskers. This is most evident in the scenic southwest and east/southeast extents of the study area where the Shannon River Corridor towards Lough Derg and the foothills of the Slieve Bloom mountains introduce variety to the landform and influence the degree of visibility. There are pockets of rapidly changing visibility throughout the study area caused by similar landform variability (including Eskers to the north of the site) although not to the same extent as

the southern half.

Key receptors contained within the ZTV (i.e with potential visibility) within the central study area includes the settlement of Birr (the largest within the study area by some margin). In terms of transport receptors, the N62 and N52 national secondary routes and the R439, R438, R440, R421, R357, R437, R444, and R356 regional roads. The central study area also contains a network of local roads, rural residential dwellings and farmsteads, all of which have the potential to be afforded comprehensive theoretical visibility of the project. Consequently, a strong emphasis will be placed on representing these local community receptors in the LVIA.

The study area is highly variable with regards to scenic amenity, with large swathes of low landscape sensitivity across the central study area, however intersecting these and overlaying the periphery of the study area are areas of medium and high landscape sensitivity, alongside a high density of scenic views.

In particular, the wider southern (to the east and west) portions of the study area in both Offaly and Tipperary are of higher scenic amenity and sensitivity as a consequence of the rolling terrain and bordering the natural attractions of the Shannon River, Lough Derg, and Slieve Bloom Mountains. The same landform changes that introduce higher levels of amenity through the southern section of the landscape reflect the degree of visibility through these areas, and aside from upper reaches of hills and ridges, the southern portion of the study here has varied potential for visibility. The northern and north-eastern quadrants of the study area similarly have a notable degree of scenic amenity due to the numerous river and canal corridors, however there is a more consistent (high) degree of visibility through these areas. Where there is potential for scheme visibility from any of these designated viewpoints, they are to be included as viewpoints within this Landscape chapter. It is important to note that due to the large number of scenic views within the wider study area, one viewpoint may be chosen to represent a cluster of designated views.

10.3.3.2 Views of Recognised Scenic Value

Views of recognised scenic value are primarily indicated within CDPs in the context of scenic views/route designations, but they might also be indicated on touring maps, guidebooks, roadside rest stops or on postcards that represent the area. The relevant scenic designations (views, prospects, and scenic routes) are outlined in **Table 10.6**, alongside a critical analysis to determine their relevance to the assessment of visual effects.

Tipperary County Development Plan 2022-2028 - Scenic Designations

Appendix 3 of the Tipperary CDP 'Landscape Character Assessment and Schedule of Views and Routes' lists "*scenic views and routes in the county, which include views of key heritage sites, and inter-county scenic tourism routes*". These are shown on Figure 11.1: *Primary and Secondary Amenity Areas and Views and Scenic Routes* within Volume 1 of the Tipperary CDP.

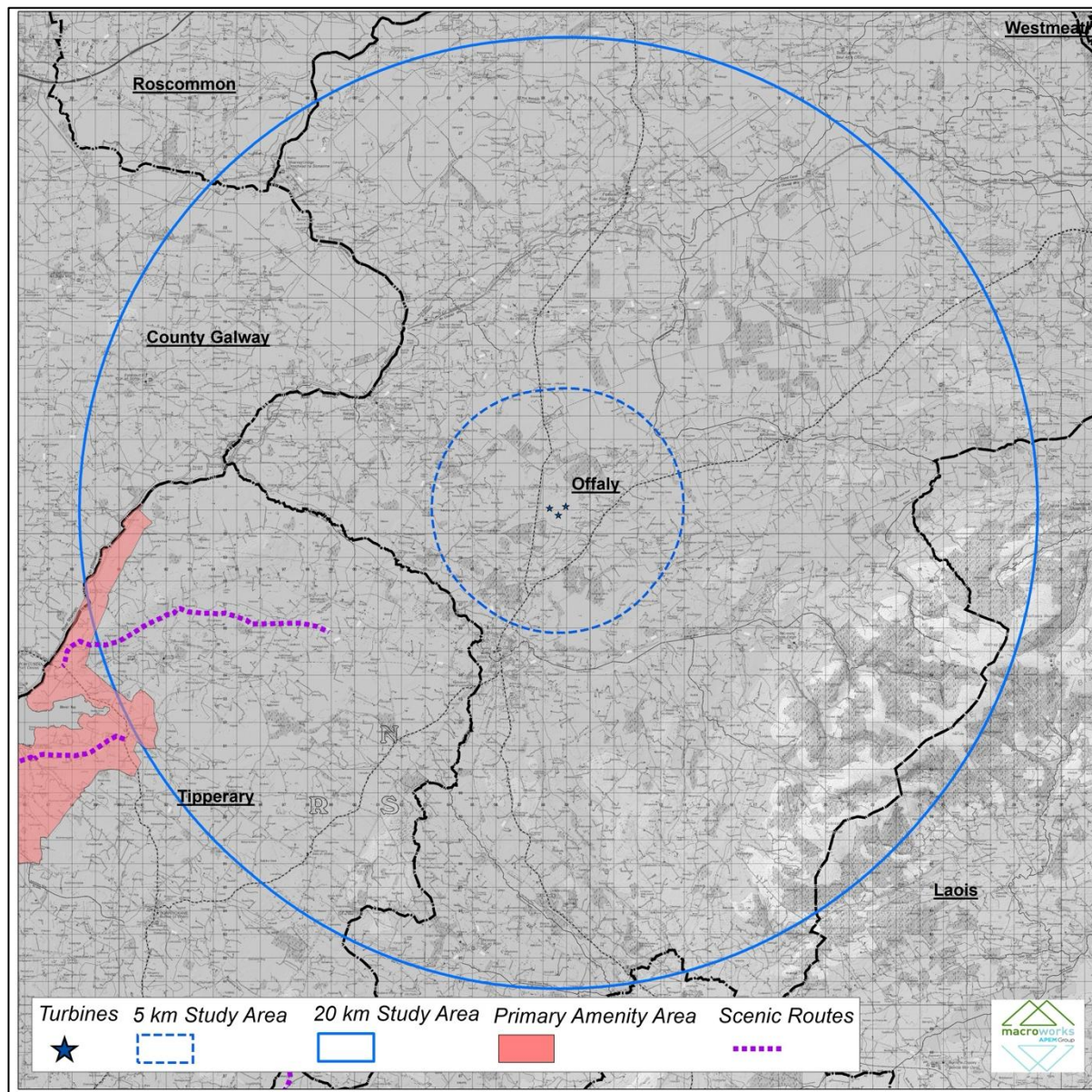


Figure 10.8 Tipperary Scenic Designations

Galway County Development Plan 2022-2028 – Scenic Designations

Scenic views and routes in County Galway are contained within the Landscape Character Assessment, Appendix 4 of the Galway County Development Plan. The Schedule of Protected Views (Table 6.4) and the accompanying map (Map 08 – View Points) are contained within Section 6 of the LCA, and identifies 52 Viewing Points. Designated Scenic Routes are described in Section 7 shown on Map 09 – Scenic Routes.

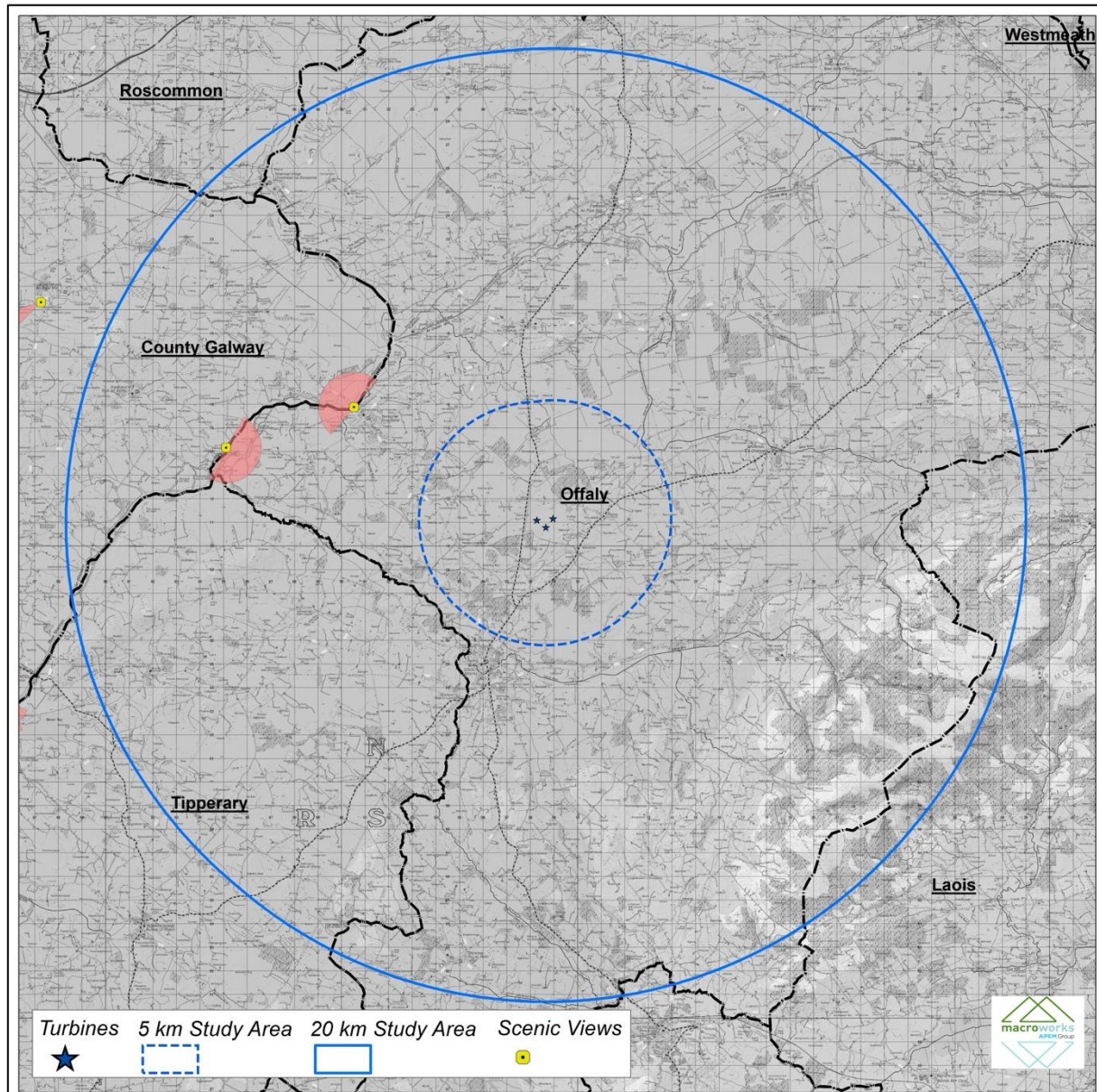


Figure 10.9: Galway Scenic Designations

Roscommon County Development Plan 2022-2028 – Scenic Designations

Scenic views and routes in County Roscommon are contained within Appendix 1 of the Roscommon Landscape Character Assessment, Figure 10 to Figure 23.

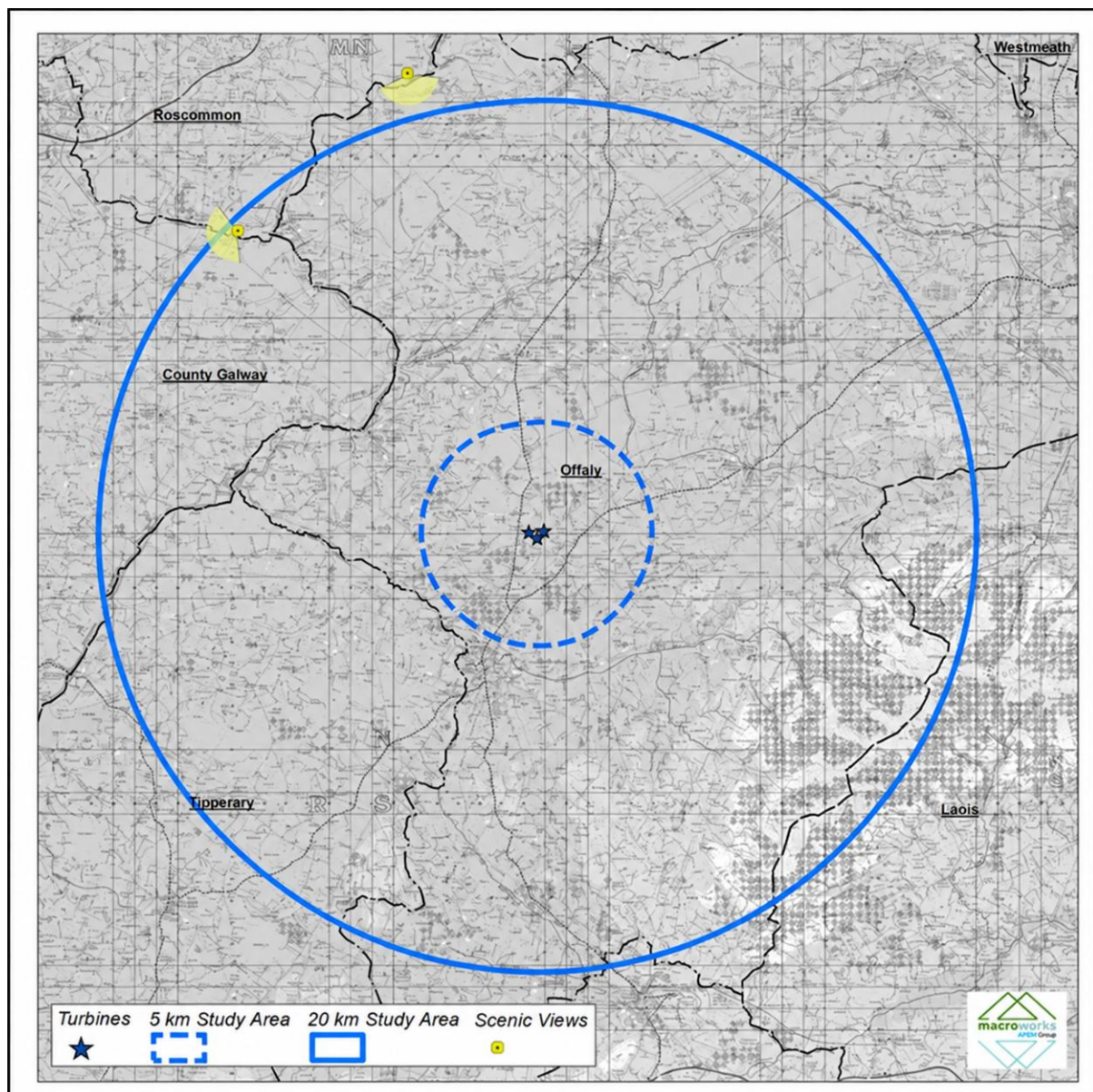


Figure 10.10: Roscommon Scenic Designations

Laois County Development Plan 2021-2027 – Scenic Designations

Scenic views and routes in County Laois are shown on Map 11.8 Views and Prospects of the Laois CDP. These are described within Section 11.11.1 of the Written Statement, Chapter 11, and Table 11.7 Scenic Views and Prospects in County Laois.

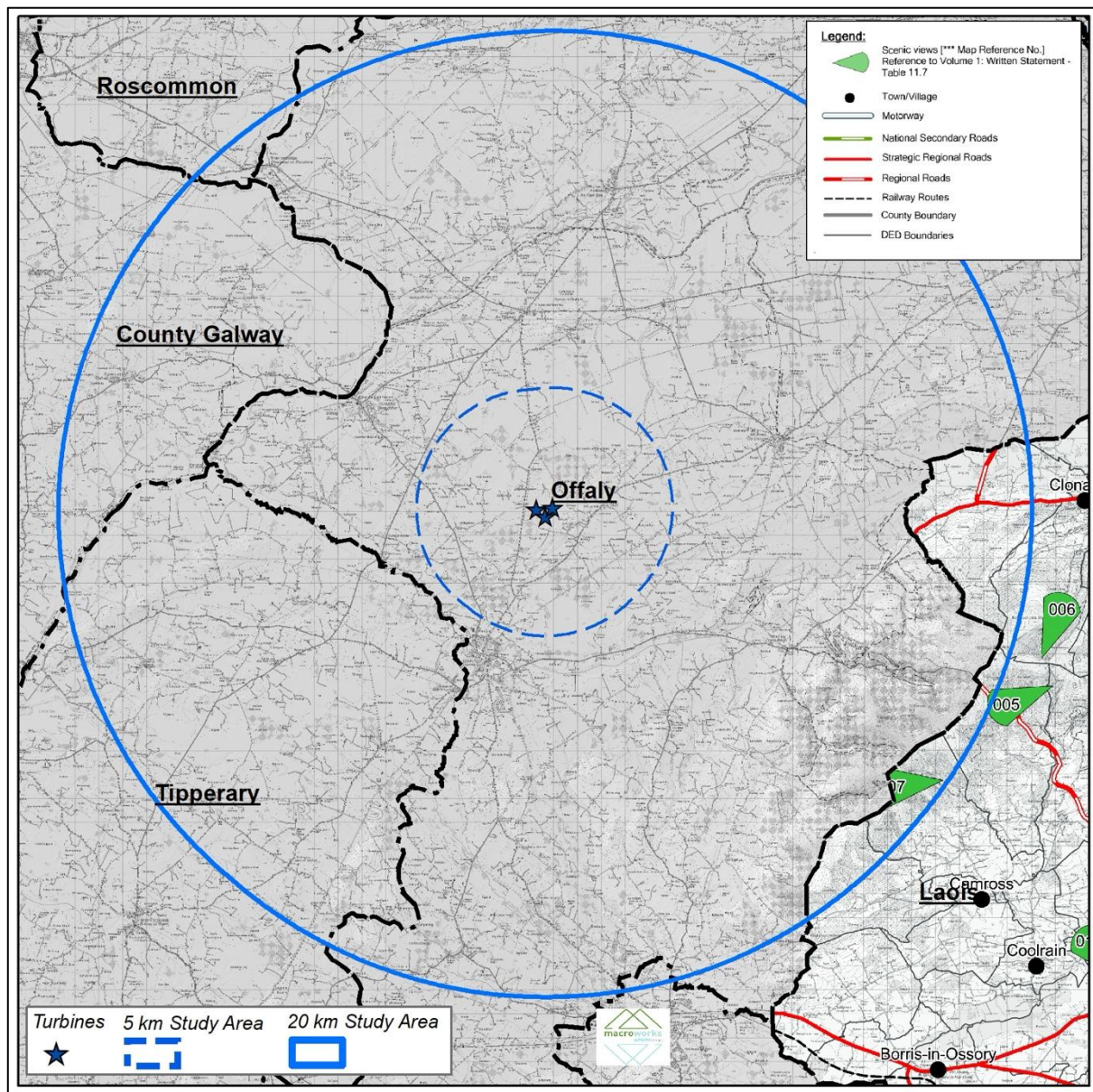


Figure 10.11: Laois Scenic Designations

Where scenic designations fall outside the ZTV pattern, they have been discounted on the basis that the turbines will not be visible and will not generate any visual impacts. Those that fall inside the ZTV pattern were investigated during fieldwork to determine whether actual views of the project might be afforded.

The critical analysis seeks to maintain a proportionate focus on the identification of significant effects, and as such a number of those that fall within the ZTV pattern have been discounted. The rationale varies, but includes:-

- locations where there is limited potential for any visibility as a result of intervening screening elements;
- locations where the potential for effects to be significant would be minimal as a result of the turbines being seen at long distances, or where views are more strongly influenced by foreground turbines;
- the primary aspect of the view in terms of its relevance to the scenic designation, orientates away from the project; and,
- where visibility may occur and the location is considered helpful in

understanding effects from parts of the landscape, a VRP has been selected for use in assessing visual effects.

ID	Description	Relevance	VRP Ref
Offaly County Development Plan 2021-2027			
2	From: Road No. L-08003 in the Slieve Bloom Mountains, To: Slieve Bloom Mountains, River Shannon northwards over lowlands	Yes, Relevant – Elevated views oriented in the direction of the site. Representative view has been selected.	VP23
3	From: Pilgrims Road (Road No. L-07013) To: Clonmacnoise and River Shannon, Eskers, Mongan Bog and Finlough.	Yes, Relevant – Views oriented in the direction of the site. (One illustrative view has been chosen from this area to represent multiple elevated designated views)	VP1
4	From: Road No. R444 in the townlands of Clonmacnoise, Creevagh. To: River Shannon and bog lands	Yes, Relevant – Views oriented in the direction of the site. (One illustrative view has been chosen from this area to represent multiple elevated designated views)	VP1
5	From: N52 in the townlands of Heath, Bunaterin, Derrydolney, Ballywilliam, Curraghmore, Ballynacard, Bally na Curra. To: Slieve Bloom Mountains	Yes, Relevant – Scenic view oriented away from the project, however due to proximity, a representative view has been selected.	VP11
6	From: R356 and Road No. L-07014 in the townlands of Cushcallow, Park, Mullaghakeeraun and Curralahan. To: River Shannon and bog lands	Not Relevant – Scenic view oriented away from the project.	-
10	From: Road No. L-03004 in the townlands of Skehannagh, Killagally Glebe, Ballyclare. To: Southwards towards Slieve Bloom Mountains	Yes, Relevant – Views oriented in the direction of the site.	VP3
11	From: Regional Road R357 in the townlands of Lumcloon, Bun, Rin, Leabeg and Leamore. To: Southwards toward Slieve Bloom Mountains	Yes, Relevant – Views oriented in the direction of the site.	VP4
12	From: Road No. L-07009 in the townland of Stonestown. To: Over bog lands and Slieve Bloom Mountains	Yes, Relevant – Views oriented in the direction of the site.	VP5
13	From: Road No. L-03012 in the townlands of Glaster, Ballynasrah, Newtown, Kilmochohna. To: Over Little Brosna and Callows	Not Relevant - Scenic view oriented in the opposite direction to the proposed project and partially screened on ZTV.	-
14	From: R440 in the townlands of Kyle, Cloghanmore, Streamstown, Ballinree, Killaun. To: Towards Slieve Bloom Mountains	Yes, Relevant – Scenic view oriented away from the project, however due to proximity and presence in the periphery of the view, representative view has been selected (representative of length of R440)	VP22
15	From: Road No. L-04006 in the townland of Knock. Slieve Bloom Mountains, Leap Castle	Not Relevant - Scenic view oriented in the opposite direction to the project and outside of ZTV. Leap Castle VP selected in close proximity.	VP25

16	From: Road No. L-04025 in the townlands of Clonee, Cumber Lower. To: Westward over farmland	<u>Yes, Relevant</u> – Views oriented in the direction of the site.	VP26
17	From: Road No. L-06034 in the townlands of Knockhill and Drinagh. To: Towards North East and North West over lowlands	<u>Not Relevant</u> - Scenic views feature a high degree of mature vegetation occurs in the direction of the site. Alternative location chosen in close proximity	VP12
18	From: Road No. L-08008 in the townlands of Grange, Belhill, Longford Big and Church Land. To: Views towards Seir Keiran Monastic Site	<u>Yes, Relevant</u> – Views oriented in the direction of the site.	VP26
Tipperary County Development Plan 2022 - 2028			
52	South on the R489 east of Lorrha	<u>Yes, Relevant</u> – Views oriented in the direction of the site. (Illustrative views have been chosen from this area to represent multiple elevated designated views)	VP17 & VP18
Galway County Development Plan 2022-2028			
51	From: Meelick Quay picnic and parking area To: The focus of this view is the River Shannon and the Incherky in the background. The old battery (covered in trees) is an important feature of this view.	<u>Yes, Relevant</u> – Views afforded in the direction of the site	VP7
52	From: the middle of the Banagher bridge To: The focus of this view is the Shannon River, Banagher Park and the Castle ruins.	<u>Not Relevant</u> - Scenic view oriented in the opposite direction to the project.	-
Laois County Development Plan 2021-2027			
7	From: Road No. L10317 in the Slieve Bloom Mountains To: Slieve Bloom Mountains, Killeen River	<u>Not Relevant</u> – Viewpoint located outside of ZTV	-
Roscommon County Development Plan 2022-2028			
25	From: Western end of L76055 To: West/Southwest over River Suck	<u>Not Relevant</u> – Scenic view oriented in the opposite direction to the project.	-

Table 10.6: Rationale for Selection of VRPs from Scenic Designations

10.3.3.3 Identification of Viewshed Reference Points as a Basis for Assessment

The results of the ZTV analysis provide a basis for the selection of VRPs, which are the locations used to study the landscape and visual impact of the project in detail. It is not warranted to include every location that provides a view of the project as this would result in an unwieldy report and make it extremely difficult to draw out the key impacts arising from the project. Instead, a variety of receptor locations were selected that are likely to provide views of the project from different distances, different angles and different contexts. The visual effect of a project is assessed using up to 6 no. categories of receptor type as listed below:-

- Key Views (from features of national or international importance);

- Designated Scenic Routes and Views;
- Local Community views;
- Centres of Population;
- Major Routes; and,
- Amenity and heritage features.

Key Views

These VRPs are at features or locations that are significant at the national or even international level, typically in terms of heritage, recreation or tourism. They are locations that attract a significant number of viewers who are likely to be in a reflective or recreational frame of mind, possibly increasing their appreciation of the landscape around them. The location of this receptor type is usually quite specific.

Designated Scenic Routes and Views

Due to their identification in a CDP, this type of VRP location represents a general policy consensus on locations of high scenic value within the study area. These are commonly elevated, long-distance, panoramic views and may or may not be mapped from precise locations. They are more likely to be experienced by static viewers who seek out or stop to take in such vistas.

Local Community Views

This type of VRP represents those people who live and/or work in the locality of the project, usually within a 5km radius of the project site. Although the VRPs are generally located on local classed roads, they also represent similar views that may be available from adjacent houses. The precise location of this VRP type is not critical; however, clear elevated views are preferred, particularly when closely associated with a cluster of houses and representing their primary views. Coverage of a range of viewing angles using several VRPs is necessary to sample the spectrum of views that would be available from surrounding dwellings.

Centres of Population

VRPs are selected at centres of population primarily due to the number of viewers that are likely to experience that view. The relevance of the settlement is based on the significance of its size in terms of the study area and/or its proximity to the project site. The VRP may be selected from any location within the public domain that provides a clear view either within the settlement or in close proximity to it.

Major Routes

These include national and regional roads and rail lines and are relevant VRP locations due to the number of viewers potentially impacted by a project. The precise location of this category of VRP is not critical and might be chosen anywhere along the route that provides clear views towards the site, but with a preference towards close and/or elevated views. Major routes typically provide views experienced whilst in motion and these may be fleeting and intermittent depending on screening by intervening vegetation or buildings.

Tourism, Recreational and Heritage Features

These views are often one and the same given that heritage locations can be

important tourist and visitor destinations and amenity areas or walking routes are commonly designed to incorporate heritage features. Such locations or routes tend to be sensitive to development within the landscape as viewers are likely to be in a receptive frame of mind with respect to the landscape around them. The sensitivity of this type of visual receptor is strongly related to the number of visitors they might attract and, in the case of heritage features, whether these are discerning experts or lay tourists. Sensitivity is also heavily influenced by the experience of the viewer at a heritage site as distinct from simply the view of it. This is a complex phenomenon that is likely to be different for every site. Experiential considerations might relate to the sequential approach to a castle from the car park or the view from a hilltop monument reached after a demanding climb. It might also relate to the influence of contemporary features within a key view and whether these detract from a sense of past times. It must also be noted that the sensitivity rating attributed to a heritage feature for the purposes of a landscape and visual assessment is not synonymous with its cultural or heritage importance.

As previously discussed, the study area has been extended to consider the potential visibility of the project from Clonmacnoise. As such, the representative viewpoint for this receptor is located marginally outside of the 20km study area (20.6km to the northwest of the nearest turbine).

The VRPs selected are set out in **Table 10.7** and their location illustrated **Figure 10.12**. All locations have been selected based on relevant guidance and best practice.

VRP	Location	Distance to nearest turbine	Representative of	Direction of view
1	Clonmacnoise	20.6km (T10)	KV, AH, DSV	SE
2	Shannonbridge	18.7 km (T10)	DSV	SE
3	Moyclare	12.6 km (T11)	DSV	S
4	Lough Boora	11.5 km (T11)	DSV	SW
5	Stonestown	7.4 km (T11)	DSV	S
6	Taylor's Cross	5.7 km (T10)	MR	SE
7	Meelick Quay	13.5 km (T10)	DSV, AH	E
8	L1092 at Whigsborough	850m (T11)	LCV	S
9	L1092 near Whigsborough House	1.7 km (T11)	AH, LCV	SW
10	N62 at Galros Cross Roads	643m (T10)	MR, LCV	S
11	Fivealley	2.0 km (T11)	MR, LCV, DSV	W
12	Local Road at Knockhill and Drinagh	11.8 km (T11)	DSV	W
13	N52 at Shanacloon	1.5 km (T11)	MR, LCV	W
14	R438 at Deerpark	6.3 km (T10)	MR	E
15	Local Road at Birr Golf Club	2.9 km (T10)	LCV	N
16	N62 at Cooleeny	2.2 km (T9)	MR, LCV	N
17	R489 at Lisinsky	18.2 km (T10)	DSV	NE
18	R489 at Pike	11.8 km (T10)	DSV	NE
19	R439 near Tullynisk House	4.5 km (T9)	AH, MR, LCV	NE
20	N52 north of Birr	5.4 km (T9)	CP, MR	N/NE
21	'The Leviathan' telescope within Birr Castle and Demesne	6.3 km (T9)	KV, AH	N/NE
22	R440 at Ballygowan	6.7 km (T9)	DSV	NW
23	R440 at Slieve Blooms	19 km (T11)	KV, DSV	W/NW
24	N62 at Rathbeg Lane	11.3 km (T9)	MR	N
25	Local Road at Leap Castle	13.9 km (T9)	AH	N/NW
26	Local Road at Clonlee	12.1 km (T9)	DSV	NW
27	Westgate, Birr	7 km (T9)	CP	N

Table 10.7: Outline description of selected Viewshed Reference Points

*Key Views (KV) / Designated Scenic Routes and Views (DSR/DSV) / Local Community views (LCV) / Centres of Population (CP) / Major Routes (MR) / Amenity and heritage features (AH)

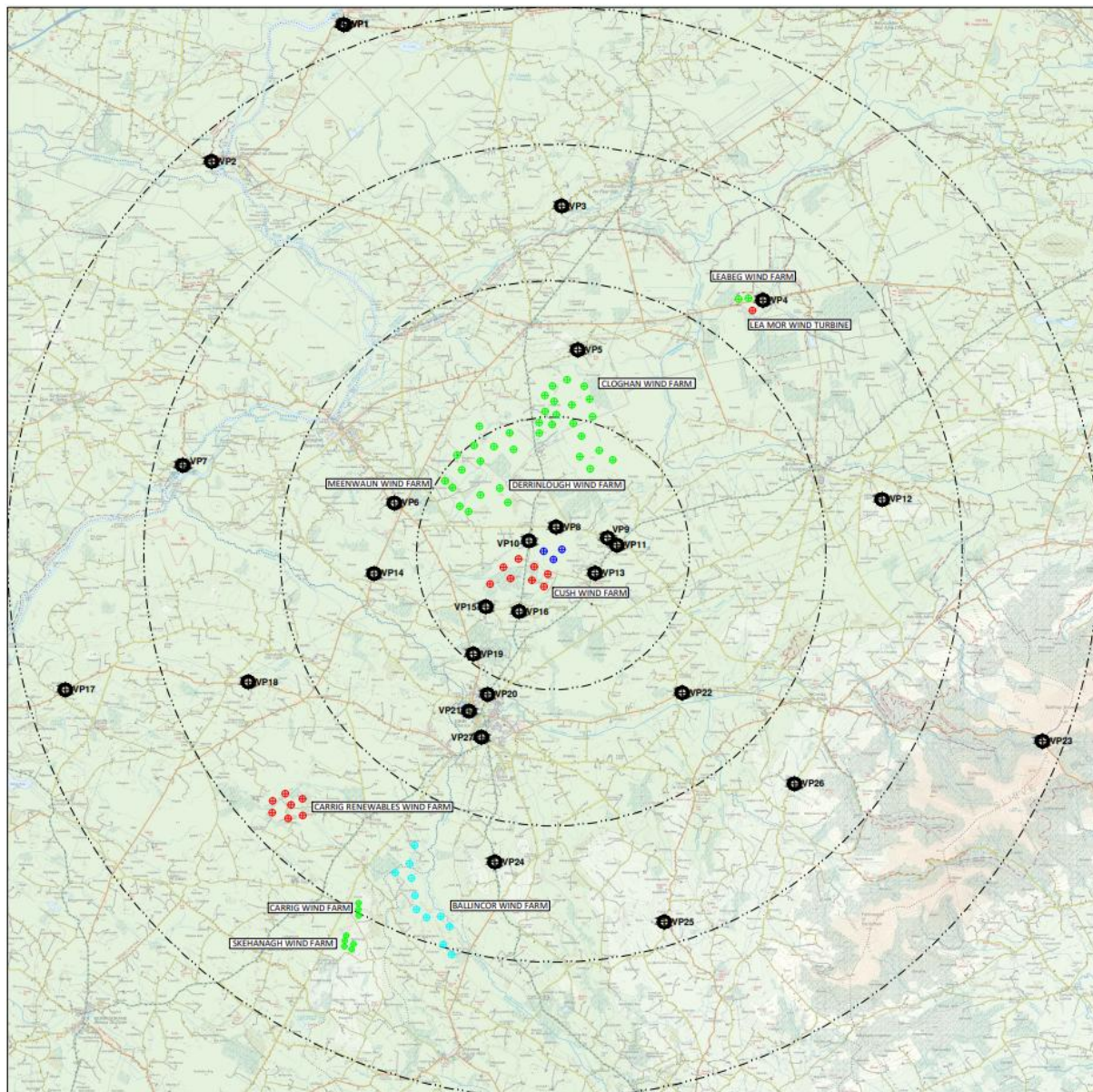


Figure 10.12: Map showing selected VRPs within the Study Area (Refer to Figure 1 of Annex 10.2 for full version)

10.3.3.4 Cumulative Baseline

There are 10 no. other existing, permitted or proposed wind farm developments within the study area. The name, relative distance and number of turbines of these are included at **Table 10.8**, below, and shown on Figure 10.12, above:

Wind Farm	Number of turbines	Distance to nearest turbine	Status
Cush Wind Farm Phase I	8	500m (T9)	Permitted ⁷
Carrig Renewables Wind Farm	7	12.5 km (T9)	Permitted
Derrinlough Wind Farm	21	2.2km (T10)	Existing
Cloghan Wind Farm	9	4.3 km (T11)	Existing
Meenwaun Wind Farm	4	3km (T10)	Existing
Leabeg Wind Farm	2	11.2 km (T11)	Existing
Skehanagh Wind Farm	5	15.7 km (T9)	Existing
Carrig Wind Farm	3	14.4 km (T9)	Existing
Ballincor	11	11.6 km (T9)	Proposed
Lea Mor Turbine	1	11.3km (T11)	Permitted

Table 10.8: Cumulative Baseline

Of the total number of cumulative turbines, the densest concentration are the existing developments of Meenwaun, Cloghan, and Derrinlough, to the north of the proposed project. Cush Wind Farm Phase I is located immediately southwest of the site. Along the rolling landform to the south of the study area, the smaller developments of Carrig & Skehanagh are both existing at 14-15km from the site, whilst Carrig Renewables Wind Farm is permitted, and Ballincor Wind Farm is proposed. The smaller Leabeg Wind Farm and permitted Lea Mor Turbine are located to the north. Projects that are known to be permitted and proposed, but are not present in the existing baseline, are addressed in greater detail in the cumulative section.

10.4 DESCRIPTION OF LIKELY EFFECTS

Based on the assessment criteria employed herein, potential significant effects are considered most likely to occur in instances where highly sensitive landscape and visual receptors coincide with high magnitude landscape and visual impacts. From previous extensive experience of this type of project in a modified rural setting influenced by other landscape types such as transitional foothills and river plain landscape contexts, it is considered that potentially significant landscape and visual effects have the potential to occur in the following ways:

Landscape Effects

- a) Irreversible physical effects on sensitive landscape features,
- b) Disruption of sensitive land cover and/or land use patterns,
- c) Substantial and incongruous change to areas of sensitive landscape character,

Visual Effects

- a) A sense of spatial dominance as seen from highly sensitive receptor locations. This is most likely to occur within 3 km of the proposed wind farm site.
- b) Visual clutter and ambiguity as seen from highly sensitive receptor locations. This can occur at any distance but tends to occur beyond 2-3km as turbines become stacked in perspective and a more two-dimensional layout is

⁷ Currently subject to a Section 146B Alteration Request (to alter the permitted turbine parameter range) to An Coimisiún Pleanála: ACP-324405-26.

perceived.

c) A combination of both of the above effects.

Baseline studies and early-stage assessments specific to the proposed project indicate that some of the most susceptible landscape receptors are located within the wider study area associated with the River Shannon, Eskers and selected bog areas such as Lough Boora and their immediate environs. These areas present a much stronger sense of visual amenity, heritage values, tranquillity and naturalness. Southeast of the lowland context of the northern and western study area, the terrain rises towards a more dynamic upland rolling landscape of the Slieve Blooms, with a much stronger sense of distinctiveness than the lands within the central study area.

As with the landscape receptors, the most sensitive visual receptors also tend to be associated with parts of the wider study area. Nonetheless, there are some localised receptors within the central study area, such as heritage structures of Whigsborough and Tullynisk, and smaller esker landforms, that are localised receptors which are more sensitive to change. Outside of the central study area, the most sensitive visual receptors are often associated with the combined centre of population and cluster of heritage and amenity features at Birr, the river and upland landscapes, with numerous scenic views and routes located in the environs of the Shannon and Slieve Blooms, whilst several heritage and amenity features are also situated along the Esker and Grand Canal linear features of the northern study area. Clonmacnoise in particular is a highly sensitive receptor, which, while located marginally outside of the study area, is included in the assessment due to its importance.

10.4.1 DO-NOTHING SCENARIO

In advance of identifying the likely landscape and visual effects of the project, it is appropriate to assess the changes that are likely to occur in the landscape over time in its absence. From a landscape and visual perspective, there are many political, economic, social and environmental factors that may influence the baseline landscape and visual environment in the longer term, and accurately predicting how these may individually, or in combination, influence the baseline landscape and visual environment is problematic.

In terms of wind energy development, the project site forms part of a wider area of landscape that is considered to be 'Open to Consideration' for wind energy development. The landscape's capacity to accommodate wind energy development is also reflected in the existing turbines to the north of the proposed project (Meenwaun, Derrinlough, Cloghan Wind Farm) and consented projects (Cush Wind Farm Phase I) present throughout the study area. Wind turbines are therefore considered to form part of the long-term character of this landscape.

The main influences on the future landscape and visual environment are considered to pertain to the impacts of climate change and the character of vegetation in the landscape.

Parts of this landscape play host to blocks of woodland, riparian vegetation and plantation forestry, as well as belts of vegetation associated with agricultural use of the landscape. In addition to the cycle of felling associated with forestry activities, change will relate to the large tracts of peatland and cutaway peatland, which will evolve over time, with pockets of natural revegetation generating a more vegetated landscape.

Climate change, together with the natural ongoing maturation of vegetation, is likely to influence vegetation cover whether as a result of biological pests and pathogens, or rainfall patterns; albeit the lack of certainty means that identifying likely changes is problematic. Changes to agricultural uses of land throughout the landscape may occur over time, subject to a variety of external factors. All change in this regard is likely to be localised in its influence and would be consistent with this type of landscape change across Ireland, rather than being specific to this locality.

Other development pressures are difficult to accurately predict and are subject to a variety of external factors. The focus of urban pressure is likely to relate to larger built-up areas; and whilst domestic scale change is likely to occur throughout the landscape, this is not likely to significantly alter the character of the wider landscape. Change of this nature is ultimately controlled through the planning process and it is assumed that it will progress with regard to sensitivities in the wider landscape and visual context.

In this instance, it is considered that the receiving landscape and visual baseline would remain in the same or similar condition as it is currently, with the exception of the additional consented Cush turbines.

10.4.2 LANDSCAPE SENSITIVITY

Landscape value and sensitivity are considered in relation to a number of factors that accord with GLVIA3. These are discussed in relation to the central and wider study area.

10.4.2.1 Central Study Area

The site and areas of the north-western and south-eastern central study area fall within the 'Low Sensitivity' Landscape classification. The most common landscape classification within the study area is 'Moderate Sensitivity', which traces around the areas of Low sensitivity to overlay much of the western, southern and eastern study area. There are smaller areas of 'High Sensitivity' within the central study area, the nearest of which traces the esker landform to the east of the site and expands to overlay larger areas to the north and southern periphery of the central study area.

The site and majority of the central study area closely resemble the described character of Low and Moderate sensitivity classification, being a flat and undulating agricultural and mixed peatland rural landscape. There is value placed on both the hedgerow and treeline networks of the agricultural landscapes, as well as the cutaway and revegetating bog areas. Higher sensitivity landscape elements within the central study area include the Esker landform running southwest/northeast, and wooded areas at Tullynisk and Whigsborough. The landscape is informed by the existing turbines to the north of the proposed project, as well as transmission infrastructure and extensive road networks. These elements combine to generate a varied anthropogenic character.

The Offaly CDP places the proposed project within the 'Areas Open for Consideration', due to low housing densities, no conflict with designated sites, and the ability of the landscape to absorb wind energy developments.

Whilst the landscape within the central study area is not noted for any specific scenic value, due to the flat to rolling landform, it forms the backdrop and wider context for more dramatic landscape features such as the Shannon River and Slieve Bloom Mountains, linear features of the Grand Canal and Esker Riada, and heritage sites

such as Clonmacnoise and Birr. There is some geological value associated with the Kilcormac Esker, which is located to the east of the proposed project, but in this is secondary to the more notable features of the wider study area. The recreational value of the wider landscape is recognised by the long-distance recreational routes that pass through the central study area.

The landscape of the central study area is considered to be a robust, modified, working landscape that is extensively influenced by typical productive rural landscape activities, land uses, and the increasing presence of wind energy. Whilst this landcover and the presence of waterbodies informs a pleasant rural aesthetic, and there are parts of the study area that exhibit a greater degree of scenic value, landscape values reflect the longstanding human interaction with this landscape over time rather than being explicitly informed by naturalistic qualities and values.

On balance of these factors and with regard to the landscape sensitivity table (refer to **Table 10.1** above), the central study area is deemed to have a '**Medium-low**' landscape sensitivity.

10.4.2.2 Wider Study Area

Many of the points raised in relation to the central study area are considered to remain relevant. The landscape is informed by a working character influenced by a blend of peatlands, conifer forestry and agriculture. With regard to the sensitivity classification of the Offaly CDP, the most sensitive features are the Shannon River to the west, Lough Boora area to the north, and Slieve Bloom Mountains to the east. Anthropogenic influences are prevalent throughout the wider study area, most notably with the network of transport corridors and existing wind energy development. Settlements, together with linear clusters of residential development, contribute to a generally well settled landscape.

The wider study area contains large areas of cutaway peatland, set within the dominant agricultural land use. There are larger areas of 'Low' sensitivity landscape classification over the northern areas of Offaly than in the south. In the Tipperary CDP, the nearest sections of Tipperary in the southwestern study area are the Borrisokane Lowlands Landscape Character Area, classified as Class 2 – Transitional Sensitivity. County Galway, to the northwest of the study area, is rated higher sensitivity along the Shannon (Special Sensitivity) and Low sensitivity across the wider lowlands extending to the west of the study area. Similarly, the area of Laois to the east of the study area is described as highly sensitive over the upland character of the Slieve Blooms.

The presence and overlay of other designations and heritage features follow similar patterns, concentrated around the Shannon and Slieve Blooms. Specifically, Clonmacnoise along the Shannon is recognized for both its habitat/recreational/scenic value and their nationally significant archaeological importance. The elevated landscape and prominent topographical features of the Slieve Blooms, together with the expansive views they afford, contribute to comparatively high scenic value, with these landforms being important and visually susceptible.

Parts of the wider landscape are considered to have a **High-Medium** landscape sensitivity as a result of their natural attributes and their scenic, recreational and heritage values. The mountainous landscape to the east and the cultural landscapes associated with the Eskers and Shannon are considered to have a **High** landscape sensitivity. However, on balance of the reasons outlined above, the landscape sensitivity of the wider study area is deemed to retain an underlying **Medium-Low**

sensitivity.

10.4.3 LANDSCAPE EFFECTS

10.4.3.1 Construction Phase

It is assessed that the project will have a modest physical impact on the landscape within the project site, with land disturbance being localised and relatively limited.

Disturbance to existing forestry will be relatively limited, and of little consequence on the character of the wider area. Any vegetation loss will not be readily discernible from publicly accessible locations beyond the immediate locality and would be seen in the context of existing forestry operations as a land use that periodically undergoes change as a result of felling and replanting activities.

Whilst there will be changes to topography through excavation, stockpiling, the construction of crane hardstands and other project infrastructure, these changes will be localised to the immediate vicinity of the project infrastructure. The finalised internal access track layout has been designed to avoid environmental constraints and follow the natural contours of the land wherever possible. Excavations will tie into existing ground levels and will be the minimum required for efficient working. Temporary excavations, stockpiles and working areas will be re-graded and reinstated following completion of construction and allowed to revegetate appropriately in accordance with advice from the Ecological Clerk of Works..

There will be an intensity of construction phase activity associated with the access tracks and crane hardstands consisting of the movement of heavy machinery and materials; however, this will be short-term in duration.

All internal wind farm cabling will be located underground and will be installed within/under access tracks or adjacent to them without the need for trenching through open ground. Indeed, the land cover of the project site will only be interrupted as necessary to build the structures of the project and to provide access. Impacts from land disturbance and vegetation loss at the site are assessed to be modest in the context of this landscape setting and is influenced by an array of working rural land uses.

Whilst there will be some permanent construction phase effects on the physical landscape, such as vegetation removal and grading works for access tracks these are localised in extent. Excepting some residually useful access tracks which may be retained into the operational phase, all other development features will be removed upon decommissioning and the land reinstated/restored. As such, the construction phase landscape effects of the project are substantially reversible.

During construction, the installation of the proposed turbines and the associated activity and movement associated with tall lifting plant will introduce large scale vertical features into views. Construction-related activity will be short-term in nature (in accordance with the EPA definition of impact duration) and will cease once the project becomes fully operational. Whilst these activities will generate temporarily heightened visual effects, their influence on perceived landscape character is assessed to be modest in the context of movement that occurs throughout this landscape along road networks, and that associated with an operational wind farm. As such, a greater proportional focus is placed on the long-term effects of the operation of the wind turbines on landscape character.

However, it is recognised that site activity will be at its greatest during the construction

phase due to the operation of machinery on-site and the movement of vehicles to and from the site; and that the activities and works taking place at ground level are likely to impact landscape character at a localised level. Works associated with the turbine component haul route, infrastructure foundations, underground cable installation, groundworks (including the excavation, stockpiling, deposition, and reinstatement of site-won material), and landscape works will generate activity and disturbance that will influence scenic/recreational values of roads and contrast the underlying agrarian characteristics of the landscape.

These works are short term in nature (albeit acknowledging that reinstated landscape works will take time to fully mature) and localised in extent. The effects will cease as soon as the turbines have been installed and become operational.

The magnitude of landscape impact in relation to these activities during the construction phase is assessed to be no greater than High-medium which, when combined with a Medium-low sensitivity, results in a **Moderate** significance of landscape effect.

The construction phase landscape effects are, therefore, assessed to be **not significant**.

10.4.3.2 Operation Phase

For most wind energy developments, the greatest potential for landscape impacts to occur is as a result of the change in character of the immediate area due to the introduction of tall structures with moving components. Thus, wind turbines that may not have been a characteristic feature of the area become a new defining element of that landscape character. In this instance, wind turbines are present in both the immediate and wider context, the largest existing area of wind energy development is the combined area of Meenwaun, Cloghan and Derrinlough Wind Farms. The remainder of Cloghan and Derrinlough turbines are located to the north of the proposed project. Other, smaller existing developments are scattered over the north and south of the study area. Those to the north of the site are within a similar landscape context and exhibit the same relationship between the bog landscapes and wind energy potential as is applied at the project site. The effect, therefore, is one of intensification and extension of an established land use in this landscape and not the introduction of a new and unfamiliar feature.

In terms of scale and function, the proposed wind farm is well assimilated within the context of the Central Study Area. This is due to the broad scale of the landform and landscape elements, with low intensity rural land use patterns, to the north of the site, which varies south of the site, closer to the periphery of Birr. The impact on the central study area to the south is mitigated by the physical division provided by the eskers which skirt the central study area to the south and east. These attributes prevent the height and extent of the proposed wind farm causing the type of scale conflict that can occur in more intricate landscape areas.

Although the project represents an increased scale and intensity of built development than currently exists within and around the site, it will not detract significantly from its diverse productive rural character to the north within which wind turbines are already a feature of the landscape character and is separated from the southern study area by landform and changes in land use patterns. In summary, there will be physical impacts on the land cover of the site as a result of the project during the operation

phase, but these will be relatively minor in the context of this productive rural landscape that comprises existing wind energy developments and extensive areas of cutaway bog and conifer forestry. The scale of the project will be well assimilated within its landscape context without undue conflicts of scale with underlying landform and land use patterns.

The influence of the project on landscape character will inherently be most notable at the immediate landscape level where their scale and form are likely to generate considerable change to the character of the landscape. However, the degree to which the wind turbines will influence landscape character is moderated by the scale of the landscape and the relatively modest spatial extent occupied by the project.

For these reasons the magnitude of the landscape impact is deemed to be High-medium within the site and its immediate environs (c.1km) reducing to Medium for the remainder of the central Study Area. Beyond 5km from the site, the magnitude of landscape impact is deemed to reduce to Low and Negligible at increasing distances as the wind farm becomes a proportionately smaller and integrated component of the overall landscape fabric.

Whilst the project is likely to influence the scenic value of parts of the landscape as a result of turbines appearing along a planar landscape, with increasing distance the magnitude of change will reduce as the project becomes an increasingly small and indistinct component of a wider landscape that is influenced by a variety of land uses.

Based on a Medium-low sensitivity judgement and a High-medium magnitude of operational stage landscape impact at the proposed wind farm site and its immediate context (<1km from the turbines), the significance of effect is considered to be **Substantial-moderate / Negative / Long-term** within and immediately surrounding the proposed wind farm site, reducing to **Moderate / Negative / Long-term** within the central study area (c. 1-5km from the proposed turbines). Thereafter within the wider study area (c. 5-20km from the proposed turbines), significance will reduce to **Slight** and **Imperceptible** at increasing distances as the proposed project becomes a progressively smaller component of the wider landscape fabric even in the context of higher sensitivity landscape units / features.

The operation phase landscape effects are, therefore, assessed to be **not significant**.

10.4.3.3 Decommissioning Phase

The decommissioning phase will give rise to effects broadly similar in nature to those experienced during the construction phase, including the movement of heavy machinery and the transport of large turbine components from the proposed wind farm site. These effects will be short-term and will progressively reduce as the turbines and associated infrastructure are dismantled and removed. Localised disturbance or loss of roadside and trackside vegetation which has established during the operational phase may also occur; however, affected areas will be reinstated following completion of the decommissioning works.

Decommissioning will principally involve the dismantling and removal of the wind turbines and associated above-ground infrastructure. Turbine foundations will be grubbed up to a depth of approximately 1m below ground level, with excavated areas backfilled and allowed to revegetate naturally. Crane hardstands and access tracks will generally be removed, with aggregates and geotextile taken from the site and the affected areas re-profiled and allowed to revegetate; however, access

tracks may be retained where required for continued agricultural or land management purposes. The proposed electrical switch room building will also be demolished and removed. The underground electricity line will be decommissioned through removal of the electrical cabling, while the buried ducting will remain in situ in order to avoid unnecessary further excavation and ground disturbance.

Decommissioning measures are set out in the Planning-Stage CEMP at **Annex 3.4**, with a detailed Decommissioning Plan to be incorporated into the full CEMP prepared at construction stage.

Overall, the magnitude of decommissioning stage landscape impacts within the site and its immediately surrounding context is deemed to be High-medium and of a Negative quality, but of a Short-term duration. Beyond 5 km from the proposed wind farm site, the magnitude of landscape impact is deemed to reduce to Low and Negligible at increasing distances, as the decommissioning-related activities become a proportionately smaller component of the overall landscape fabric. When combined with a **Medium-low** sensitivity, this results in a **Moderate** significance of landscape effect, reducing with distance.

The decommissioning phase landscape effects are, therefore, assessed to be **not significant**.

10.4.4 VISUAL EFFECTS

In the interests of brevity and so that this chapter remains focused on the outcome of the visual assessment (rather than a full documentation of it), the visual impact assessment at each of the selected VRPs is enclosed, separately, at **Annex 10.1**. This section should be read in conjunction with the viewpoint assessment and the associated photomontage set at **Annex 10.2** and **Annex 10.3** (comparative). A summary table is provided below, at **Table 10.9**, which collates the assessment of visual impacts and a discussion of the results is provided thereafter.

10.4.4.1 Sensitivity of Visual Receptors

The landscape of the study area is heavily modified and, in many locations, there is a palpable sense of longstanding human intervention on the landscape. Much of the landscape has strong rural qualities and a pleasant agrarian aesthetic, as defined by its settled 'green' working character. However, it is noted that views from all parts of the study area are influenced by various anthropogenic features such as road infrastructure, agricultural farmland, urban settlements and peatland extraction.

In terms of visual receptor sensitivity, key differentials relate to the occupation of the visual receptor and whether views of the surrounding landscape are an inherent part of the experience. Static residential receptors, or those at scenic viewpoints, are considered inherently more susceptible to changes in views given the nature of their interest in the landscape and its importance to the experience of it. Conversely, visual receptors who experience views transiently when travelling through the landscape on major transport routes are considered less susceptible where road infrastructure and traffic volume draw from visual amenity. Similarly, receptors located in closer proximity to the project site are considered more susceptible to changes in views over those where views are experienced at a distance as a result of the relative importance of the local context on views.

Based on the site-specific factors outlined, and in accordance with the general visual

receptor sensitivity considerations contained in the methodology, visual receptor sensitivity judgments are discussed below in relation to visual receptor groups.

Key Views (KV)

Within the study area, VP1 has been selected to represent those visiting the notable Clonmacnoise site along the River Shannon and Esker Riada, VP21 to represent the heritage and amenity attraction of the Leviathan telescope at Birr Castle, and VP23 to represent the scenic and landscape designations of the Slieve Bloom Mountains. These features are of notable archaeological and cultural value and attract a significant visitor footfall. Given the importance of the landscape to views, visual receptors are assessed as having a **Very High** to **High-Medium** sensitivity.

Designated Scenic Routes and Views (DSR/DSV)

The relevant viewpoints are VP1-5, VP7, VP12, VP17, VP18, VP22, VP23, and VP26. A number of these are representative of a group of designated views, or the combination of scenic views and amenity routes. Two of these (VP1 and VP23) are addressed above. While many of these viewpoints also represent other receptor types, their primary relevance in this assessment lies in their scenic designation, as identified in the relevant CDPs.

Where the view relates to a location with a particularly valued aspect of amenity, such as a view over the River Shannon (VP2, VP7) visual receptors are considered to be of High-Medium sensitivity. In many other locations along designated scenic routes, views are consistent with other views that may be available over the rural working landscape and, whilst pleasant, visual receptors are assessed to be relatively robust and of no greater than **Medium** sensitivity, reducing to **Medium-low** where the view is shortened by vegetation, cluttered with other development and infrastructure, or has low viewer numbers.

Amenity & Heritage Features (AH)

The viewpoints selected to address amenity and heritage features are VP1, VP7, VP9, VP19, VP21, and VP25. Of these, VP1, VP7, and VP21 are included primarily as scenic designations or key views and have been addressed above. These are also the highest sensitivity viewpoints within this category. The three remaining are deemed Medium (VP9 & VP19) and Medium-low (VP25) and generally relate to smaller heritage features with lower visitor numbers or no formalised public access. The inclusion as heritage and amenity receptors relates to the contribution of these features to the wider setting, as well as the identification of historic structures within the County Development Plans,

Where the landscape plays an important part to the visual experience, such as in elevated, open, and remote parts of the landscape or where there are expansive views over the wider landscape, visual receptors are considered to be of **High-Medium** sensitivity. In other locations, visual receptors are considered to be of no greater than **Medium** sensitivity, reducing to **Medium-Low** where the landscape is not an important part of the visual or recreational experience.

Local Community Views (LCV)

The assessment of visual sensitivity for local community views focuses on the perspectives of individuals who live, work or travel within the study area. These people are most likely to experience changes in their visual amenity due to the proximity of

the turbines, their potential visibility from various directions or the turbines becoming a familiar part of their daily views. The relevant viewpoints within the study area include VP8-11, VP13, VP15, VP16, VP19.

The majority of the local community viewpoints are from the road network close to residential dwellings throughout the landscape from which the project will be visible. Whilst some of the viewpoint locations are also representative of other visual receptors (such as major routes or minor heritage receptors), visual sensitivity is typically ranges between **Medium-low** to **Medium**.

Centres of Population (CP)

The relevant viewpoints are VP20, VP21 and VP27, representing the population centre of Birr from various vantage points. Population centres are generally considered to have medium to low levels of visual receptor sensitivity because they are built-up environments where visual change is more common and less impactful. However, VP21 is also representative of Birr Castle, and VP27 features above-average amenity due to the broad view of various local landmarks.

VP20 was selected to represent visibility from northern and central Birr based on site visits, ZTV mapping and the photomontages submitted with the Cush Wind Farm Phase I planning application. The additional photomontages at Phase I viewpoints VP33–VP36, subsequently prepared and submitted during the processing of that application in response to a request from An Coimisiún Pleanála to address submissions received, identified this location as providing the clearest views towards the eastern extent of Cush Wind Farm Phase I and informed consideration of the potential visibility of the proposed project.

Together, VP20, VP21 and VP27 represent the varied visibility within Birr and its associated heritage settings. VP21 and VP27 are assessed as having **Very High** and **Medium** visual receptor sensitivity respectively. Considering its urban and road-corridor context, VP20 is assessed as having **Medium-low** sensitivity.

Major Routes (MR)

These include both national regional level roads and are relevant VP locations due to the number of viewers likely to be affected by the project. Major routes typically provide views that are experienced transiently whilst in motion, and these may be fleeting and intermittent depending on screening by intervening vegetation or buildings. The relevant viewpoints are VP6, VP10, VP11, VP13, VP14, VP16, VP19, VP20, VP24. Those located within the central study area (VP10, VP11, VP13, VP16, VP19) are addressed within Local Community Views, above. VP20 is addressed above due to the primary selection criteria being to represent the centre of population at Birr. The remaining viewpoints representative of Major Routes are VP6, VP14, and VP24, representing national and regional road corridors throughout the study area. Major Routes feature a high number of viewers, with some locations considered to have comparatively high amenity value. Visual sensitivity on Major Routes is assessed to be **Low** to **Medium** depending on the other receptors and amenity within the view.

10.4.4.2 Construction Phase

During construction, the most notable visual impacts will result from the installation of the wind turbines, with lifting plant introducing additional vertical features into views.

As per the construction programme, construction-related activity will be short-term in nature (in accordance with the EPA definition of effect duration) and will cease once the project becomes fully operational, albeit acknowledging that reinstated landscape works will take time to fully mature.

The visual impacts generated by the activity associated with the installation of the turbines are considered in the context of their short term nature, and a greater proportional focus is placed on the long term effects of their operation. However, for visual receptors within the central study area, this activity will be very visible from locations close to the turbines and reducing with distance as topography and vegetation preclude views of ground level activities. For visual receptors within the central study area, the magnitude of visual effect at the construction phase is assessed to be no greater than High-Medium. When combined with a Medium sensitivity (localised heritage receptors and those in the immediate locality), the level of visual effect is assessed to be no greater than **Substantial-moderate** in the immediate site surrounds.

For visual receptors in the wider study area, the activity associated with the installation of the turbines is unlikely to notably influence the visual amenity of any given view, given that this activity would be difficult to discern at distance. For visual receptors within the wider study area, the magnitude of visual effect during the construction phase is assessed to be no greater than **Low**. When combined with a **High** sensitivity (the most sensitive visual receptors), the level of visual effect, on balance, is assessed to be no greater than **Moderate-slight**.

In addition to the installation of the turbines, the construction phase will also see activities taking place at ground level associated with vegetation removal, new access tracks and other elements of the project. This short-term activity will not be visible from publicly accessible locations in the wider landscape given the successional layers of vegetation present and the influence of topography. Any visibility would be marginal in nature, with the exception of the nearest viewpoints along the N62, where the open nature of the receiving cutaway bog may allow views to the proposed site works.

Haul route accommodation works will occur at identified locations along the existing road network. The underground electricity line will be installed through private lands, with HDD used at public-road and river crossings. The temporary visual effects of these activities are assessed to be broadly consistent with typical road maintenance operations and not of an order that would give rise to any greater than a **Slight** level of visual effect which would be localised to the immediate vicinity of these works.

Construction work areas will be reinstated following completion of the works, including areas affected by works along the turbine component haul route.

Visual effects generated during the construction phase are assessed to be **not significant**.

10.4.4.3 Operation Phase

The level of visual effects is a function of visual receptor sensitivity and visual effect magnitude, determined through professional judgement, informed by the matrix in **Table 10.4**.

As stated previously, visual effects are discussed around visual receptor groups, based on the outcome of the visual assessment that has been undertaken for each of the 27 no. selected representative viewpoint locations. A summary table (**Table 10.9**)

collates the operational effects identified within this visual assessment, and a discussion is provided thereafter in relation to visual receptor groups.

VRP No.	Distance to nearest turbine	Visual Receptor Sensitivity	Magnitude of Visual Effect	Level of Effect *
1	20.6km (T10)	High	Low-negligible	Slight-imperceptible
2	18.7 km (T10)	High-medium	Low-negligible	Slight-imperceptible
3	12.6 km (T11)	Medium	Low-negligible	Slight-imperceptible
4	11.5 km (T11)	Medium-Low	Negligible	Imperceptible
5	7.4 km (T11)	Medium-Low	Low	Slight
6	5.7 km (T10)	Medium-Low	Low	Slight
7	13.5 km (T10)	High-Medium	Low-negligible	Slight-imperceptible
8	850m (T11)	Medium-low	High-Medium	Substantial-moderate
9	1.7 km (T11)	Medium	Medium	Moderate
10	643m (T10)	Medium-Low	High-medium	Substantial-moderate
11	2.0 km (T11)	Medium-Low	Low	Slight
12	11.8 km (T11)	Medium	Low-negligible	Slight-imperceptible
13	1.5 km (T11)	Medium-low	Medium-Low	Moderate
14	6.3 km (T10)	Medium-Low	Low	Slight
15	2.9 km (T10)	Medium-Low	Low	Slight
16	2.2 km (T9)	Medium-Low	Medium	Moderate
17	18.2 km (T10)	Medium-Low	Low-negligible	Slight-imperceptible
18	11.8 km (T10)	Medium-Low	Negligible	Imperceptible
19	4.5 km (T9)	Medium	Negligible	Imperceptible
20	5.4 km (T9)	Medium-low	Low-negligible	Slight-imperceptible
21	6.3 km (T9)	Very High	Negligible	Imperceptible
22	6.7 km (T9)	Medium-Low	Low	Slight
23	19 km (T11)	High-Medium	Low-negligible	Slight-imperceptible
24	11.3 km (T9)	Medium-Low	Low-negligible	Slight-imperceptible
25	13.9 km (T9)	Medium-Low	Low-Negligible	Slight-imperceptible
26	12.1 km (T9)	Medium	Low-Negligible	Slight-imperceptible
27	7 km (T9)	Medium	Low	Slight

Table 10.9: Summary of Visual Effect Assessment at VRP Locations

* All effects are assessed as long-term. Effects are negative except where expressly assessed as neutral in **Annex 10.1**.

Visual Effect Summary by Receptor Type

Key Views

In total, of the 27 no. viewpoints assessed, 3 no. (VP 1, VP21, VP23) were selected as being relevant to the consideration of visual effects in relation to Key Views.

These viewpoints were selected to represent those visiting Clonmacnoise and the Esker Riada, Birr Castle, and the designated view from the higher sensitivity landscapes of the Slieve Bloom Mountains.

The highest level of visual effect is assessed to be '**Slight-Imperceptible**' as

experienced from the elevated Slieve Blooms, and distant views from the R444 where it climbs the side of the esker landform, with both locations allowing long range views over the wider landscape.

At VP1, due to intervening screening, filtered views of the turbines would be partially visible, at over 20km, these would be difficult to discern and would have minimal bearing on views.

At VP21, the proposed project is entirely screened by intervening vegetation and the built form of Birr. Consideration has also been given to elevated views from the Music Room at Birr Castle, which were specifically identified as a concern by Offaly County Council during the processing of the Cush Wind Farm Phase I planning application. An additional photomontage at Phase I Viewpoint 37 was prepared and submitted in response to a request from An Coimisiún Pleanála to address submissions received on that application. This photomontage showed that the Phase I turbines were entirely screened from the Music Room. The proposed Phase II turbines are located at a greater distance and further east, outside the field of view available from the Music Room window, and are therefore not expected to be visible from this location.

At VP23, at over 19km distant, whilst visible (primarily under clear conditions), the turbines would occupy a small proportion of the overall view and would not have a notable effect on the visual composition of views, appearing as distant elements alongside existing wind turbines within a landscape that is extensively modified. As such, the level of visual effect is assessed to be '**Slight-Imperceptible**'.

The visual effects arising from the proposed project in relation to Key Views, are assessed as **Not Significant** in EIA terms.

Local Community Views

Of the 27 no. viewpoints assessed, 8 no. (VP8-11, VP13, VP15, VP16, VP19) were selected as being relevant to the assessment of visual effects in relation to Local Community Views. Local Community Views are considered to be those experienced by those people who live, work and move around the area within approximately 5km of the site (i.e. the central study area). Of these, VP9 and VP19 are assessed primarily in relation to the historic structures they are located in proximity to and addressed below.

Viewpoints VP8 and VP10 experience the most notable visual effects from any of the local community views (Substantial-moderate) where the project presents as a prominent feature at a distance of less than 1km. At both of these viewpoints are located within 1km of the wind turbines, where views are proximate and the scale of the turbines is perceived as being most prominent.

VP16 experiences Moderate significance of visual effect, due to the aesthetics of the proposed project and relationship with foreground land uses, at a distance of 2.2km, as does VP13, at a distance of 1.5km.

VP11 experiences a 'Slight' level of visual effect, which reflects the more partial and interrupted nature of views as a result of foreground topography and vegetation.

Finally, VP15 is located to the south of the site, near Birr Golf Club, with subtly elevated views allowing longer distance views to the site and background of existing wind turbines. The distance of 2.9km and clear offset from the viewer result in a Low magnitude of visual effect and Slight significance of visual effect.

As an inevitable consequence of development of tall structures within a flat to rolling central study area, the turbines will become one of the defining features in this local landscape context, although their layout ensures that they present in a manner that responds to its local landscape context and with a high degree of visual permeability so as not to generate any strong sense of enclosure or heavily obstruct views of the distant landscape where available. Overall, whilst the turbines will present at a considerable scale from some of the nearest local community receptors, they will not appear to be over-bearing from these local community views.

It should also be noted that the proposed turbine array is fully compliant with the minimum visual amenity 'setback' distance outlined in the 2006 WEDG's. With regards to the Draft WEDG's 2019, Viewpoint 10 is located within the 800m visual amenity offset identified by the 4x tip height minimum offset, and at closer proximity than the nearest identified residence, while VP8 is less than 100m outside of the 800m minimum offset. Together, these two viewpoints represent the characteristics of the proposed project at the nearest visual receptors.

Owing to principally to the proximity of the proposed project and the degree of perceived visual change, local community views understandably tend to have the highest likely visual effect significance of all receptors within the study area. However, the visual effects arising from the project in relation to Local Community Views, are assessed as **Not Significant** in EIA terms.

Designated Scenic Routes and Views

In total, of the 27 no. viewpoints assessed, 13 no. (VP1-5, VP7, VP11, VP12, VP17, VP18, VP22, VP23, and VP26) were selected as being relevant to the assessment of visual effects in relation to Designated Scenic Routes and Views. A number of these are representative of a group of designated views, or the combination of scenic views and amenity routes. Additionally, there is overlap between a number of other receptors (mainly Major Routes). Two of these (VP1 and VP23) are addressed above.

VP5 is located within the bog landscape surrounding the central study area, to the north of the largest group of permitted/existing wind energy development. This results in the impact from the project being related to potential cumulative effects from extending the depth of wind energy development into the distance. VP5 is rated Medium-low sensitivity and features Low magnitude of visual effects from the project, resulting in a **Slight** significance of visual effect.

VP22 is located within the rural landscape to the southeast of the proposed project, where the proposed project will present as some of the nearest turbines of the wider existing context. Combined with the Medium-low sensitivity, the Low magnitude of visual effects result in a **Slight** significance of visual effect.

The other designated locations within the assessment are rated between Slight-imperceptible (VP2, VP3, VP7, VP17, VP23, VP26), and Imperceptible (VP4, VP18).

VP12 (Medium sensitivity) is a more localised view, which is representative of an Offaly scenic view, as well as local community views. The combination of Medium sensitivity with Low-negligible magnitude of effect (due to clear views of the project across elevated rural views), results in **Slight-imperceptible** significance of effect, of a negative quality, and long-term duration.

Meelick Quay (VP7) is a designated scenic view in Co. Galway, as well as an amenity

and heritage attraction. This view is located along the banks of the Shannon and has a number of historic features in the surrounds, resulting in a High-medium sensitivity. The magnitude of effect is Low-negligible due to the screening between the viewer and the site; this results in a final significance of **Slight-imperceptible**.

VP2 is located within the higher sensitivity landscape context surrounding the Shannon Corridor, but is representative of the combined major route, local community, and adjacent scenic view. There are partial views featuring screening by vegetation, resulting in a Low-negligible magnitude of visual effect and **Slight-imperceptible** final significance.

VP3 is located directly on a designated view, but within a less sensitive landscape, and as such is rated Medium sensitivity, with a Low-negligible magnitude of effect as there are more direct views to the generally screened project (resulting in a **Slight-imperceptible** final significance).

VP17 and VP18 are both located along the R489, to cover off major route and local community receptors in combination with the Tipperary scenic designation. Both are rated medium-low sensitivity, while VP17 features Low-negligible magnitude of effect, effects at VP18 are Negligible, resulting in final significance of **Slight-imperceptible** at VP17, and **Imperceptible** significance of visual effect at VP18.

VP26 is located along the foothills of the Slieve Blooms, with extensive views over the surrounding rural landscape and mix of land uses, with a corresponding visual sensitivity of Medium. Due to distance and existing wind energy within the view, the magnitude of visual effect is deemed Low-negligible, resulting in a **Slight-imperceptible** significance of visual effect.

VP4 is located along the R357, within the context of Lough Boora Park, however the actual visibility along this section of road is limited, resulting in a Negligible magnitude of effect and **Imperceptible** significance of visual effect.

Views from the designated scenic routes and views are highly variable throughout the study area subject to the direction of travel, the primary aspect of amenity, and elevation; which has a notable bearing on the nature of the view, whether more localized and focused on the immediate landscape context or more expansive over the wider landscape. In the majority of locations where the wind turbines are visible, these views are already influenced by turbines at Derrinlough and Cloghan.

With distance, the turbines will become an increasingly small and distant component of the overall view, occupying a limited spatial extent. Whilst likely visible and noticeable from some locations, their influence on the overall character and composition and amenity value of the view diminishes, with other features and characteristics of the view prevailing in their influence.

The visual effects arising from the project in relation to designated scenic routes and views, are assessed as **Not Significant** in EIA terms.

Amenity and Heritage Features

In total, of the 27 no. viewpoints assessed, 6 no. (VP1, VP7, VP9, VP19, VP21, and VP25) were selected as being relevant to the assessment of visual effects in relation to amenity and heritage features. Of these, VP1, VP7, and VP21 are included primarily as scenic designations or key views and have been addressed above.

Of the remaining three viewpoints, VP9 and VP19 are located within the central study area and as such also represent views experienced by the local community. The closest of these is VP9, which is located 1.7km to the northeast of the proposed project and is representative of Whigsborough House and its setting, which is a pleasant but otherwise typical rural view from the north of the central study area, with Medium sensitivity. Due to the proximity of the proposed project, the magnitude of visual effect is deemed Medium, resulting in a Moderate significance of visual effect.

VP19 is highly screened by vegetation, at a viewpoint selected for a more open foreground than that of the gateway located to the south. Due to the number of viewers along the R439 and the visible heritage landscape features, the visual receptor sensitivity is deemed Medium, which combines with the Negligible magnitude of effect to result in a Imperceptible significance of visual effect.

Finally, due to distance and vegetative screening, VP25, Leap Castle experiences Low-negligible magnitude of visual effect. This combines with a Medium-low sensitivity to result in a Slight-imperceptible final significance.

As such, the visual effects arising from the project in relation to amenity and heritage features, are assessed as **Not Significant** in EIA terms.

Centres of Population

In total, of the 27 no. viewpoints assessed, 3 no. (VP20, VP21, VP27) were selected as being relevant to the consideration of visual effects in relation to Centres of Population. Within the study area, the key population centre is Birr, located to the south of the site. The nearest of these viewpoints is VP20, located to the north of Birr along the N52 Major Route. VP21 is located within Birr Demesne at the Leviathan Telescope and addressed in Key Views, above. The remaining viewpoint is located to the south of Birr, where views north also present the key landmarks and heritage structures visible over the intervening-built form and vegetation.

Of these, the highest sensitivity and magnitude of effect combine at VP27, which is a marginally elevated vantage point and allows clear views of the heritage structures of Birr Castle, St. Brendan's Church, and St Brendan's Church of Ireland, resulting in Medium visual sensitivity. The proposed project is set away from the viewer and heritage features but will be visible along the horizon at a distance of 7km. The magnitude of visual effect is deemed Low, resulting in a **Slight** significance of visual effect.

At VP20, a more cluttered foreground and built-up setting result in Medium-low viewpoint sensitivity and highly screened views of the proposed project. As such, the magnitude of visual effect is deemed Low-negligible, with a final significance of visual effect of **Slight-imperceptible**.

The visual effects arising from the project in relation to centres of population, are assessed as **Not Significant** in EIA terms.

Major Routes

Of the 27 no. viewpoints assessed, 9 no. (VP6, VP10, VP11, VP13, VP14, VP16, VP19, VP20, VP24) were selected as being relevant to the consideration of visual effects in relation to Major Routes. Those located within the central study area (VP10, VP11, VP13, VP16, VP19) are addressed within Local Community Views, above. VP20 is addressed above due to the primary selection criteria being to represent the centre of population at Birr. The remaining viewpoints are representative of Major Routes are VP6, VP14, and VP24.

Visual effects when considered in relation to major routes are experienced transiently whilst in motion, often at great speed.

Among the remaining major-route viewpoints (VP6, VP14 and VP24), the highest effect significance is Slight, with a negative quality and long-term duration as experienced at VP6 and VP14. Regional road viewpoint at VP6 (R439 at Taylors Cross) features relatively clear views of the proposed project, from a robust rural landscape, resulting in Low magnitude of visual effect. VP14 (R438 at Deerpark) also features a Low magnitude of visual effect, resulting in **Slight** significance of visual effects at both viewpoints.

Within the south of the study area, VP24 is located along the N62, south of Birr. This viewpoint is deemed Medium-low sensitivity, with views over the surrounding rural landscape. Due to distance and intermittent screening, VP24 features Low-negligible magnitude of effect, and **Slight-imperceptible** significance of visual effect.

Collectively, with consideration of viewpoints addressed in other receptor categories, the Major Route viewpoints indicate the variable nature of the visual effects that would be experienced transiently from the major routes that pass through the study area. The visual effects arising from the project in relation to major routes are assessed as **Not Significant** in EIA terms.

Summary of Visual Effects

As outlined in the above sections and in **Table 10 9**, The residual significance of visual effects as a result of the proposed project ranges from Substantial-moderate to Imperceptible. A summary of residual visual effects at receptor types at assessed representative viewpoints is provided in **Table 10.10**.

Receptor Type	Residual Significance of Visual Effect Range (at assessed representative viewpoints – refer to Annex 10.1)
Key Views	Slight-imperceptible to Imperceptible
Local Community Receptors	Substantial-moderate to Imperceptible
Designated Views & Routes	Slight to Imperceptible
Tourism, Amenity & Heritage Receptors	Moderate to Imperceptible
Centres of Population	Slight to Imperceptible
Major Routes	Substantial-moderate to Imperceptible

Table 10.10: Summary of Operation Phase Visual Effects at Defined Receptor Types

Based on the assessment undertaken, residual operational stage visual effects generated by the proposed project range between Substantial-moderate and Imperceptible, with the highest ranging effects confined to local community receptors located within the immediate surroundings of the proposed turbine array. These higher-order effects occur principally at receptors located to the north and west of the proposed project where the turbines are viewed at close range and become prominent built features within the surrounding rural landscape. Notwithstanding this, these effects remain heavily localised, generally contained within approximately 1 km of the proposed turbine array, beyond which visual effects reduce progressively as viewing distances increase and the degree of screening afforded by lowland terrain and intervening vegetation becomes more pronounced.

The more notable local visual effects of a **Substantial-moderate** classification relate to

viewpoints VP8 and VP10, where the proposed turbines present at a dominant scale and generate a marked increase in the scale and intensity of built development visible within the local landscape. However, even at these receptors, the proposed turbines generally present in a coherent and visually legible arrangement, with clear spacing characteristics, relatively limited turbine overlap and a degree of visual permeability retained through the array. Whilst the proposed project will result in some detracting from the prevailing rural character and alter local visual amenity, the turbines do not generally appear over-scaled or incongruous within the context of the modified rural landscape that characterizes the central study area.

Beyond the immediate surroundings of the site, visual effects reduce rapidly. Designated scenic views, tourism and amenity receptors associated with the Shannon River, Esker Riada, Slieve Bloom Mountains, and Birr, heritage features, centres of population and major route corridors experience effects within the Moderate to Imperceptible range. Within the central study area, one of the more notable visual constraints to the proposed project relates to the local and major route road networks. Viewpoint 9, to the north represents the heritage feature of Whigsborough House, while VP11, VP13 and VP16 are located along the major routes to the south and east of the proposed project. The proposed turbines will generate a residual significance of visual effect of **Moderate** at VP9, VP13, and VP16, and **Slight** at VP11. This is due to the aesthetics of the turbines in relation to foreground vegetation, structures and landform, which frequently combine to partially screen the lower section of turbines, while the scale and extent of the proposed project is generally legible and well contained.

Beyond the central study area, the proposed turbines are typically viewed at middle to far distances, often partially screened by landform and vegetation, and generally occupy only a limited extent within broader views which feature existing wind energy. In many instances, the principal aspect of visual amenity remains associated with the river setting of the Shannon, the elevated scenic landscapes of the Slieve Blooms, and the immediate settings of local heritage features, with the proposed project presenting as a distant feature with a sub-dominant to minimal visual presence in a landscape which features an existing baseline of wind energy development. Consequently, whilst the turbines will often remain visible, they generally present as background features and do not materially diminish the appreciation of scenic or amenity value within the wider study area.

The nearest residential dwelling to the proposed turbines is located approximately 710m from the nearest turbine and is associated with an economically involved landowner. All non-involved residential properties are located beyond the four-times-tip-height visual amenity setback identified in the Draft Revised Wind Energy Development Guidelines (2019), which equates to 800m for the maximum 200m turbine tip height. As depicted in these views, whilst some localised higher-order visual effects occur within the immediate surroundings of the proposed turbine array, the proposed project does not give rise to significant visual effects on residential visual amenity.

Overall, the proposed project represents a wind energy project with limited lateral extent, located within a modified and relatively robust rural landscape characterised by extracted peat, various ages of forestry, existing wind energy, dispersed settlement, pastoral agriculture, and established working land uses. Whilst the proposed turbines will introduce a notable increase in the scale and extent of built development within parts of the central study area, the receiving landscape is considered capable of

accommodating a wind energy development of this nature and scale, as indicated by the existing wind energy context. On balance, having regard to the turbine layout, receptor offsets, prevailing landscape character and the limited spatial extent of higher-order effects, residual operational stage visual effects are assessed as Not Significant in EIA terms, with the highest assessed effects being Substantial-moderate.

10.4.4.4 Decommissioning Phase

With the exception of site tracks that may be left in situ, the decommissioning phase will see the removal of all turbines and infrastructure from the project site, with areas of hard standing that are of no further use reinstated to blend with the prevailing surrounding land cover.

It is expected that the decommissioning phase will be completed within 1-year and that within a relatively short period of time following decommissioning (approximately 2-3 years) there will be little evidence that a wind farm was present at this location.

The decommissioning phase will see a similar nature of effects to the construction phase due to the movement of heavy machinery within the site and to and from the site. However, such effects will be short-term in duration and decrease in scale as wind turbine components are removed from view and the landscape is substantially reinstated.

As with construction phase effects, decommissioning phase effects are assessed to be **not significant**.

10.4.5 CUMULATIVE EFFECTS

The assessment of cumulative landscape and visual effects is placed principally on the cumulative wind energy developments outlined in **Chapter 1 (Table 1.4)** that occur within the study area. The appraisal of cumulative effects with other wind energy developments is based on the cumulative ZTV maps and wireframes provided at **Annex 10.2**.

It is important to note that cumulative ZTVs are also based on bare-ground data and that cumulative wind farm visibility is likely to be much less than identified on the ZTV maps, which inherently overemphasise the degree to which the project would be seen cumulatively.

Although the photomontages and Cumulative ZTV map in **Annex 10.2** relates principally to cumulative visual effects (i.e. utilising the selected VP set), it also informs the closely related assessment of cumulative landscape effects, particularly those relating to cumulative effects on the overall landscape character of the study area. The assessment below, therefore, relates to both cumulative visual effects and cumulative landscape effects.

As indicated at **Section 10.3.3.4**, there are 10 no. other existing, permitted or proposed wind farm developments within the study area. Of the total number of cumulative turbines, the densest concentration are the existing developments of Meenwaun, Cloghan, and Derrinlough, to the north of the proposed project. The permitted Cush Wind Farm Phase I also occurs within the central study area, immediately southwest of the site. Along the rolling landform to the south of the study area, the smaller developments of Carrig & Skehanagh are both existing at 14-15km from the site, whilst Carrig Renewables Wind Farm is permitted, and Ballincor Wind Farm is proposed. The smaller Leabeg Wind Farm is located to the north, as is the permitted Lea Mor turbine.

In terms of cumulative construction and decommissioning stage effects, the primary anticipated source of construction or decommissioning cumulative effects is the adjacent Cush Wind Farm Phase I, which is proposed to be constructed simultaneously with the proposed project. There is a secondary consideration of the Mullanafawnia 110kV Substation, which has potential to combine construction stage effects. As with the surrounding wind farms, construction stage cumulative effects primarily relate to site disturbance and intensification of activity within the wider low intensity rural land uses. Otherwise, the lifespan and timelines of the proposed project do not align with other projects in the wider study area. In this instance, there is the potential for an increase in the intensity of construction/decommissioning activity within the central study area and site surrounds. This includes the movement of HGVs along the surrounding road networks, storage of working vehicles and machinery, and the erection of tower cranes to construct/remove the turbine components.

The proposed project is contained to one side of the N62, with a smaller footprint than that of Cush Wind Farm Phase I. As such, it is likely that the construction works associated with the proposed project will be secondary to those permitted for the construction of Cush Wind Farm, extending the area of works to the northeast.

The proposed Phase II wind farm will utilise the construction and operational site access arrangements permitted as part of Cush Wind Farm Phase I, thereby limiting the requirement for additional access works. The primary source of cumulative construction effects will therefore arise from the increased extent and duration of construction activity within the immediate site surrounds, particularly that associated with turbine construction. Turbine erection cranes, the temporary storage of turbine components and increased construction activity will occur on both sides of the N62 and will be visible to the local community within the central study area.

While the combination of these two developments will contribute to wind energy becoming a characteristic element of the surrounding landscape, the extent of the proposed construction and decommissioning stage works associated with the proposed project will not strongly or significantly contribute to a sense of proliferation or being surrounded by wind energy development. Overall, with regard to cumulative construction or decommissioning effects with other wind farm developments within the study area, effects are assessed as **Not Significant**.

Turning to the cumulative visual effects, the addition of the project within a cumulative baseline scenario will generate cumulative visual effects where it is seen in combination with other wind energy developments in the same view (combined visibility) or sequentially as part of a journey through the landscape. NatureScot guidance outlines that combined visibility can occur 'in combination' where several wind farms are within the observer's arc of vision at the same time or 'in succession' where the observer has to turn to see the various wind farms.

As shown in the photomontages, once fully constructed, the key cumulative relationship within the central study area and immediate site surrounds is with Cush Wind Farm Phase I. When the baseline is extended to consider other wind energy developments that are permitted or known to be proposed, but are not yet present in the landscape, the baseline is extended to include the permitted Carrig Renewables Wind Farm, single Lea Mor Wind Turbine and the proposed Ballincor Wind Farm, the latter being located in excess of 11km to the south.

The proposed project increases the number of wind turbines to the east of the N62, north of the permitted Cush Wind Farm Phase I, increasing prominence of wind energy within south and west facing views such as at VP8, VP9, VP10, VP11. From the south

and west, the proposed project is visible as a background feature of the more visible Cush Wind Farm Phase I turbines, increasing instances of overlap and the extent of wind energy across the immediate viewer surrounds, such as at VP15, VP16, and VP19.

The project provides depth and additional intensity and overlap to the combination of the existing Meenwaun/Cloghan/Derrinlough and permitted Cush Wind Farm Phase I developments. The permitted Carrig Renewables Wind Farm, located in the southwest of the study area most often presents in the background of views from the northern study area, relating to the existing and permitted cumulative developments by adding visual clutter in the distance (where visible). This cumulative relationship is represented in VP1, VP2, VP3, VP4, & VP5. VP5 in particular offers clear views of this pattern, where the proposed project is viewed in the central background of Derrinlough and Cloghan developments, filling in the background and any visual spaces between these two schemes when viewed with the permitted Cush Wind Farm Phase I. Due to the location of the proposed project relative to Cush Wind Farm Phase I, the proposed project increases the lateral extent of 'background' turbines viewed through the existing Cloghan/Derrinlough/Meenwaun cluster. However, this changes when the proposed project is viewed from the east or west, where the location to the north of Cush Wind Farm serves to draw the existing and permitted developments together. This is particularly evident in VP6, and the wireframe view at VP7.

When viewed from the south of the study area, the proposed project is often viewed between the permitted Cush Wind Farm Phase I and existing developments to the north. From this angle, the primary cumulative relationship is with Cush Wind Farm Phase I, with increased overlap between turbines, and the subtle lateral extension of turbines to the northeast. This is represented in VP15 in particular, as the slightly elevated location allows clear views across all schemes, as does VP14 and VP24. There is a higher degree of clutter present at greater distances as there is a reduction in depth/perspective and visual separation between the arrays. Additional views where the proposed project is grouped with the surrounding permitted and existing developments when viewed from the south, albeit to a lesser degree are VP16, VP22, & VP25.

When viewed from elevated and oblique angles, the proposed project generally serves to draw the existing and permitted developments towards one another. This presents as infilling the existing extent of wind energy development, rather than increasing the proportion of the lowland landscape which is occupied by turbines. This can be seen clearly in VP12 and VP23. Overall, the proposed Carrig Wind Development is typically separated by distance/perspective or landform, and the primary cumulative relationship is between the proposed project and those cumulative developments within the central and northern study area.

In summary, the primary cumulative relationship is with Cush Wind Farm Phase I, where the proposed project presents as an extension of the permitted wind farm to the northeast, and the larger area of existing wind energy development. There is a balance between the increase in clutter and intensity of development against forming a consolidated group of wind energy developments. This relationship is reinforced by the association of many of the existing and permitted wind energy developments with areas of former industrial peatland/cutaway bog and conifer forestry.. It should also be noted that the proposed project and surrounding wind development are generally directed towards these compatible areas in the County Development Plan. Overall, it is deemed that the addition of the project to the

permitted baseline will have **Medium** cumulative effect. While the proposed project is not substantial, the combination of the project with the surrounding wind development will contribute to the characteristics of the receiving landscape being defined by the large wind energy development within it, particularly as the N62 runs between turbines at multiple locations.

The cumulative landscape and visual effects of the proposed project are considered **Not Significant**.

10.4.6 INTERACTIVE EFFECTS

The project involves features and activities that are likely to generate physical changes to the landscape and visual environment (both physical and perceptual) which will also result in wider environmental effects. This includes aspects relating to vegetation loss, construction of access tracks and public road upgrades and the presence of construction and maintenance plant at the project site. Likewise, there are aspects (such as noise) that are likely to influence experiential aspects of landscape character.

Whilst these aspects will generate a degree of change to the landscape and visual environment, the main interactions relate to the construction and presence of the wind turbines due to their visibility. The main interactions are assessed as relating to Population & Human Health and Cultural Heritage.

10.4.6.1 Landscape and Population & Human Health

Landscape and visual effects arising from the construction, operation and decommissioning of the project are assessed with respect to the effect on perceived landscape character, views and on the general visual amenity experienced by people, including local residents. Proportionately, the operational effects of the project are assessed as giving rise to the most notable landscape and visual effects given the long-term nature of the change and a greater focus is placed on them. However, whilst the wind turbines are likely to be prominent, they will be seen in the context of a modified landscape in which other wind turbines are present. The quality of the effect experienced by the local population is subjective in nature and the assessment assumes a default position of negative. Although effects experienced by proximate receptors in the nearby landscape were classified with higher-ranging effects on account of the scale of the wind turbines at close range (typical of any wind farm at close proximity), it is noted that the findings of the assessment identified a likelihood of **Not Significant** effects in relation visual receptors in the central or wider study area and these findings of the assessment have contributed to the Population & Human Health assessment.

10.4.6.2 Landscape and Cultural Heritage

Landscape and visual effects arising from the construction, operation and decommissioning of the project is assessed with respect to the effect on perceived landscape character, views and on the general visual amenity experienced by people, including those visiting publicly accessible heritage features and for whom views of the landscape are a contributing factor to the experience. Whilst the project will generate a change to the landscape setting of designated heritage assets, and is likely to be visible, it will form part of a modified landscape influenced by longstanding human intervention and by other wind turbines. Again, it is noted that the findings of the assessment did not identify any likelihood of significant landscape

or visual effects in relation to the central or wider study area.

10.5 MITIGATION MEASURES

10.5.1 EMBEDDED MITIGATION

Given the highly visible nature of commercial wind energy developments it is not generally feasible to screen them from view using on-site screening measures typically employed for other forms of development during the operation phase. Instead, landscape and visual mitigation measures have been incorporated into the siting and design of the project at an early stage (see **Chapter 2**). In the case of the wind farm, the guidance provided in the WEDGs (& DWEDGs) was the principal consideration. The relevant guidance for the landscape types that constitute the landscape and visual setting of the wind farm are discussed in detail in **Section 10.3.2.1** above. It is considered that the wind farm is broadly in line with the recommendations contained within the Guidelines.

The project has embedded landscape and visual mitigation measures and thus, the appraisal of potential landscape and visual effects is equivalent to any appraisal of residual effects in this instance.

Some of the general mitigation measures that will be implemented to make the development less intrusive and less eye catching on a localised level include:-

- The colour will be industry standard off-white/light grey semi-matt non-reflective finish;
- All internal wind farm electrical and communications cabling, together with the proposed c.5km underground electricity line, will be installed underground;
- Special care will be taken to preserve any features, insofar as possible, which contribute to the landscape character of the study area; and,
- Counter rotation of blade sets will be avoided.

10.5.2 CONSTRUCTION PHASE

All construction activities will follow best practice methods to reduce effects on the environment, as outlined in the Construction and Environmental Management Plan (CEMP) which will manage the environmental commitments of the project through the construction phase. It is noted that an Environmental Manager (EM) and Ecological Clerk of Works (ECoW) with appropriate experience will be appointed for the duration of the construction phase to ensure that the CEMP is effectively implemented.

Aside from mitigation measures to minimise land and vegetation disturbance and dust emissions (which may reduce visual amenity), no specific landscape or visual mitigation measures are proposed in relation to the construction phase beyond adherence to best practice methods to reduce environmental effects upon the environment.

The appropriate management and reinstatement of excavations in a timely manner will ensure that any adverse effects caused, for example at site entrances or road upgrade locations, are minimised insofar as possible.

The construction methodology has sought to minimise landscape disturbance. Temporary construction working areas will be reinstated to their original condition, with

all vegetation lost to facilitate works replaced. Replacement planting of hedgerows and treelines will be undertaken in accordance with the measures set out in **Chapter 5** and the Habitat and Species Management Plan at **Annex 5.7**, under the supervision of the ECoW. All hedgerows and treelines lost during construction will be replaced within the Project, ensuring no net loss, with additional hedgerow planting providing a net gain. Planting locations will maintain and enhance connectivity between habitat features.

The following standards are widely adopted as representing best practice in landscape operations:-

- *BS 4428:1989 Code of practice for general landscape operations (excluding hard surfaces);*
- *BS 5837:2012 – Trees in Relation to design, demolition and construction;*
- *BS 8545 Trees: from nursery to independence in the landscape – Recommendations; and,*
- *BS 3936 – Part 1: Nursery stock specification for trees and shrubs.*

10.5.3 OPERATION PHASE

No specific landscape or visual mitigation measures are proposed in relation to the project beyond those integrated within the project design and layout.

10.5.4 DECOMMISSIONING PHASE

No specific landscape or visual mitigation measures are proposed in relation to the decommissioning phase beyond adherence to best practice reinstatement methods. Disturbed areas of landscape arising from decommissioning activities will be allowed to vegetate.

10.5.5 MONITORING MEASURES

It is reiterated that an EM and ECoW with appropriate experience will be appointed for the duration of the construction phase so that the CEMP is effectively implemented and that all landscape works will be subject to ongoing management and maintenance. As there are no specific mitigation measures proposed in relation to reducing landscape and visual effects, monitoring measures are not considered necessary.

10.6 RESIDUAL EFFECTS

Best practice requires that the 'residual' effect (with mitigation in place) is re-assessed to demonstrate the effectiveness of the mitigation proposed.

No specific landscape or visual mitigation measures are proposed beyond adherence to best practice methods to reduce environmental effects upon the environment and undertaking reinstatement/replacement planting. These measures, together with the consideration given to the siting and design of the project, have been iteratively embedded into the project and it is assessed that there are no specific additional mitigation measures that would moderate effects further.

Given that the mitigation measures will not reduce the significance of effects further; the effects assessed in respect of the construction, operation and decommissioning phases above are unaltered by the mitigation measures and, therefore, are the residual effects assessed in respect of the project.

10.7 SUMMARY

The landscape of the central study area is considered to be a robust, modified, working landscape that is extensively influenced by typical productive rural landscape activities, land uses, and the increasing presence of wind energy. The site and majority of the central study area are described as of Low and Moderate sensitivity by Offaly County Council, being a flat and undulating agricultural and mixed peatland rural landscape. Higher sensitivity landscape elements within the central study area include the Esker landform running southwest/northeast, and wooded areas at Tullynisk and Whigsborough. The landscape is informed by the existing turbines to the north of the proposed project, as well as transmission infrastructure and extensive road networks. These elements combine to generate a varied anthropogenic character. Whilst this landcover and the presence of waterbodies informs a pleasant rural aesthetic, and there are parts of the study area that exhibit a greater degree of scenic value, landscape values reflect the longstanding human interaction with this landscape over time rather than being explicitly informed by naturalistic qualities and values.

Within the wider study area the most sensitive features are the Shannon River to the west, Lough Boora area to the north, and Slieve Bloom Mountains to the east. Anthropogenic influences are prevalent throughout the wider study area, most notably with the network of transport corridors and existing wind energy development. Settlements, together with linear clusters of residential development, contribute to a generally well settled landscape. The presence and overlay of other designations and heritage features follow similar patterns, concentrated around the Shannon and Slieve Blooms. Specifically, Clonmacnoise along the Shannon is recognised for both its habitat/recreational/scenic value and nationally significant archaeological importance.

In terms of landscape effects, the project represents an increase in scale and intensity of built development than currently exists within and around the site, it will not detract significantly from its diverse productive rural character to the north within which wind turbines are already a feature of the landscape character and is separated from the southern study area by landform and changes in landuse patterns. While there will be physical impacts on the land cover of the site as a result of the project during the operation phase, these will be relatively minor in the context of this productive rural landscape that comprises existing wind energy developments and extensive areas of cutaway bog and conifer forestry. The scale of the project will be well assimilated within its landscape context without undue conflicts of scale with underlying landform and land use patterns. Overall, the magnitude of the landscape effect is deemed to be High-medium_within the site and its immediate environs (c.1km) reducing to Medium for the remainder of the central Study Area. Beyond 5km from the site, the magnitude of landscape effect is deemed to reduce to Low and Negligible at increasing distances as the wind farm becomes a proportionately smaller and integrated component of the overall landscape fabric. As such, the significance of landscape effect is considered to be **Substantial-moderate / Negative / Long-term** within and immediately surrounding the proposed wind farm site, reducing to **Moderate / Negative / Long-term** within the central study area (c. 1-5km from the

proposed turbines). Thereafter within the wider study area (c. 5-20km from the proposed turbines), significance will reduce to **Slight** and **Imperceptible** at increasing distances as the proposed project becomes a progressively smaller component of the wider landscape fabric even in the context of higher sensitivity landscape units / features.

With regard to residual visual effects, the proposed project will generate some of the higher-order effects within the immediate study area (i.e. within 1 km of the proposed turbines), where the turbines have the potential to present with a dominant visual presence and will be perceived as the largest built features within the surrounding local context. Indeed, at a local level there will be some reduction in the degree of visual amenity afforded, which is commonplace for wind farm developments of a similar scale and nature. The proposed turbines generally present in a coherent and visually legible arrangement, with clear spacing characteristics, relatively limited turbine overlap and a degree of visual permeability retained through the array. In the central study area, visual effects are primarily due to the aesthetics of the turbines in relation to foreground vegetation, structures and landform, which frequently combine to partially screen the lower section of turbines, while the scale and extent of the proposed project is generally legible and well contained.

The nearest residential dwelling to the proposed turbines is located approximately 710m from the nearest turbine and is associated with an economically involved landowner. All non-involved residential properties are located beyond the four-times-tip-height visual amenity setback identified in the Draft Revised Wind Energy Development Guidelines (2019), which equates to 800m for the maximum 200m turbine tip height. All other residences are located beyond 800m. As depicted in the nearest viewpoints, some localised higher-order visual effects occur within the immediate surroundings of the proposed turbine array. However, the proposed project does not give rise to significant visual effects on residential visual amenity. Visual effects at higher sensitivity receptors within the study area are mitigated through distance and the limited extent of the proposed project within the wider landscape and proximity to existing wind energy development. Overall, residual visual effects range from **Substantial-Moderate** to **Imperceptible** and are assessed as **Not Significant** in EIA terms.

In terms of cumulative landscape and visual effects, the key cumulative relationship within the central study area and immediate site surrounds is with Cush Wind Farm Phase I. When the baseline is extended to consider other wind energy developments that are permitted or known to be proposed, but are not yet present in the landscape, it features the permitted Carrig Renewables Wind Farm, single Lea Mor Wind Turbine and the proposed Ballincor Wind Farm, the latter being located in excess of 11km to the south. The proposed project increases the number of wind turbines to the east of the N62, north of the permitted Cush Wind Farm Phase I, increasing prominence of wind energy within south and west facing views. The project provides depth and additional intensity and overlap to the combination of the existing Meenwaun/Cloghan/Derrinlough and permitted Cush Phase I developments. The permitted Carrig Renewables Wind Farm, located in the southwest of the study area most often presents in the background of views from the northern study area, relating to the existing and permitted cumulative developments by adding visual clutter in the

distance (where visible). From the south and west, the proposed project is visible as a background feature of the more visible Cush Wind Farm Phase I turbines, increasing instances of overlap and the extent of wind energy across the immediate viewer surrounds.

In summary, the primary cumulative relationship is with Cush Wind Farm Phase I, where the proposed project presents as an extension of the permitted wind farm to the northeast, and the larger area of existing wind energy development. There is a balance between the increase in clutter and intensity of development against forming a consolidated group of wind energy developments. This relationship is reinforced by the association of many of the existing and permitted wind energy developments with areas of former industrial peatland/cutaway bog and conifer forestry. It should also be noted that the proposed project and surrounding wind development are generally directed towards these compatible areas in the County Development Plan. While the proposed project is not substantial, the combination of the project with the surrounding wind development will contribute to the characteristics of the receiving landscape being defined by the large wind energy development within it, particularly as the N62 runs between turbines at multiple locations. Overall, the cumulative landscape and visual effects arising from the Proposed Project under both the current cumulative scenario and the potential future cumulative scenario are assessed as **Not Significant**.

Based on the landscape, visual and cumulative assessment contained herein, it is assessed that there will not be any significant landscape or visual effects arising from the project.