MWP

Chapter 11 Landscape and Visual

Ballinla Wind Farm

Ballinla Wind Farm Limited

July 2025

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MWP, Engineering and Environmental Consultants
Address: Reen Point, Blennerville, Tralee, Co. Kerry, V92 X2TK, Ireland

www.mwp.ie

11. Landscape and Visual

11.1 Introduction

This chapter considers the potential effects on the landscape and visual resource in the area arising from the Proposed Development. A full description of the Proposed Development, development lands and all associated project elements is provided in Chapter 2 of this EIAR. The nature and probability of effects on the landscape and visual resource in the area arising from the overall project has been assessed. The assessment comprises:

- A review of the existing receiving environment.
- Assessment and characterisation of likely impacts.
- Evaluation of effects significance.
- Consideration of mitigation measures, where appropriate.

11.1.1 Competency of Assessor

This Landscape and Visual Impact Assessment (LVIA) was prepared by Richard Barker, Divisional Director and Landscape Architect at Macro Works Ltd (part of APEM Group), in Cherrywood, Dublin. Richard is a corporate member of the Irish Landscape Institute (ILI) and has undertaken LVIA work for over 100 wind farms amongst numerous other large scale infrastructure development projects in Ireland over the past 20 years. He has also presented conference papers and webinars on the topic of LVIA to the ILI with a particular focus on wind energy development.

Macro Works is a specialist LVIA company with over 25 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 200 onshore wind farm proposals throughout Ireland, including more than a dozen SID wind farms. Macro Works and its senior staff members are affiliated with the Irish Landscape Institute.

11.1.2 Legislation

Ireland has signed up to the European Landscape Convention (ELC), which defines landscape as 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors' (Council of Europe, 2000). The definition of landscape applies to all types of rural landscape, marine and coastal landscapes (seascapes) as well as the townscape of villages, towns, and cities (Section 2.5, LI, IEMA, 2013).

11.2 Methodology

11.2.1 Desktop Study

The methodology used for this study included desk-based research of published information and site visits to assemble information on the local receiving environment. The desk study included the following activities:

- Review of a Zone of Theoretical Visibility (ZTV) map, which indicates areas from which the Proposed Development is potentially visible in relation to terrain within the study area.

- Review of relevant County Development Plans (CDPs), particularly regarding sensitive landscape and scenic view/route designations.
- Selection of potential Viewshed Reference Points (VRPs) from key visual receptors to be investigated during fieldwork for actual visibility and sensitivity (outlined in due course)

11.2.2 Fieldwork

- Macro Works undertook fieldwork in October 2024, which consisted of visits to VRP locations, and the throughout the study area generally in order to gain a baseline understanding of landscape context and to interrogate the ZTV map.
- Baseline photography for use in photomontage preparation was captured by Innovision in September 2024.

11.2.3 Landscape and Visual Assessment

The process adopted in regard to the identification of landscape and visual effects (adopting the assessment criteria in 11.2.5 and 11.2.6 respectively) is summarised as follows:

- Selection of a refined set of VRPs for assessment (outlined in due course).
- 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 design guidance and planning policies.
- Consideration of potentially significant construction, operational, and decommissioning stage effects and the mitigation measures that could be employed to reduce such effects.
- Assessment of the significance of residual landscape impacts.
- Assessment of the significance of residual visual impacts aided by photomontages prepared at all of the selected VRP locations.
- Assessment of cumulative landscape and visual effects in combination with other surrounding developments that are either existing or permitted.

11.2.4 Guidelines and Best Practice

This LVIA uses a methodology that is in accordance with that prescribed within the following guidance documents:

- 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 publication entitled Guidelines for Landscape and Visual Impact Assessment – Third Edition (2013) (GLVIA3).
- Department of the Environment, Heritage, and Local Government Wind Energy Development Guidelines (2006) and Draft Revised Wind Energy Development Guidelines (2019).

- NatureScot: Assessing the cumulative landscape and visual impact of onshore wind energy developments (2021).
- SNH Visual representation of wind farms: Best Practice Guidelines (version 2.2 - 2017).
- Landscape Institute Technical Guidance Note (TGN) 06/19 Visual Representation of development proposals (2019)

The above guidance is widely recognised and used by landscape professionals in undertaking LVIA work in Ireland and is considered to represent best practice in the absence of country-specific LVIA and visualisation guidance/standards.

11.2.5 Study Area

The Wind Energy Development Guidelines published by the Department of the Environment, Heritage, and Local Government (DOEHLG) (2006/2019 revision) (WEDG) specify different radii for examining the zone of theoretical visibility of proposed wind farm projects (ZTV). The extent of this search area is influenced by turbine height, as follows:

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

In the case of this project, the blade tips are proposed to be 185m high and therefore the minimum ZTV radius recommended is 20km from the outermost turbines of the scheme. There are not considered to be any sites of national or international importance between 20km to 25km of the outermost turbines of the Proposed Development and thus, the radius of the study area will remain at 20km (the Study Area). Impacts pertaining to other aspects of the Proposed Development such as the grid connection route, and turbine delivery route, are localised to the immediate environment, and as such the consideration of impacts focuses on the immediate landscape context within approximately 500m. These areas fall within the 20km Study Area.

The Study Area adopted is in accordance with the WEDG and is consistent with study areas employed for comparable wind energy applications throughout Ireland. It is considered a robust area on which to structure the LVIA, whilst being proportionate to the most notable effects.

Notwithstanding the full extent of the LVIA Study Area, there will be a particular focus on receptors and effects within the Central Study Area where there is a higher potential for significant impacts to occur. When referenced within this assessment, the 'Central Study Area' is the landscape within 5km of the Proposed Development. The remainder of the Study Area beyond 5km to the 20km outer limit is referred to as the 'Wider Study Area'. 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 Proposed Development, the context of the landscape within the local vicinity of the turbines, and then the context of the wider landscape.

11.2.6 Scope of Assessment

Table 11-1 outlines the issues which the EPA guidance documents suggest may be examined as part of the Landscape and Visual Impact Assessment.

Table 11-1: Issues relevant to Landscape and Visual

Topic Area	Potential Issues
Landscape Appearance and Character	Change to the salient appearance and character of the landscape contained within the study area
Landscape Context	Physical changes to landform, land cover and landscape features that may contribute to a loss of characteristic landscape elements or the introduction of uncharacteristic elements.
Historical Landscapes	Change to the salient appearance and character of Historical Landscape settings within the study area (See Cultural Heritage Assessment)
Views & Prospects	Changes to views that could impact on the visual amenity of visual receptors (people involved in particular activities or resident at particular locations)

Accordingly, the scope of this assessment is made with respect to these topic areas and considers the effects of the construction, operation, and decommissioning of the Proposed Development.

11.2.7 Assessment Criteria

Determination of the significance of an effect will be made in close accordance with the terminology outlined in the EPA Draft Guidelines on Information to be contained in Environmental Impact Assessment Reports (2017) (as set out in Table 11-2). The only variation will be the use of best practice LVIA significance criteria/terminology for the significance of effect which avoids the use of the potentially confusing *'Not significant' category between 'Imperceptible' and 'Slight' effects and substitutes the term 'Substantial' for **'Significant', albeit noting that effects of 'Substantial' and above are deemed to be significant effects in EIA terms.

Table 11-2: Impact Assessment Criteria

	Term	Description
Quality of Effects	Positive	A change which improves the quality of the environment
	Neutral	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error
	Negative /adverse	A change which reduces the quality of the environment
Significance of Effects	Imperceptible	An effect capable of measurement but without significant consequence
	*Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences
	Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
	Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends
	**Significant	An effect which, by its character, magnitude duration or intensity alters a sensitive aspect of the environment
	Very Significant	An effect which, by its character, magnitude duration or intensity alters most of a sensitive aspect of the environment
	Profound	An impact which obliterates sensitive characteristics
Duration of Effect	Momentary	Effects lasting from seconds to minutes
	Brief	Effects lasting less than a day
	Temporary	Effects lasting less than a year
	Short-term	Effects lasting one to seven years

	Term	Description
	Medium-term	Effects lasting seven to fifteen years
	Long-term	Effects lasting fifteen to sixty years
	Permanent	Effects lasting over sixty years
	Reversible	Effects than can be undone e.g. through remediation or restoration
	Frequency	How often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)
Types of Effects	Indirect	Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.
	Cumulative	The addition of many minor or significant effects, including effects of other projects, to create a larger, more significant effect.
	'Do Nothing'	The environment as it would be in the future should the subject project not be carried out.
	'Worst case'	The effects arising from a project in the case where mitigation measures substantially fail.
	Indeterminable	When the full consequences of a change in the environment cannot be described.
	Irreversible	When the character, distinctiveness, diversity, or reproductive capacity of an environment is permanently lost.
	Residual	The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
	Synergistic	Where the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SOx and NOx to produce smog).

Source: EPA Draft Guidelines on Information to be contained in Environmental Impact Assessment Reports (2022)

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 or even neutral. Unless otherwise stated, the quality of the landscape and visual effect judgements herein can be taken as negative.

In terms of duration, the proposed turbines will have a long-term impact, as permission is being sought for a 35-year period after which the turbines will be decommissioned. Some other elements of the Proposed Development relating to access tracks and elements of the Proposed Grid Connection will likely remain in perpetuity and will therefore have Permanent effects.

11.2.7.1 Assessment Criteria for Landscape Effects

The classification system used by Macro Works to determine the significance of landscape and visual impacts is in accordance with GLVIA3. 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 impacts.
- 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 on its essential characteristics. Landscape Value and Sensitivity is classified using the criteria outlined in Table 11-3.

Table 11-3: Landscape Value and Sensitivity

Criteria	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.

The magnitude of a predicted landscape impact is a product of the scale, extent or degree of change that is likely to be experienced as a result of the Proposed Development. 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 Proposed Development boundary that may have an effect on the landscape character of the area.

Table 11-4: Magnitude of Landscape Impacts

Criteria	Description
Very High	Change that would be large in extent and scale with the loss of critically important landscape elements and features, which may also involve the introduction of new uncharacteristic elements or features that contribute to an overall 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, which may also involve the introduction of new uncharacteristic elements or features that contribute to an overall 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 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.

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.

The significance of a landscape impact is based on a balance between the sensitivity of the landscape receptor and the magnitude of the impact. The significance of landscape impacts is arrived at using the matrix shown in Table 11-5.

Table 11-5: Landscape Impact Significance Matrix

	Sensitivity of Receptor				
Scale/Magnitude	**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

Note: Judgements deemed 'substantial' and above are considered to be 'significant effects' in EIA terms. Substantial-moderate judgements are considered borderline significant.

11.2.7.2 Assessment Criteria for Visual Effects

As with the landscape impact, the visual impact of the Proposed Development 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.

11.2.7.2.1 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 receptor group to changes in view. This is one of the most important criteria to consider in determining overall visual sensitivity because it is the single category dealing with viewer susceptibility. 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.
- 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.
- 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 the visual amenity

- Recognised scenic value of the view (County Development Plan 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 County Development Plans, 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 County Development Plan 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.
- 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.

- 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.

11.2.7.2.2 Visual Impact Magnitude

The magnitude of visual effects is determined on the basis of two factors: the visual presence of the proposal 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 Proposed Development 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, specifically being 'noticed' by viewers and contributing memorably to the experience of that view or location – positive or negatively. Instead, the 2018 Fáilte Ireland survey entitled 'Report on Visitor Awareness and Perceptions of the Irish Landscape' summarised results as below:

- *"The majority of visitors appear not to notice the majority of development – even very large and visually prominent structures such as wind turbines and powerlines*
- *It appears that there are significant divergences between what can be seen and what is noticed*
- *The majority of visitors expressed very limited desire to change developments that they do notice*
- *The visibility of developments of all types give rise to significantly less adverse effects on the impression of landscape than may often be assumed in the decision-making process*
- *The majority of visible development does not appear to have any adverse effects on the impression of the quality of the landscape"*

With specific regard to wind farms, the following is mentioned within the main report:

- "Visibility at Locations - Windfarms or Wind Turbines were visible from four locations, they were mentioned by visitors at one location – Cobh. At this Site 11% of visitors mentioned noticing wind energy projects
- Visibility en-route to locations - Wind Energy projects were mapped as being visible en-route to six Sites, they *were mentioned by less than 5% of all visitors."*

The purpose here is not to suggest that turbines are unlikely to be noticed, or inherently liked or disliked, but rather to highlight that the assessment of visual impact 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 impact 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 impacts result almost entirely from visual 'intrusion' rather than visual 'obstruction' (the blocking of a view). The magnitude of visual impacts is classified in the following table derived from GLVIA3:

Table 11-6: Magnitude of Visual Impacts

Criteria	Description
Very High	The proposal intrudes into a large proportion or critical part of the available vista and is without question the most noticeable element. A high degree of visual disorder or disharmony is also generated, strongly reducing the visual amenity of the scene.
High	The proposal 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 disorder or disharmony is also likely to be generated, appreciably reducing the visual amenity of the scene.
Medium	The proposal represents a moderate intrusion into the available vista, is a readily noticeable element and/or it may generate a degree of visual disorder or disharmony, thereby reducing the visual amenity of the scene. Alternatively, it may represent a balance of higher and lower order estimates in relation to visual presence and 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 detract from, and may even enhance, the visual amenity of the scene.

11.2.7.2.3 Visual Impact Significance

As stated above, the significance of visual impacts is a function of visual receptor sensitivity and visual impact magnitude. This relationship is expressed in the significance matrix in Table 11-6.

11.2.7.3 Assessment Criteria for Cumulative Effects

The WEDG references the need to assess the cumulative effects of the scheme (at 4.7.4, P41 of the 2019 revision) as including the "wind energy development and the grid connection and any other works which are ancillary to the development of the wind energy development" in order that the planning application addresses the cumulative impacts of the whole project. Cumulative in this context relates the project as a whole and has been the approach adopted in the main assessment (as outlined in 11.2.2).

NatureScot's 'Guidance – Assessing the Cumulative Effects of Onshore Wind Farms' (2021) is considered a key reference with regard to cumulative landscape and visual impacts. 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. This will also be the main focus herein, albeit with subsequent consideration of cumulative impacts with other forms of notable development (existing, permitted or proposed).

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 WEDG describes 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 turbine developments in various landscape contexts. It also requires that cumulative effects are represented using Zone of Theoretical Visibility 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 an additional wind farm 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 11-7 provides Macro Works' criteria for assessing the magnitude of cumulative impacts. 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 schemes across Ireland.

Other wind energy developments are the most relevant type of development in a cumulative LVIA 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 LVIA, a proportionate level of consideration is given to schemes that are considered to have the potential to significantly alter the

cumulative landscape and visual baseline environment. Factors such as scale and proximity of a Proposed Development are important factors, in addition to the characteristics of the development in question.

Table 11-7: Magnitude of Cumulative Impacts

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.

11.2.7.4 Scoped out from Further Assessment

Those landscape and visual receptors that have been scoped out of further assessment are those that fall outside of the study area and in the case of visual impacts it is also those receptors within the study area that fall outside of the ZTV pattern (covered in due course).

11.2.8 Statement on Limitations and Difficulties Encountered

There were no particular limitations or difficulties encountered in the course of this LVIA.

11.3 Baseline Environment

11.3.1 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 Proposed Development will be assessed. This also includes reference to any relevant landscape character appraisals and the current landscape policy context (both are generally contained within CDPs. The relevant CDP covering the Proposed Development is the Offaly CDP 2021-2027.

A description of the landscape context of the Proposed Development site (the 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 Proposed Development. The visual resource will be described in greater detail below. **Figure 11-1** shows the Proposed Development location in its landscape context and the immediate surroundings.

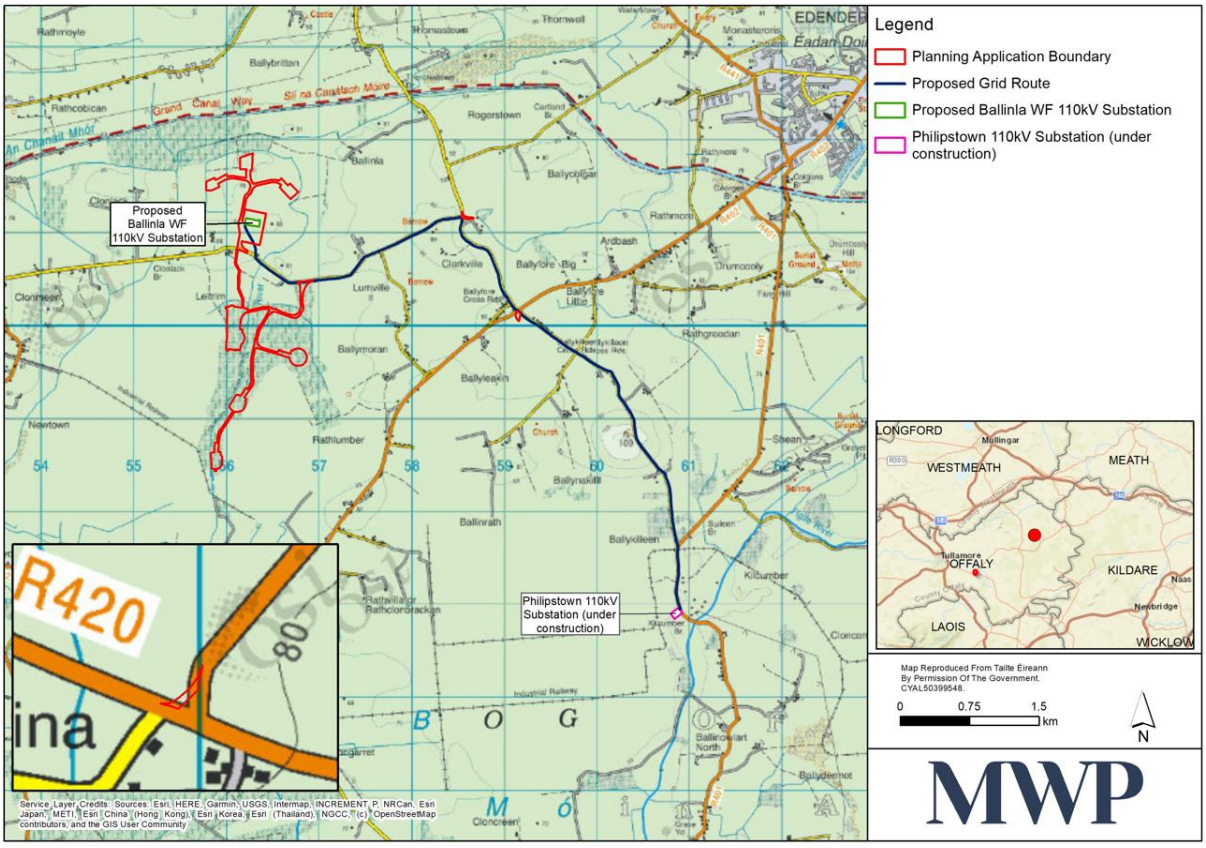

Figure 11-1: Site Location and Red Line Boundary of the Proposed Development

11.3.1.1 Landform and Drainage

The landscape of the study area is predominantly flat to gently undulating, particularly in the central study area, with isolated hills in the wider study area, to the northwest, south/southeast, and the west of the Proposed Development. The Proposed Development is located in relatively low-lying lands below the 90m contour level. However, in the study area there are landforms that exceed 100m AOD, including the low hill on which Edenderry is set (at 94m AOD approximately 6km east), Croghan Hill (287m AOD approximately 7.8km northwest) Grange hill (223m AOD approximately 19.8km southeast) and Dunmurry Hill (234m AOD approximately 19.9km southeast) in the wider study area.

As a result of the flat and often boggy nature of the central study area, watercourses are generally not that distinctive, meaning drainage is, in places, a dendritic pattern of meandering small streams and drains. A number of tributaries of the River Boyne and River Figile, traverses through the turbine array, and drains to the River Boyne and River Figile drainage channels. Other notable Rivers within the study area includes Yellow (Castlejordan) River, Slate River, and Silver (Tullamore) River. A notable waterway, The Grand Canal is located approximately 500m of the north of the nearest turbine and is a regular presence in much of the Study Area.

11.3.1.2 Vegetation and Land use

The land cover in the Study Area consists of a mix of cutaway peatland (associated marginal farmland, and forestry along the peatland fringes), as well as more productive agricultural farmland, frequently found on better-drained ground. Field sizes are varied across the Proposed Wind Farm, with smaller, irregular field sizes tracing the landform, getting larger where more cohesive areas of farmland occur.

The same general land cover pattern of the central study area is repeated in the north and south of the study Area, albeit with a higher concentration of cutaway peatland, but for most of the study area agriculture (i.e. pastoral and cropping), followed by commercial conifer plantations, are the dominant land uses. Wind energy is an established land use in the area, represented by Bord na Móna's 21-turbine Cloncreen wind farm, located approximately 2km southeast, and their 28-turbine Mount Lucas wind farm, situated approximately 4.1km southwest of the Proposed Development. The Mount Lucas wind farm is situated on a regenerating cutaway bog and includes a 7km public walkway and cycleway around the Site.

There are several settlements throughout the study area that serve as rural service centres, the closest being Rhode and Edenderry. These settlements contribute a modest proportion of urban and industrial land cover within the study area. Additionally, there are a number of extensive recreational facilities, such as golf courses and GAA clubs (e.g., Ballyfore GAA and Rhode GAA). Edenderry Power Station is located approximately 5.2km southeast of the Site. Multiple rivers and waterways are also present, with the Grand Canal being the most notable feature.

11.3.1.3 Landscape Policy Context and Designations

11.3.1.3.1 The Department of Environment, Heritage, and Local Government Wind Energy Development Guidelines (2006/2019 revision)

In December 2019, the Department of Housing, Planning and Local Government issued the Draft Revised Wind Energy Development Guidelines, which will be refined through the consultation process, before being adopted to supersede the 2006 Wind Energy Development Guidelines. The Draft Revised Wind Energy Development Guidelines (2019) provide guidance on wind farm siting and design criteria for a number of different landscape types. The Site of the Proposed Development is considered to be located within a landscape that is consistent with both the 'Flat Peatland' and 'Hilly and Flat Farmland' Landscape Types. The former in terms of flatness, and broad scale land use patterns, which consists of some peatland fringe farmland and forestry. The latter in terms flat agricultural fields of improved grassland at the northern end of the Site. In instances where two or more landscape types are potentially applicable, the Guidelines recommend consideration of the advice for each landscape type rather than just that considered to be most applicable. The Guidelines state: *"It is, however, common that a wind energy development is located in one landscape character type but is visible from another. for example, where the Site comprises an unenclosed moorland ridge standing above a broad flat farmland. In such an instance, the entire visual unit should be taken into consideration …"*

11.3.2 Hilly and Flat Farmland Landscapes

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. Turbines perceived as being in close proximity to, or overlapping other landscape elements, such as buildings, roads and power or telegraph poles and lines may result

in visual clutter and confusion. While in practice this can be tolerated, in highly sensitive landscapes every attempt should be made to avoid it."

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 pattern 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 some 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. Where a wind energy development is functionally possible on a flat landscape a grid layout would be aesthetically acceptable."

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

"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."

11.3.3 Flat Peatland Landscapes

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

"The openness of vistas 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."

In respect of the above guidance, the moderate spatial extent of the Proposed Development is in keeping with that recommended for both landscape types.

Setback

Section 6.18 of the 2019 Draft Revised Guidelines refers to "siting in relation to individual properties," which is known as "setback." This is understood to be the only change to the 2006 guidelines that is of potential relevance to the Proposed Development.

It is worth noting that the Draft Revised Guidelines 2019 are not yet adopted. However, best efforts have been made to achieve the 4 x tip height setbacks from sensitive receptors as required in the 2019 draft revised guidelines, in this instance 740m (4 x 185m tip height). All non-involved residential properties in the area are located at a distance greater than 740m of proposed turbines.

11.3.3.1.1 Offaly County Development Plan (CDP) 2021-2027

The Proposed Development is located wholly within County Offaly. The Offaly CDP 2021-2027 does not contain a Landscape Character Assessment, however, a classification of landscape sensitivity for various landscape types is provided. This utilises three sensitivity categories: High, Medium, and Low. The Proposed Development is located predominantly within a Low sensitivity area except two turbines to the south which are located within a Medium sensitivity area due to its proximity to peatland and peatland fringe woodland scrub. The nearest area of 'High' sensitivity in the surrounding area is a narrow strip associated with Grand Canal approximately 500m north of the nearest turbine.

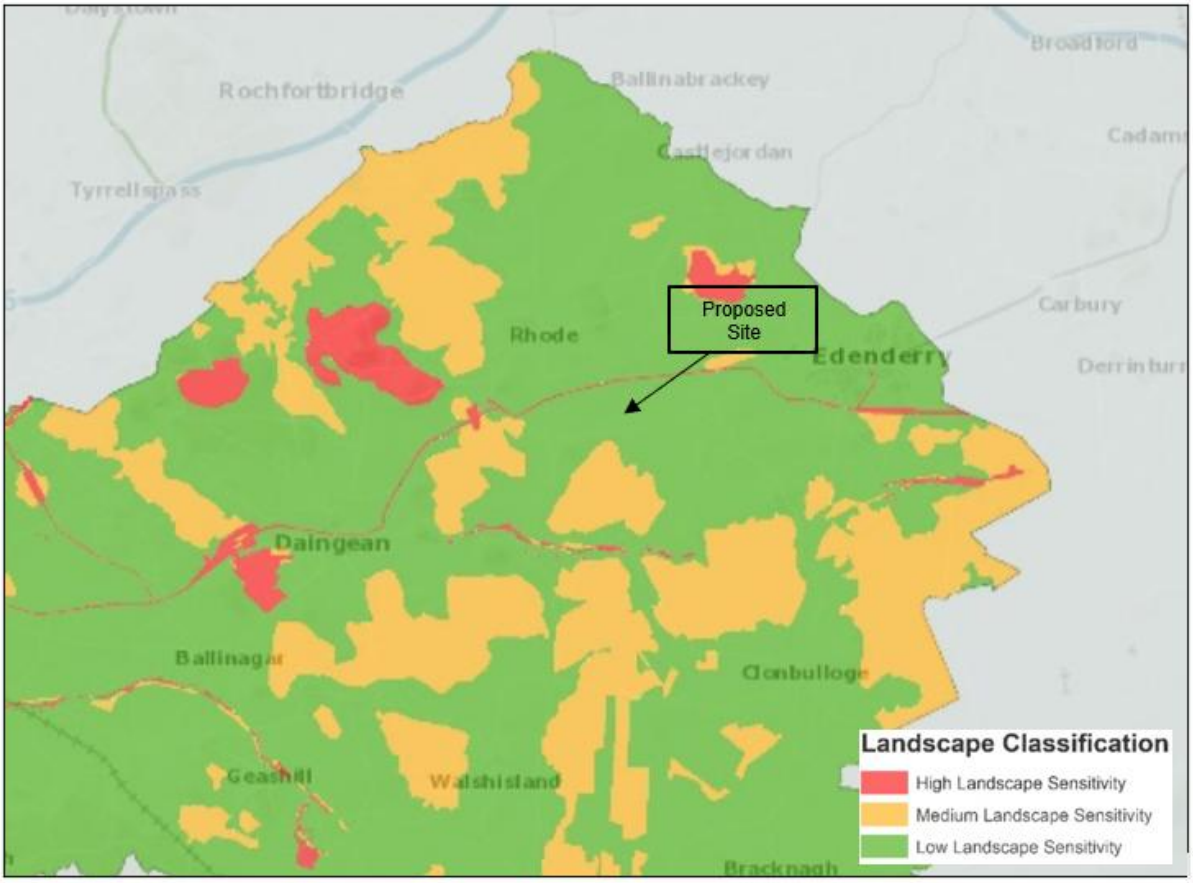

Figure 11-2: Landscape Sensitivity

The Offaly CDP 2021-2027 describes the Low Sensitivity Landscape 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'.*

> ***Characteristics:*** *County Offaly is largely a rural county which comprises of a predominantly flat and undulating agricultural landscape coupled with a peatland landscape. Field boundaries, particularly along roadside verges which are primarily composed of mature hedgerows typify the county's rural landscape.*
>
> Sensitivities: *These areas in general can absorb quite effectively, appropriately designed and located development in all categories (including: telecommunication masts and wind energy installations, afforestation, and agricultural structures).*
>
> *Within the rural areas, development shall be screened by appropriate natural boundaries that are sympathetic to the landscape generally, where possible.*
>
> *New housing proposed in rural areas should respect Offaly County Councils Rural Housing Design Guidelines, together with conformity with development standards.*
>
> Acceptability of Development for consideration: *A wide range of development subject to appropriateness/conditions.*
>
> Need for Landscaping and Appropriate Design: *High.*

Moderate sensitivity landscape is described in Offaly CDP 2021-2027 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.'*

Characteristics: *Cutaway bogs cover a large part of the landscape of Offaly and in their entirety, are approximately 42,000 hectares. Generally, there are a number of land uses suitable for cutaway bog, not included in High Sensitivity Areas, which include wilderness, grassland, forestry, and recreation. Some cutaway bog landscapes are more robust and may be considered for other uses.*

Sensitivities: *The development of Lough Boora (albeit designated as high sensitivity) acts as a prototype in the creation of parkland character.*

However, some of these cutaway bogs may be appropriate for other sensitively designed and located developments including renewable energy (wind farms, biomass crops) and/or industrial use.

The Council recognises the need for a land use framework plan for the future development and utilisation of large areas of cutaway bog within Offaly.

Acceptability of Development for consideration: *Some form of development subject to appropriateness/conditions.*

Need for Landscaping and Appropriate Design: *Very High.*

A number of "Areas of High Amenity" (AHA) are designated in County Offaly, with four out of thirteen located within the study area. These include the Grand Canal (2), Croghan Hill and its Environs (6), Rahenemore Bog (8), and Other Eskers (11). These AHAs are considered "*worthy of special protection and enhancement due to their uniqueness and scenic/amenity value,"* with the designation being *"additional to statutory national and European designations, which may overlap with these AHAs."* Regarding the Proposed Development, the Grand Canal corridor is the closest AHA, situated approximately 500m from the nearest proposed turbine.

Grand Canal

"The Offaly section of the Grand Canal comprises of some 70 kilometres from Edenderry to Shannon Harbour. It passes through the towns of Daingean and Tullamore and the village of Pollagh. The canal traverses large tracts of boglands and is bordered by hedgerows dating back 200 years and fringes of wild vegetation along the bank. The Grand Canal is a focus for a wide range of uses, especially for recreation and tourism purposes. The visual quality of the surrounding areas is intrinsic to maintain the attractiveness of the Grand Canal corridor. Hence, the corridor is especially sensitive to large development structures, insensitively designed or Sited housing and large-scale land uses such as extractive industries'."

Croghan Hill and its Environs

"The Council recognises the scenic quality and recreational value of the Croghan Hill area. Croghan Hill, Raheenmore Bog (which is a designated Nature Reserve under the Wildlife Act 2000, as amended) and Cannakill Deserted Medieval Village are the main elements of the Area of High Amenity. The Council, through its development management function, will seek to preserve the scenic amenity and recreational potential of this area and to protect it from development that would damage or diminish its overall attractiveness and character"

Raheenmore Bog

Raheenmore Bog developed in a small basin in the catchment of two major river systems i.e. the Brosna and the Boyne. It is situated about 5km from Daingean. The bog has a well-developed hummock and hollow system. Typical bog land birds that breed include Red Grouse and Snipe. Raheenmore Bog is a classic example of a midland raised bog and the deepest remaining in Ireland.

Eiscire Riada/Other Eskers

"The Eiscir Riada which traverses the north-western corner of County Offaly in a more or less continuous line from Shannonbridge to Clonmacnoise and on to Clara, Durrow, and Rahugh (County Westmeath), is worthy of conservation due to its geomorphologic, scientific, historical, recreational and amenity value and uniqueness. The

Council recognises the potential that the esker landscape in the north and northwest of the county has to be a UNESCO Geopark, to promote the unique geological heritage of the area."

11.3.3.1.1.1 Landscape Policies and Objectives

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

The Biodiversity and Landscape Policies of the Offaly County Development Plan 2021-2027 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.

Policies which are pertinent considerations in the assessment of the project are listed below when relating to amenity, landscape, and scenic designations (e.g. Landscape and Visual).

Landscape

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.

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

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.

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.

BLP-36 It is Council policy, to ensure that issues of scale, siting, design, and overall compatibility (including particular regard to environmental sensitivities) with a Site's location within an Area of High Amenity are of paramount importance when assessing any application for planning permission. The merits of each proposal will be examined on a case-by case basis.

Waterways, Lakes, and Wetland Landscapes

BLP-20 It is Council policy to preserve riparian buffer strips free from development by reserving a minimum of 10 metres either side of all watercourses (measured from top of bank) with the full extent of the protection determined on a case-by-case basis by the Council, based on Site specific characteristics and sensitivities.

BLP-23 It is Council policy to consider the Waterways Corridor Study 2002 and protect the recreational, educational and amenity potential of navigational and non-navigational waterways within the county, such as the Grand Canal Corridor, towpaths and adjacent wetland landscapes, taking into account more recent heritage and environmental legislation (including the SEA Directive) and environmental policy commitments.

In relation to BLP-23, the Waterways Corridor Study (WCS - 2002) has been reviewed this indicates that the Proposed Development falls outside of the two principle zones of consideration, which are the 'Canal Corridor' itself and the 'Area of Immediate Influence' out to the edge of the adjacent fields. As the nearest turbine is outside of the 'Area of Immediate Influence,' it is "not subject to the specific recommendations of this study."

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

Landscape

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.

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.
- 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.

Renewable Energy

CAEO-03 It is an objective of the Council to achieve a reasonable balance between responding to government policy on renewable energy and in enabling the wind energy resources of the county to be harnessed in an environmentally sustainable manner.

Wind Energy

CAEO-04 It is an objective of the Council to ensure the security of energy supply by supporting the potential of the wind energy (and other renewable) resources of the County in a manner that is consistent with proper planning and sustainable development of the area.

CAEO-05 It is an objective of the Council to implement the Council's Wind Energy Strategy as follows:

1. In 'Areas Deemed Open for Consideration for Wind Energy Development' as identified in Map No. 10 'Wind Energy Strategy Designations', the development of windfarms and smaller wind energy projects will be considered.

2. In all other areas, wind energy developments shall not normally be permitted – except as provided for under relevant exemption provisions in the Planning and Development Regulations 2001 (as amended).

3. Applications for re-powering (by replacing existing wind turbines) and extension of existing and permitted wind farms will be assessed on a case by case basis and will be subject to criteria listed in Development Management Standard 109 contained in Chapter 13 of Volume 1 of this County Development Plan and the Section 28 Ministerial Wind Energy Development Guidelines.

Peatlands

CAEO-07 It is an objective of the Council to ensure that renewable energy projects located on peatlands or in close proximity to peatlands do not negatively impact on any rehabilitation measures including enhanced rehabilitation measures (i.e. drain blocking and rewetting).

11.3.3.1.1.2 Offaly Wind Energy Strategy

A Wind Energy Strategy has been prepared for County Offaly, which forms part of the CDP 2021-2027. According to the Strategy, the Proposed Development is located within the Area 1 of potential wind energy areas. In Offaly CDP 2021-2027, this area is identified as '*Area generally north of Rhode - This area is characterised by significant tracts of peatlands and improved agricultural land to the north of the village and large landholdings. In addition, there exists a precedent of windfarm and renewable energy projects being deemed suitable while there exists both good wind speeds and electricity infrastructure in the area. There is sensitivity in relation to views of Croghan Hill to the north and west which can be mitigated by suitable layout minimising visual conflict or compromising this focal feature in the area by considering the clustering of turbines and adequate separation of turbines from the vista of Croghan Hill from Rhode village.'*

The Proposed Development is located within *'Areas Open for consideration for Wind Energy development.'* Within the Offaly CDP 2021-2027, this area is referred to in the following manner *'These areas are open for consideration for wind energy development as these areas are characterised by low housing densities, do not conflict with European or National designated Sites and have the ability by virtue of their landscape characteristics to absorb wind farm developments. Notwithstanding this designation, wind farm developments in these areas will be evaluated on a case-by-case basis subject to criteria listed in Development Management Standard 109 contained in* ***Chapter 13*** *of* ***Volume 1*** *of this County Development Plan and the Section 28 Wind Energy Development Guidelines'.*

The Wind Energy strategy included in the current County Development Plan overlays higher sensitivity areas, as well as the scenic views and routes in Map 8 of chapter 4 (see Figure 11-3).

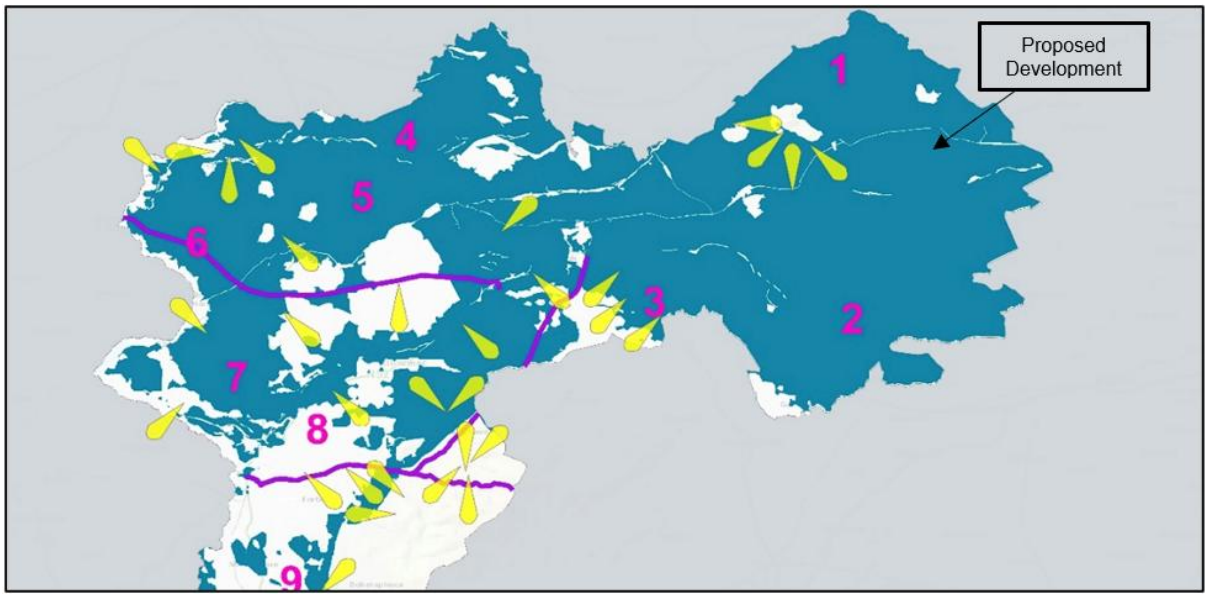

Figure 11-3: Offaly CDP 2021-2027 Wind Energy MAP with Views and Prospects

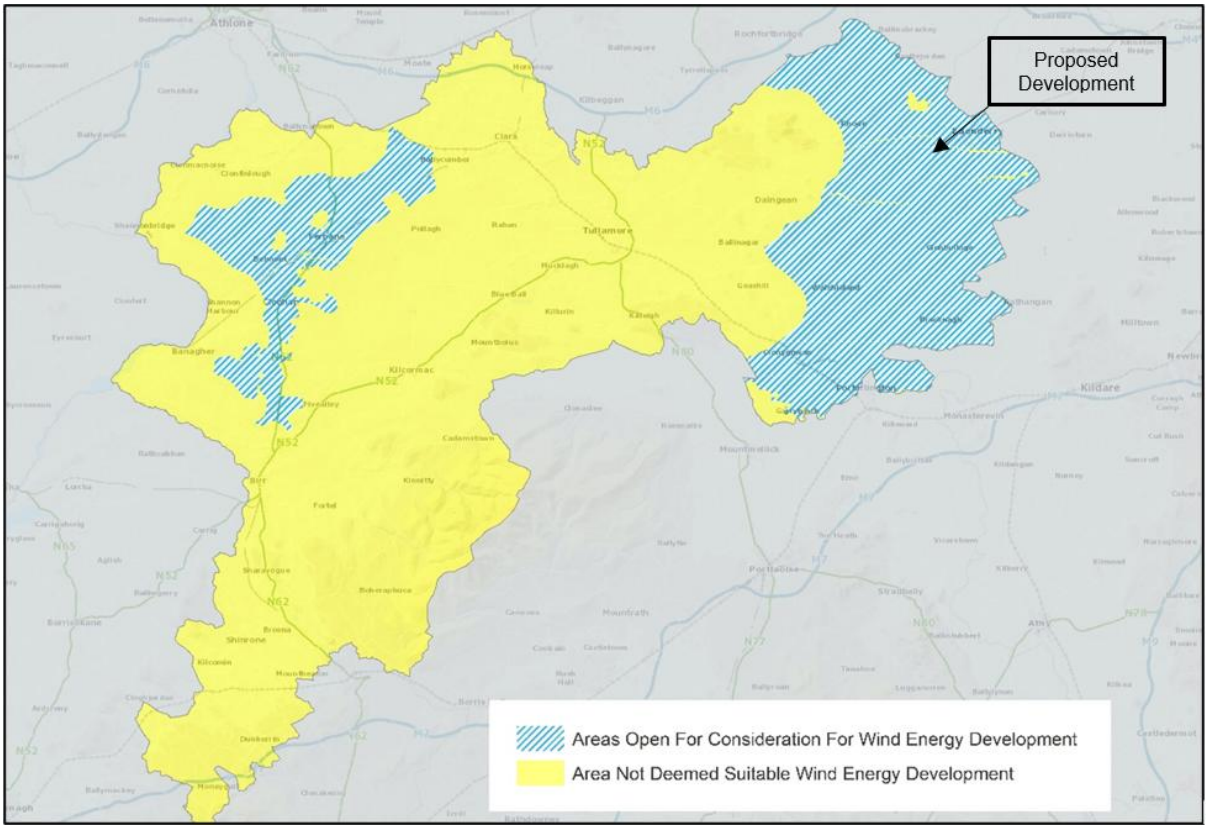

Figure 11-4: Offaly CDP 2021-2027 Wind Energy Zoning

11.3.3.1.2 Landscape and Wind Energy Policies of Surrounding Counties

Whilst the Proposed Development is wholly contained within County Offaly, there are four other counties contained within the outer study area (between 5km and 20km from the Site) These include.

- County Kildare (6.2km east).
- County Meath (6.7km northeast).
- County Westmeath (9.6km northwest).
- County Laois (14.5km south).

Although the proposed turbines might be visible from parts of these surrounding counties, it is not considered that they will be more than a discrete background feature in the context of the salient landscape character of even the nearest portions of these counties. They will, therefore, not significantly influence salient landscape character and their landscape and wind energy policies are not of the same relevance as the host county, Offaly. Scenic designations and other sensitive visual receptors within the surrounding counties of the study area will be considered below as part of the visual baseline but, the landscape designations and wind energy strategies of surrounding counties will not be considered further.

11.3.4 Visual Baseline

11.3.4.1 Zone of Theoretical Visibility (ZTV)

Only those parts of the Study Area that potentially afford views of the Proposed Development 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.

A computer-generated ZTV map has been prepared to illustrate where the Proposed Development 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 Proposed Development will not be visible, such as to retain a proportionate focus on locations where there is potential for visibility.

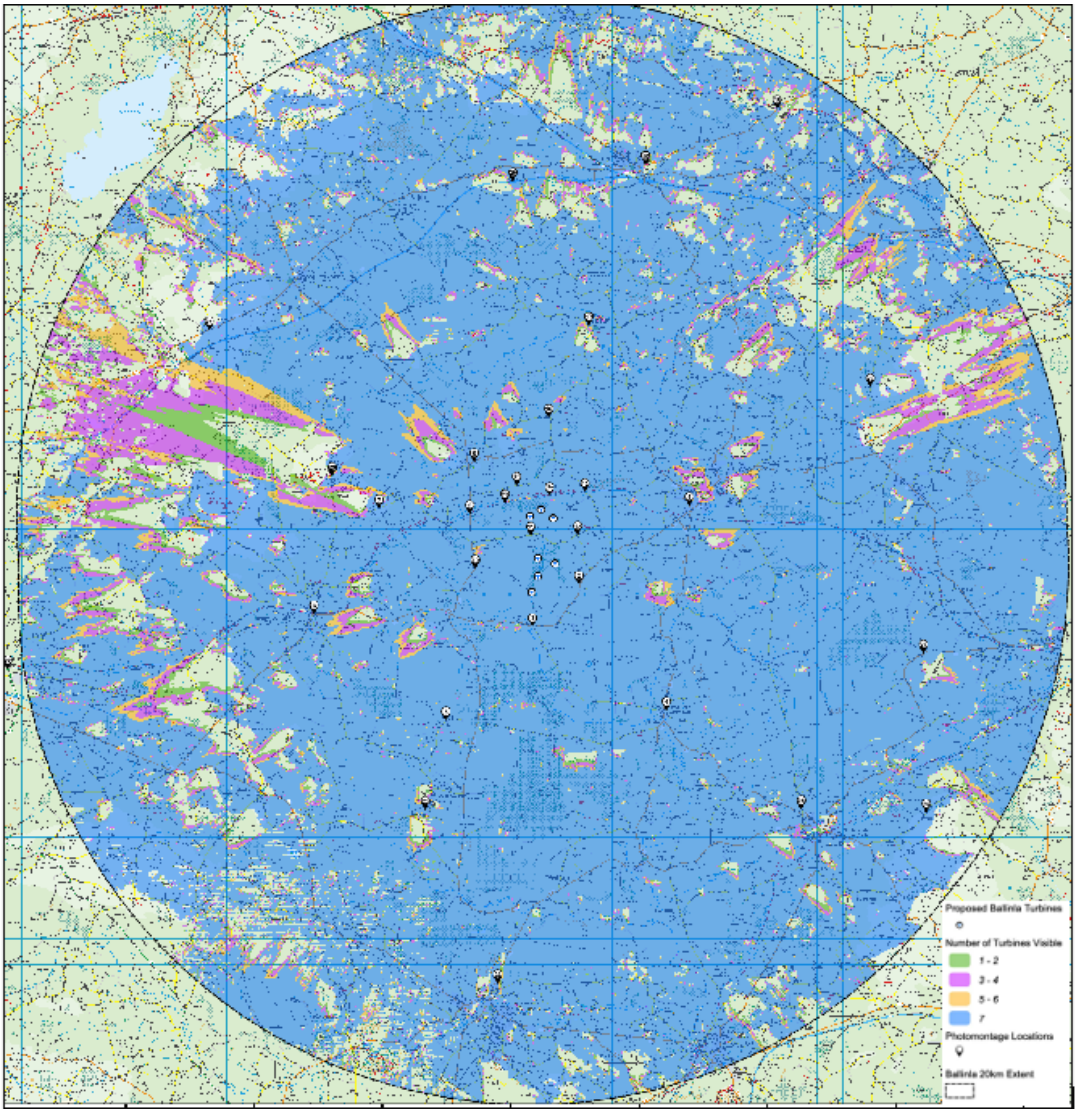

Figure 11-5: ZTV Mapping

The following key points are illustrated by the 'bare-ground' ZTV map.

- There is relatively consistent ZTV coverage with only a minor degree of sporadic pattern within 5km of the Site, as would be expected due to the relatively flat to undulating nature of the central study area.
- ZTV coverage becomes more sporadic beyond 10km of the Site, in most directions. This is particularly the case to the northeast, southeast, west, and northwest owing to intervening hills and high ground. This intermittent ZTV pattern at 10km to 20km from the Proposed Development indicates that turbine visibility is not afforded from all low-lying ground, and even from some higher ground, and is likely to be restricted to blades sets on the horizon, where intervening vegetation permits.
- In terms of settlements in the study area, Rhode, Edenderry, Portarlington, Ballingar, Daingean and Kinnegad experience theoretical visibility of all of the proposed turbines, while some of the settlements like Tyrrelpass, Allenwood, will experience partial theoretical visibility.

- Outside the central study area, nearly all of the Grand Canal corridor within the study area experiences theoretical visibility of all of the proposed turbines, as do the substantial sections of the M6 and M4, Dublin to Cork railway line and Bord na Móna railway line and numerous regional and local roads.

The most important point to reiterate with respect to this 'bare-ground' ZTV map is that it is theoretical. Any development, including wind energy developments, has the potential to be screened by intervening or surrounding vegetation (e.g., roadside hedgerows), as well as buildings, walls, and embankments in proximity to the viewer, resulting in a much lesser degree of actual visibility. For these reasons, the ZTV represents a worst-case scenario of what is already an entirely theoretical projection.

11.3.4.2 Route Screening Study

In addition to ZTV mapping, a Route Screening Assessment (RSA) Appendix 11-3, has also been undertaken from the roads within the near vicinity of the site out to approximately 3km from the site in all directions, which encompasses 51.6km of public roadway as well as the tow path of the Grand Canal between the R400 bridge to the northwest and Trimblestown Bridge to the northeast. The data capture is from a vehicle mounted 360-degree camera with shots taken every 10m, which are then correlated with equivalent wireframe images of the proposed development for final analysis. Visibility is divided into three categories.

- Open - these sections have uninterrupted views of some or all of the proposed development.
- Intermittent - these sections may have glimpses of some or all of the development through light vegetation or gaps between buildings and other man-made features.
- Fully Screened - these sections have no view of any part of the proposed development as a result of screening due to vegetation, forestry, buildings or any other non-landform based screening.

The results show that 60% of the road and canal network surveyed will be 'Fully Screened' from views of the proposed turbines. 'Intermittent' visibility accounts for 21% of the route network and 'Open' visibility 19%. The key point of these results is that the bare-ground ZTV maps cannot be relied upon to understand the extent of visibility within this flat and heavily vegetated lowland landscape.

As would be expected the main areas showing Open visibility are the closest routes to the Proposed Development being the Grand Canal tow path directly to the north of the Site and the local road that dissects the two clusters of the Proposed Development. Other small but notable sections of Open visibility occur on the flanks of slightly elevated ground to the northwest near Rhode village and to the west at Clonmeen. Otherwise, the pattern of visibility is relatively sporadic relating to localised vegetation containment.

11.3.4.3 Identification of Viewshed Reference Point (VRP or VP) as a basis for Visual Impact Assessment

The results of the ZTV analysis provide a basis for the selection of VRP's, which are the locations used to study the landscape and visual impact of the proposed wind farm in detail. It is not warranted to include every location that provides a view of the Proposed Development 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 was selected that are likely to provide views of the proposed wind farm from different distances, different angles, and different contexts.

The visual impact of a Proposed Development is assessed using up to 6 categories of receptor type as listed below:

- Key Views (from features of national or international importance) (KV).
- Designated Scenic Routes and Views (SR).
- Local Community views (LCV).

- Centres of Population (CP).
- Major Routes (MR).
- Amenity and heritage features (AH).

Where a VRP might have been initially selected for more than one reason it will be assessed according to the primary criterion for which it was chosen. The characteristics of each receptor type vary as does how the view is experienced. These are described below.

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 the 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 Proposed Development, usually within a 5km radius of the Proposed Development boundary. Although the VRPs are generally located on local level 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 Proposed Development. 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 level roads and rail lines and are relevant VRP locations due to the number of viewers potentially impacted by the Proposed Development. 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 Proposed Development, 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 importance to the archaeological or architectural heritage record.

11.3.4.4 Views of Recognised Scenic Value

Views of recognised scenic value are primarily indicated within CDPs in the context of scenic views/routes 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) contained in the Offaly CDP have been identified, and all of those that fall within the 20km Study Area have been identified in Table 11-8.

The number of these locations is numerous throughout the Study Area, and a critical analysis of these viewpoints was undertaken to determine their relevance to the assessment of visual effects. Where these fall outside the ZTV pattern, they have been discounted on the basis that the turbines have no potential to generate visual impacts. Those scenic designations that fall inside the ZTV pattern were investigated during fieldwork to determine whether actual views of the Proposed Development might be afforded. In some instances, the location offers limited potential for any visibility as a result of screening elements and is therefore not considered to be of relevance to the LVIA. In other instances, the primary aspect of view (identified in the Offaly CDP) of relevance to the scenic designation, orientates away from the proposals. Where this is the case, the impact on the scenic view is not considered to be of primary relevance and visual effects are structured around other VRPs which are considered representative. 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 impacts.

The analysis is presented in Table 11-8.

Table 11-8: Rational for selection of scenic designations within the Offaly CDP 2021-2027

Scenic View or Route Reference (CDP)	Relevance to Visual Impact Appraisal	Represented herein by VRP No.
Offaly CDP 2021-2027		
V7 - View to Slieve Bloom Mountains	**Not Relevant** – Scenic view oriented away from the project. (approx. 8km northwest)	-
V8 - Views towards Croghan Hill and bog lands.	**Relevant** – Elevated views oriented in the direction of the Site. Representative view has been selected. (approx. 8.6km southeast)	VP 29
V9 - Views South to bog lands	**Relevant** – Scenic view oriented away from the project, however Proposed Development in the periphery of the view, representative view has been selected (approx. 6.3km west)	VP 7
Kildare CDP 2023-2029		
GC 1 - Macartney's Bridge	**Not Relevant** – The ZTV shows potential for views, however main amenity aspect faces west of the Proposed Development and fully screened by canal side vegetation	-

Scenic View or Route Reference (CDP)	Relevance to Visual Impact Appraisal	Represented herein by VRP No.
GC 12- Bond Bridge	**Not Relevant** – The ZTV identifies potential for views, however, the Proposed Development is screened by canal side vegetation	-
GC 13 - Hamilton's Bridge	**Not Relevant** – The ZTV identifies potential for views, however, the project is screened by canal side vegetation	-
GC 14 - Ticknevin Bridge	**Not Relevant** – The ZTV identifies potential for views, however, the Proposed Development is screened by canal side vegetation	-
GC 17 - Skew Bridge	**Not Relevant** – The ZTV identifies potential for views, however, the Site is screened by canal side vegetation	-
GC 18 - Huband Bridge	**Not Relevant** – The ZTV identifies potential for views, though the Proposed Development is screened by canal side vegetation	-
GC 22 - Ballyteige Bridge	**Not Relevant** – The ZTV identifies potential for views, however, the Proposed Development is screened by canal side vegetation	-
GC 23 - Glenaree Bridge	**Not Relevant** – The ZTV identifies potential for views, however, the Site is screened by canal side vegetation	-
GC 26 - Ummeras bridge	**Not Relevant** – The ZTV identifies potential for views, however, the Proposed Development is screened by canal side vegetation	-
GC 28 - High bridge	**Not Relevant** – The ZTV identifies potential for views, however, the Proposed Development is screened by canal side vegetation	-
GC 36 - Shee Bridge	**Not Relevant** – The ZTV identifies potential for views, however, the Site is screened by canal side vegetation	-
GC 37 - Spencer Bridge	**Not Relevant** – The ZTV identifies potential for views, however, the Proposed Development is screened by canal side vegetation	-
RB 6 - Pass Bridge	**Not Relevant** – The ZTV identifies potential for views, however, the Proposed Development is screened by canal side vegetation	-
RB 8 - Baylough Bridge	**Not Relevant** – The ZTV identifies potential for views, however, the ZTV identifies potential for views, however, the Proposed Development is screened by canal side vegetation is screened by canal side vegetation	-
RB 10 - Monasterevin Bridge	**Not Relevant** – The ZTV identifies potential for views, however, the ZTV identifies potential for views, however, the Proposed Development is screened by canal side vegetation is screened by canal side vegetation	-
Scenic Routes		
08 - Views of Bogland Plains. the L3002 from Kilmoney crossroads to Feighcullen crossroads at Boston Hill.	**Relevant** – Elevated views oriented in the direction of the Site. Representative view has been selected.	VP 26

Scenic View or Route Reference (CDP)	Relevance to Visual Impact Appraisal	Represented herein by VRP No.
14 - Views to and from Dunmurry Hill and Red Hill and views of the Central Kildare Plains and Boglands on the R401 and adjoining roads from Thomastown crossroads to the Kildare Town Boundary.	**Not Relevant** – Scenic view is partially located within the ZTV and situated approx. 20km southeast of the proposed Site	-
16 - Views of the Chair of Kildare and views of the Central Kildare Plains and Boglands from the L7004 and L70061.	**Not Relevant** – Scenic view is located outside of ZTV visibility pattern.	
26 - Views from the county roads (L1005, L5019, L5018, L1006, L5017 and L5011) of Carbury Castle and Hill – Teelough road junction with the R402 and upland area at Mylerstown.	**Relevant** – Views oriented in the direction of the Site. Representative view has been selected.	VP 28
34 - Views of the Bog of Allen and the Hills of Allen, Grange, and Dunmurry along the R403 and R414 from Allenwood to Rathangan.	**Relevant** – Views oriented in the direction of the Site. Representative view has been selected.	VP 27
	Meath CDP 2021-2027	
54 - On R161 at Royal Canal	**Relevant –** Elevated views from bridge oriented in the direction of the Site. Representative view has been selected.	VP 18
56 - Along royal Canal at Boolykeagh	**Not Relevant -** While the ZTV identifies potential views towards the Site, this scenic route is approximately 20km northeast, with the main amenity aspect facing southeast and northwest towards the canal.	-
	Westmeath CDP 2021-2027	
13 - Panoramic views from Garrane Hill on the Regional Road R-446.	**Relevant -** Views oriented in the direction of the Site. Representative view has been selected.	VP 21
14 - Views of Sculpture along the M6.	**Relevant -** Views oriented in the direction of the Site. Representative view has been selected nearby.	VP 20

11.3.4.5 Centres of Population and Houses

Although the Study Area is predominantly rural in character, there are several small-medium size settlements spread throughout. The settlement at Rhode is located approximately 3km northwest of the nearest turbine, however with the exception of some crossroad settlements and notable linear clusters of residences, there are no other significant population centres within the central study area. Edenderry is the closest of the larger settlements and is located approximately 6km to the northeast of the nearest turbine. Portarlington is another larger rural service centre, which is located around 16km to the south of the Proposed Development.

Other settlements within the wider study area include:

County Offaly

- Geashill, approximately 13km southwest of the Proposed Wind Farm.
- Ballinagar, approximately 12.3km southwest of the Proposed Wind Farm.
- Daingean, approximately 8.6km west of the Proposed Wind Farm.

County Kildare

- Derrinturn, approximately 14km east of the Proposed Wind Farm.
- Ticknevin, approximately 13km southeast of the Proposed Wind Farm.

- Allenwood, approximately 19.3km southeast of the Proposed Wind Farm.
- Rathangan, approximately 13.8km southeast of the nearest turbine.

County Laois

- Portarlington, approximately 17.9km from the nearest turbine.

County Westmeath

- Rochfortbridge, approximately 12.7km northwest of the Proposed Wind Farm.
- Milltownpass, approximately 13.3km northwest of the Proposed Wind Farm.
- Kinnegad, approximately 14.2km northeast of the nearest turbine.

County Meath

- Clonard, approximately 15.8km northeast of the nearest turbine.

Outside of towns and villages, there is a relatively consistent network of local roads that are stocked with rural residential dwellings. There is a relatively dense concentration of rural dwellings and farmsteads lining the local roads that criss-cross the farmed landscape of the study area. In the Study Area where cutaway peatlands are prevalent, such areas tend to be very sparsely populated, and bog fringes are only lightly populated.

11.3.4.6 Transport Routes

The most notable transport routes in relation to the Proposed Development are the M6 and M4 motorways, which diverge from each other near Kinnegad around 14km to the north of the Site having been just the M4 in the outer north-eastern quadrant of the study area. The M6 continues to skirt around the outer north-western portion of the study area while the M4 continues northwest out of the study area beyond Kinnegad. Additionally, there is one national secondary road, the N52, which runs north from the M6 motorway around 15.5km northwest of the nearest turbine. In addition to these motorways and national roads, the main arterial routes through the study area are a series of regional roads connecting the rural service centres.

The regional roads that pass within 5km of the proposed turbine locations include:

- R441, approximately 2.5km north at its nearest point.
- R400 approximately 2.4km west at its nearest point.
- R402, approximately 1.2km south.

In addition to these regional routes, a network of local roads also criss-crosses the Study Area, with the nearest local road passing east-west between the northern and southern portions of the Proposed Development with potential for visibility of turbines to both the north and south.

11.3.4.7 Tourism, Recreation and Heritage Features

The most notable recreational amenity feature within the study area is the Grand Canal corridor which hosts the Grand Canal Way national waymarked trail. Other recreation and amenity features within the central study area include Clonmore riding Centre approximately 4.7km northeast, Rhode GAA club approximately 3.8km northwest, situated on the western outskirts of the settlement, and Mountlucas Windmills Loop Walk, approximately 3km southwest.

Apart from Grand Canal corridor, there are a number of other notable tourism and recreation features in the wider study area. These include the extinct volcano of Croghan Hill and its loop walking route from the Village of Croghan some 7.7km to northwest of the Site. The Royal Canal Way, and Barrow way are located approximately 17.8km and 14.6km to the north and southeast of the Proposed Development, respectively. The canal is a popular

recreational outlet for walking, cycling, fishing, and boating (i.e. cruisers), while the Barrow Way (waymarked trail)/ Barrow Blueway aligns its towpath.

Other tourism and amenities within the wider study area include:

- Blundell Castle approximately 6.6km east of the Proposed Wind Farm.
- Rahin woods approximately 11km northeast of the Proposed Wind Farm.
- Killinthomas Wood approximately 12.8km southeast of the Proposed Wind Farm.
- Derryounce Lakes and Walkways approximately 13.7km south of the Proposed Wind Farm.
- Lullymore Heritage and Discovery Park approximately 14.6km southeast of the Proposed Wind Farm.
- Garryhinch Forest Recreation Area approximately 18.7kmk southwest of the Proposed Wind Farm.
- Redhills Adventure Kildare approximately 19.7km southeast of the Proposed Wind Farm.

11.3.5 Selected Viewpoints

The VPs selected in this instance are set out in Table 11.9 and their location and orientation are shown on the Map in the photomontage booklet. They have all been selected based on the methodology and baseline presented herein and in accordance with relevant guidance and best practice.

Table 11-9: Outline Description of Selected Viewshed Reference Points (VRP)

VRP No.	Location	Distance to the nearest turbine	Representative of	Direction of View
VP1	View from Junction of Killane View & R441, on western outskirts of Edenderry	5.3km	MR, CP	W
VP2	View from Ballyfore GAA Club	1.2km	LCV, AH	NW-W
VP3	View from Junction of R402 & L1003	1.3km	LCV	N
VP4	View from Clonbullogue GAA Club	6.9km	AH	NW
VP5	View from Residences at Ballyhassan townland	6km	LCV	N
VP6	View from Amenity area and playground along Grand Canal, at Daingean	8.5km	AH	NE
VP7	View from Offaly Protected Scenic View VO9	5.8km	SV	E
VP8	View from Residences along R441 at Rhode	3km	MR, LCV	SE
VP9	View from Rhode Bridge over Grand Canal	2.3km	MR, AH	E-SE
VP10	View from R400 west of Site	2.4km	MR, LCV	E-NE
VP11	View from L5010 at Leitrim townland	0.7km	LCV	N-S
VP12	View from L5010 at Lumville townland	1.1km	LCV	NW-W

VRP No.	Location	Distance to the nearest turbine	Representative of	Direction of View
VP13	View from Trimblestown Bridge over Grand Canal	1.6km	LCV	SW
VP14A	View from Grand Canal Way, north of Site	0.6km	LCV	S-SW
VP14B	View from Grand Canal Way, north of Site	1.1km	AH	S
VP15	View from Residences at Ballybrittan townland, north of Site	1.3km	LCV	S
VP16	View from Residences at Ballyheashill townland	3.6km	LCV	S
VP17	View from Castlejordan graveyard	7.4km	AH	SW
VP18	View from County Meath Protected View No. 54 'On R161 at Royal Canal'	18.1km	SV	SW
VP19	View from R161 over Kinnegad River, on eastern outskirts of Kinnegad	14km	CP, MR	SW
VP20	View from overpass on M6	12.8km	MR	S
VP21	View from R446 at Westmeath Protected View No. 13	14.4km	SV	SE
VP22	View from N52 bridge over Grand Canal on eastern outskirts of Tullamore	20.6km	MR, CP	NE
VP23	View from Walsh Island GAA Club	9.4km	AH	NE
VP24	View from Crann Nua residential development, Portarlington	15.3km	AH, CP	N
VP25	View from St. Patrick's Graveyard, Rathangan	13.4km	AH	NW
VP26	View from Kildare Scenic Route No. 8 at Boston Hill	17.4km	AH, SV	NW
VP27	View from Kildare Scenic Route No. 34 at Lullymore	14.7km	SV, MR	NW
VP28	View from Kildare Scenic Route No. 26	13.3km	SV	SW
VP 29	View from Croghan Hill	7.8km	AH	SE

11.3.6 Sensitivity of the Landscape

Landscape value and sensitivity are considered in relation to a number of factors highlighted in the Guidelines for Landscape and Visual Impact Assessment 2013, which are set out below and discussed relative to the Proposed Development and the wider Study Area.

Central Study Area (<5km)

The Site and central study area is part of a typical midlands mosaic of peatland, cutaway peatland, marginal and improved farmland, forestry, and wind energy development. This mosaic is largely dictated by the ranging drainage characteristics with the poorly drained areas of bogs and their surrounds hosting the marginally productive land uses and those intervening areas of better drained soils hosting lush farmland. The improved farmland areas are also where the rural population tends to reside and move around on the local and regional road network.

As a distinctive feature of the central study area, the Grand Canal runs in an east west direction to the north of the Proposed Wind Farm and is located approximately 500m from the nearest turbine. It is classified as an area of 'high sensitivity' within the Offaly CDP 2021-2027. However, the character and values associated with the canal corridor are strongly confined to the canal and its associated towpaths, which are generally bordered by canal side vegetation. Although tranquil and with some degree of natural character, they are not particularly sensitive landscape features beyond their immediate setting, and they were originally constructed in the spirit of industry to support the midlands rural economy. There is not a notably high concentration of built heritage features or demesne landscapes within the central study area and where these do occur, they do not strongly contribute to the prevailing landscape character.

In terms of landscape designations, the Proposed Development is situated within a Low sensitivity landscape except for one turbine which is situated within a medium sensitivity landscape as per the Offaly CDP 2021-2027. Apart from Grand Canal corridor, there are two areas of High sensitivity landscapes, identified as Black Castle bog and Croghan Hill, located approximately 3.4km northeast and 7.7km northwest, respectively of the Proposed Development.

In relation to the wind energy potential, the Proposed Development is situated within Area 1 – Area generally north of Rhode which is Deemed 'Open for consideration for wind energy development' in Offaly CDP 2021-2027.

The proposed development is located within a robust, rural, and highly modified landscape, which is classified as having the 'ability to accommodate' developments. It is important to note that several wind farms already exist near the Proposed Development, the closest being approximately 2km southeast of the nearest turbine and contribute to the prevailing landscape character of the central study area.

In summary, it is considered that aside from some isolated landscape features, which are considered to be in the higher ranges of sensitivity, the vast majority of the study area has a landscape sensitivity that is no greater than that of the Medium – low.

Wider Study Area (>5km)

In terms of the Wider Study Area, many of the points raised in relation to the Central Study Area are considered to remain relevant. Whilst it encompasses a diverse range of landscape features and characteristics, the landscape remains a rural, working, inhabited landscape that is underpinned by typical rural land uses, and which displays extensive signs of human influence, including major road corridors such as the M6, M4 and N52, as well as the urban areas of Edenderry, and Portarlington.

Again, much of this wider landscape is classified as 'Low Landscape Sensitivity' and plays host to large-scale wind energy development. Like the Central Study Area, the Wider Study Area contains areas designated as AHA, and classified as having 'High landscape sensitivity' within the Offaly CDP 2021 - 2027, again reflecting a comparatively high sensitivity as a result of their geomorphologic, scientific, historical, cultural, recreational and amenity value and uniqueness. In addition to the Grand Canal Corridor and Eskers, this includes the landscape of Croghan Hill, and Black Castle Bog. Whilst these areas of the landscape are recognised for their inherent amenity values, they are influenced by a wider landscape that is extensively influenced by anthropogenic land uses and existing wind energy development.

On balance of the reasons outlined above, whilst the landscape associated with Croghan Hill, the Grand Canal Corridor are considered to have a comparatively high landscape sensitivity (High-Medium) as a result of their comparative scenic, recreational, and heritage values, the landscape sensitivity of the Wider Study Area is deemed to retain an underlying Medium-Low sensitivity

11.3.7 Sensitivity of Visual Receptors

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 assessor uses a range of criteria to analyse how strongly the viewer/view is associated with each of the criterion identified in Section 11.2.7 of this chapter.

11.3.7.1 Sensitivity of Designated Scenic Routes and Views (SR/SV)

Due to the diverse nature of the landscape within the study area, which includes numerous notable features, there are many scenic routes and views within the 20km study area. The most relevant scenic routes to the Proposed Development are those located nearest to it, as they have the greatest potential to offer clear views of the proposed turbines. As identified in the visual baseline, the viewpoints relevant to the project are VP7, VP18, VP21, VP26, VP27, and VP28. While many of these viewpoints also represent other receptors, their primary relevance in this assessment lies in their scenic designation as outlined in the relevant County Development Plan.

In Co. Offaly, other scenic designations include VP7, VP26, VP27, and VP28, which offer views of boglands and more localised, low-lying ground. Viewpoints VP18 and VP21 provide views from major routes, representing the local community along these roads as the primary receptors. These roads are characterised by a consistent sense of remoteness and/or tranquillity typical of rural areas.

Overall, the views are not particularly rare or unique, and they do not feature striking or noteworthy landscape features, except for VP29 at Croghan Hill. Therefore, VP7, VP18, VP20, VP21, VP26, VP27, and VP28 are generally considered to have High-medium sensitivity.

11.3.7.2 Sensitivity of 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 approximately 5km of the Proposed Development Site. 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 for this assessment within the study area include VP2, VP3, VP8, VP10, VP11, VP12, VP13, VP14a, VP14b, VP15, and VP16.

The Local Community views tend to be across a typical midlands rural landscape and are often contained at relatively short distances by surrounding vegetation. Whilst they are valued at a local level by local residents, they are not rare or distinctive and are not highly valued in the context of the broader population in the manner that scenic designations in a county development plan are, for example. However, it is acknowledged that residents at home are susceptible to changes in their localised views even in productive rural areas already characterised by wind energy development. On balance of these value and susceptibility considerations Local Community receptors are generally considered to have Medium-low visual receptor sensitivity subject to specific amenity considerations at each VP locations.

11.3.7.3 Sensitivity of Centres of Population (CP).

Four viewpoints were selected to represent population centres within the central and wider study area (VP1, VP19, VP22, VP24). Population centres are generally considered to have mid to low levels of visual receptor

sensitivity because they are built-up environments where visual change is more common and less impactful. One of the viewpoints, VP1, is located on the outskirts of Edenderry and addresses local community features within the central study area. The other viewpoints (VP19, VP22, and VP24) are situated near Kinnegad, Tullamore, and Portarlington, respectively. Additionally, VP19 and VP22 represent major routes.

Considering the busy, built settings of these viewpoints and the presence of various amenity features, the visual sensitivity of these locations is generally deemed to be Medium-low.

11.3.7.4 Sensitivity of Major Routes (MR).

These include national and regional level roads and rail lines and are relevant VRP locations due to the number of viewers potentially impacted by the Proposed Development. Major routes typically provide views experienced whilst in motion and these may be fleeting and intermittent depending on screening by intervening vegetation or buildings.

Eight viewpoints were selected primarily to represent major routes. These are VP1, VP8, VP9, VP10, VP19, VP20, VP22, and VP27.

VP8 is located near the settlement of Rhode on the R441, VP9 is situated on Rhode Bridge along the R400, with VP10 also on the R400 a little distance away from VP9. VP19 is positioned on the R161, also representing the population centre at Kinnegad, while VP20 is taken from an overhead bridge on the M6. VP21, located on the R446, also represents a designated scenic view, and VP22 is positioned along the national road N52. While VP27 is located on the R414.

Overall, the viewpoints feature a high number of viewers but have limited amenity, resulting in a sensitivity of generally Medium-Low.

11.3.7.5 Sensitivity of Amenity and heritage features (AH)

A number of heritage and amenity features are included in the views addressed above, in particular within the scenic designations (VP26) and Centres of Population (24), Major Routes (VP9), Local community views (VP2). The remaining views are focused along amenity and heritage features within the study area. These include VP4, VP6, VP14a, VP14b, VP17, VP23, VP25 and VP29. Each of these has a moderate level of amenity and factors increasing viewer numbers or sensitivity. Depending on specific amenity considerations, receptor sensitivity ranges between High-medium and Medium-low and notable the Grand Canal Views are generally considered to be at the higher end of this spectrum.

Viewpoint 29, located at Croghan Hill, is considered to have High sensitivity. Croghan Hill is the remnant of an extinct volcano and the Site of an ancient burial ground. The combined natural and historical value of Croghan Hill, resulting in the designation of this location as having High sensitivity.

11.4 Assessment of Landscape Impacts and Effects

11.4.1 Construction Phase

It is considered that the Development will have a modest physical effect on the landscape within the wind farm Site, with land disturbance being localised and relatively limited. Disturbance to existing vegetation to accommodate the TDR, and the required access tracks and turbine hardstand areas will largely relate to vegetation that is not readily discernible from locations beyond the immediate locality.

Whilst there will be changes to topography through excavation, stockpiling, the creation of temporary hardstand areas, and other features, these works are temporary and small scale being localised to the immediate locality of

the turbines and access tracks. It is noted that the finalised internal access track layout has been designed to avoid environmental constraints and follow the natural contours of the land wherever possible reducing the extent of 'cut and fill.' Excavations will tie into existing ground levels and will be the minimum required for efficient working. Any temporary excavations or stockpiles of material will be regraded to match surrounding levels and reseeded appropriately in conjunction with advice from the Project ecologist.

There will be an intensity of construction phase activity associated with the access tracks and turbine hardstands consisting of the movement of heavy machinery and materials, but this will be temporary/short-term in duration as well as being dispersed between the two turbine clusters.

The proposed 110kV substation, including associated buildings and security fencing will be part of the construction of the northern cluster, set back from the local road, construction undertaken in the same construction duration/period of the wind farm. The substation buildings will rise to a height of 8.66m and will be constructed of plastered blockwork. There will be vegetation removal and site levelling required at the substation location, but not to the extent that material need to be imported or exported from site for construction purposes. The site is relatively enclosed by existing vegetation and will not be a prominent feature within the surrounding landscape context.

The 8km of underground cabling associated with the Proposed Grid Connection is from the proposed wind farm south along the public roads to the existing Philipstown 110kV substation to the southeast and opposite the Edenderry Power Station. Construction stage of the underground grid cabling will be under the road surface and will present as typical, transient, and temporary road works that only impact on already modified ground (the road).

All Wind Farm Internal Cabling will be underground and will run under access tracks or within their verges without the need for trenching through open ground. Indeed, the land cover of the Site will only be interrupted as necessary to build the structures of the Proposed Development and to provide access. Impacts from land disturbance and vegetation loss at the Site are considered to be modest in the context of this landscape setting that is influenced by an array of working rural land uses.

Felling of commercial conifer forestry is required within and around wind farm infrastructure to accommodate the construction of four turbine foundations, and associated hardstands, access tracks, turbine assembly, substation, grid connection and deposition area. It is proposed to fell around turbines as a mitigation for bats and to facilitate construction. A *circa* 5m distance on either side of access tracks will be felled to facilitate construction. Overall felling of approximately 21ha of forestry will be required. Although out of sequence with the originally planned forest rotation and felling regime, commercial forests are all destined for felling, so the impact is a temporal one rather than an unexpected physical one. The extent of commercial forest felling is also modest in the context of the overall wind farm site area. In accordance with the Forestry Act 2014, the full extent of commercial forestry loss will be replanted at an alternative site, yet to be determined but subject to 'afforestation licencing'.

Whilst there will be some long-term/permanent construction phase effects on the physical landscape, these are localised in extent. Excepting some residually useful access tracks, all other development features will be removed from the Site, and the land reinstated/restored. As such, the construction phase landscape effects of the development are substantially reversible at decommissioning.

In terms of impacts on landscape character during construction, the erection of the proposed turbines, and the associated activity and movement associated with tall lifting plant, would introduce additional vertical features into views. As per the construction programme outlined in Chapter 2, construction-related activity will be short-term in nature (in accordance with the EPA definition of impact duration) and will cease once the Proposed Development becomes fully operational. Whilst these activities will generate temporarily heightened visual

effects, their influence on perceived landscape character is considered 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 have the potential to impact landscape character at a localised level. Works associated with the Proposed TDR, infrastructure foundations, wind farm underground cable installation, groundworks (including the excavation, stockpiling, deposition, and reinstatement of site-won material), will contrast the underlying agrarian characteristics of the landscape. These works are short term, and temporary in nature and localised in extent. The effects would cease as soon as the turbines have been erected and become operational.

The magnitude of landscape impact in relation to these activities at the construction phase is deemed to be of a High-medium magnitude within the Proposed Development Site and its immediate surrounds, which when combined with a Medium-Low sensitivity, results in a significance of landscape effect of **Moderate**, which will be of a **Negative** quality. Even though the sensitivity of distinct landscape features such as the Grand Canal and Croghan Hill, which lie beyond the immediate context of the Site, have higher sensitivity, the magnitude of impact reduces with increasing distance, broader context, and screening of ground-based construction activity. Consequently, the significance of construction phase landscape effect is not considered to be greater for these landscape receptors.

It is not considered that the Proposed Development will generate significant effects to landscape character at the construction phase.

11.4.2 Operational Phase

For most commercial wind energy developments, the greatest potential for landscape impacts occurs 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 defining element of that landscape character.

In this instance, wind turbines are a familiar and characteristic feature of the central study area and wider study Area, with existing wind turbines associated with the Mount Lucas, and Cloncreen Wind Farms covering the landscape a short distance to the southwest and southeast respectively and with turbines from the Yellow River and Cushaling Wind Farms slightly further away to the north and southeast respectively. Effects are therefore generated primarily as a result of the introduction of additional turbines to this wider wind farm context.

In terms of scale, the large-scale nature of the surrounding landscape context, and the scale of the nearby turbines, help to assimilate the Proposed Development. In terms of function, the landscape has a utilitarian character due to the presence of working rural land uses such as agriculture, forestry, peat extraction, rural industry (Liffey Mills) and wind energy development. Although the Proposed Development inherently represents a stronger human presence and level of built development than currently for the Site and its immediate surrounds, it associates directly with the neighbouring wind farm context and will not detract significantly from the rural working character of this landscape.

Although the Proposed Development will influence the scenic properties of the landscape, the turbines will generally be seen as part of the wider wind farm context. The spacing afforded between the turbines will maintain a high degree of visual permeability to ensure that visual relationships with the wider landscape will remain available, and the underlying features and characteristics of the landscape will be retained. In this respect the

Proposed Wind Farm represents a supplementary vertical land use that does not unduly interfere with the ground plane rural productivity of the Site and its surrounds.

In summary, there will be physical impacts on the land cover of the Site as a result of the Proposed Development during the operational phase, but these will be relatively minor in the context of this working, rural landscape, that includes extensive areas of agricultural land, peatland, forestry, and commercial wind farms. The scale of the Proposed Development will be well assimilated within its landscape context without undue conflicts of scale with underlying landform and land use patterns.

The influence of the proposed turbines on landscape character will inherently be most notable at the immediate landscape level, where their scale and form have the potential to generate considerable change to the character of the landscape. However, the degree to which the proposed turbines will influence landscape character is moderated by the other wind farms within 10km, and despite the proposed turbines having a marginally greater height, the influence this will have on landscape character will be modest, given the scale of the underlying landscape. With distance the comparative influence of the Proposed Development reduces.

Within the Central Study Area and in relation to the Site and its immediate environs (within approximately 1km), the magnitude of change to landscape character is deemed to be **Medium**. When combined with a **Medium-Low** sensitivity, the level of landscape effect is considered **Moderate-Slight**. Beyond this distance, the magnitude of change to landscape character will reduce to **Medium-Low** for the remainder of the Central Study Area. When combined with a **Medium-Low** sensitivity, the resulting level of landscape effect is deemed **Slight** tending to **Slight-Imperceptible**. In areas such as the Grand Canal Corridor, where the sensitivity was assessed as being **High-Medium** as a result of its comparative scenic, recreational, and heritage values, the level of indirect effect is considered to be **Moderate** for the small section contained within 1km of the Site and **Moderate-slight** thereafter as intervisibility becomes increasingly limited by canal-side screening. The quality of the landscape effects is deemed **Negative**, and the duration of the impact is **long-term**.

Beyond the Central Study Area (5km from the Site) the addition of the turbines in the context of other neighbouring wind farms is not considered to generate any notable indirect influence on perceived landscape character. Whilst the proposed turbines may be visible and contribute to a marginal increase in the intensity of wind turbines in part of a view, which in turn may marginally influence scenic values, this change would be difficult to discern in the context of wider views and would not notably alter perceived character. The magnitude of change to landscape character will reduce to **Low** and **Low-negligible** with increasing distance from the Proposed Development, as the Proposed Wind Farm becomes a proportionately smaller and less distinct component of the overall landscape fabric, and other features and characteristics (such as other wind farms) prevail in their influence on character. When combined with a **Medium-low** sensitivity, the resulting level of landscape effect is deemed **Slight**. In terms of the landscape character of Croghan Hill, Raheenmore Bog, and the Grand Canal Corridor, where the sensitivity was assessed as being **High-Medium** as a result of its comparative scenic, recreational, and heritage values, the level of indirect effect is assessed as no greater than **Slight**, again reducing with distance.

The quality of the landscape effects would remain **Negative**, albeit it is considered that at distances over approximately 15km, the effect of the proposed turbines on perceived landscape character would be so negligible, that effects would be **Neutral** in their quality. The duration of the effects is considered **long-term**.

It is important to note that in terms of duration, the Proposed Development represents a long-term (but not permanent) impact on the landscape and is reversible. The operational lifespan of the project is 35 years, after which time it will be dismantled and the landscape reinstated to prevailing conditions.

11.4.3 Demolition or Decommissioning Phase

With the potential exception of access tracks that may be left in situ for use by landowners and the substation and grid cabling which will form part of the established grid network, the decommissioning phase will see the removal of all turbines and associated infrastructure, with areas of hard standing that are of no further use reinstated and reseeded to blend with the prevailing surrounding land cover. The below-ground concrete associated with turbine bases will not be removed as this would generate potentially greater environmental effects than leaving it in-situ under the prevailing land cover.

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

The decommissioning phase will have similar effects as the construction phase primarily as a result of the removal of turbines and the movement of large turbine components. There may be a minor disturbance to roadside and trackside vegetation that has grown during the operational phase, and temporary stockpiling of material, albeit these aspects would be temporary and readily reinstated.

As with construction phase effects, decommissioning phase effects are deemed to be at most **Moderate** and **Negative**, but this is **temporary** effect that is not considered to be significant in EIA terms.

11.5 Assessment of Visual Impacts and Effects

11.5.1 Construction Phase

During construction, the most notable visual effects will result from the erection of the proposed turbines, with lifting plant introducing additional vertical features into views. As per the construction programme outlined in **Chapter 2**, construction-related activity will be short-term in nature (in accordance with the EPA definition of impact duration) and will cease once the development becomes fully operational.

The visual effects generated by the activity associated with the erection of the turbines are considered in the context of their temporary 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 is likely to be discernible, and will generate a modest impact on visual amenity, albeit views are already influenced by wind turbines within the surrounding area. For visual receptors within the Central Study Area, the magnitude of visual impact at the construction phase is deemed to be **High-medium**. When combined with a generally **Medium-low** receptor sensitivity, the level of visual effect will be no greater than **Moderate**. Even though the sensitivity of Visual receptors on the Grand Canal and Croghan Hill, have higher sensitivity, the magnitude of impact reduces with increasing distance, broader context, and screening of ground-based construction activity. Consequently, the significance of construction phase visual effects is not considered to be greater for these visual receptors.

For visual receptors in the Wider Study Area, the ground-based activity associated with the turbine construction is unlikely to notably influence the visual amenity of any given view, given that this activity would be difficult to discern at distance and due to intervening screening. When combined with a generally **Medium** or **Medium-low** sensitivity (High at Croghan Hill), the level of visual effect will be no greater than **Slight**.

It is not considered that the Proposed Development will generate significant visual effects at the construction phase.

11.5.2 Operational Phase

In the interests of brevity and so that this chapter remains focussed on the outcome of the visual assessment (rather than a full documentation of it), the visual impact assessment at each of the 29 selected representative viewpoint locations has been placed into Technical Appendix 11-1, and this section should be read in conjunction with this chapter.

Reference should also be made to the associated photomontage set contained in a separate booklet accompanying the EIAR. A summary table (Table 11-10) collates the assessment of visual impacts. A discussion of the results is provided thereafter.

Table 11-10: Summary of Operational Phase Visual Impact Assessment from representative VPs[1]

VP No.	Distance to Nearest Turbine	Visual Receptor Sensitivity	Magnitude of Visual Impact	Significance/Quality/Duration of Impact	Significance of Effect
VP1	5.33km	Medium low	Low	Slight/Negative/Long-term	**Not Significant**
VP2	1.22km	Medium low	High-medium	Moderate/Negative/Long-term	**Not Significant**
VP3	1.32km	Medium-low	Medium	Moderate-slight/Negative/Long-term	**Not Significant**
VP4	6.98km	Medium low	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**
VP5	6.0km	Medium low	Low	Slight/Negative/Long-term	**Not Significant**
VP6	8.52km	Medium	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**
VP7	5.88km	High-medium	Medium-low	Moderate/Negative/Long-term	**Not Significant**
VP8	3.06km	Medium-low	Low	Slight/Negative/Long-term	**Not Significant**
VP9	2.34km	Medium	Low	Slight/Negative/Long-term	**Not Significant**
VP10	2.39km	Medium-low	Medium	Moderate-slight/Negative/Long-term	**Not Significant**
VP11	730m	Medium-low	High	Substantial-moderate/Negative/Long-term	**Not Significant**
VP12	1.14km	Medium-low	High-medium	Moderate/Negative/Long-term	**Not Significant**
VP13	1.63km	High-medium	Medium-low	Moderate-slight/Negative/Long-term	**Not Significant**
VP14a	0.65km	High-medium	High-medium	Substantial-moderate/Negative/Long-term	**Not Significant**
VP14b	1.12km	High-medium	Medium	Moderate/Negative/Long-term	
VP15	1.33km	Medium-low	High-medium	Moderate/Negative/Long-term	**Not Significant**
VP16	3.63km	Medium-low	Medium-low	Moderate-slight/Negative/Long-term	**Not Significant**
VP17	7.45km	Medium low	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**

[1] Refer to Appendix 11.1

VP No.	Distance to Nearest Turbine	Visual Receptor Sensitivity	Magnitude of Visual Impact	Significance/Quality/Duration of Impact	Significance of Effect
VP18	18.17km	Medium low	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**
VP19	14.09km	Medium low	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**
VP20	12.89km	Medium low	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**
VP21	14.46km	High-medium	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**
VP22	20.62km	Medium low	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**
VP23	9.43km	Medium low	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**
VP24	15.3km	Medium low	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**
VP25	13.48km	Medium low	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**
VP26	17.42km	High-medium	Low-negligible	Slight/Negative/Long-term	**Not Significant**
VP27	14.77km	Medium	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**
VP28	13.39km	Medium	Negligible	Imperceptible/Neutral/Long-term	**Not Significant**
VP29	7.87km	High	Low	Moderate-slight/Negative/Long-term	**Not Significant**

The significance of visual impacts is a function of visual receptor sensitivity and visual impact magnitude, determined through professional judgement as informed by the significance matrix in Table 11-5. Visual impacts are summarised below by receptor type.

11.5.3 Visual Impacts on Designated Scenic Views/Routes

All of the designated scenic routes and views that fall inside the ZTV pattern were investigated in the baseline assessment and during fieldwork to determine whether actual views of the Proposed Development might be afforded. As identified in the visual baseline, the designated viewpoints relevant to the project are represented by VP7, VP18, VP21, VP26, VP27, and VP28 herein. While many of these viewpoints also represent other receptors, their primary relevance and sensitivity lies in their scenic designation as outlined in the relevant CDP.

Except for VP7 and VP26, all of these designated viewpoints experienced Imperceptible visual effects due to the degree of inherent vegetative screening between the VP location and the Proposed Development with many being from the outer reaches of the study area. In such instances, the VP selection can be deemed as 'Illustrative' in relation the GLVIA3 (2013) Guidance as the illustrate the absence of an effect at an import receptor. VP26 from over 17km away to the southeast was afforded clear views of the turbines, but on the basis of the vast extent of the view and a productive lowland context that include numerous other existing turbines, the overall effect was deemed to be Slight.

Viewpoint VP7 experienced the highest level of effect out of the designated view category with a Moderate significance attributed on balance of a High-medium sensitivity and a Medium-low magnitude of impact. At this

elevated location near Croghan Hill, the proposed turbines are seen within the context of the lowland plains tapestry of farmland and peatland to the fore and to the east of the other existing turbines. They will generate some clutter with the more distant wind farms, however, the scale differential between the respective turbines accentuates the vastness of the plains and aids legibility.

There is not considered to be any significant effects from the Proposed Development at any designated scenic routes and views.

11.5.4 Visual Impacts on Local Community Receptors

In total, of the 29 viewpoints assessed as part of this LVIA, nine (VP2, VP3, VP8, VP10, VP11, VP12, VP13, VP15, and VP16) were selected as being relevant to a consideration of visual effects in relation to the local community. This category of visual receptor represents individuals who live, work, and move around within approximately 5km of the Proposed Development. These people are most likely to experience changes in their day-to-day 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 sensitivity was generally assessed as Medium-low for these receptors, this reflecting typical views influenced by a combination of the surrounding working landscape, and wind energy development. It also reflects a balance between the limited and localised value of afforded views against the generally higher susceptibility of residents at home.

The highest significance of effect for this category of receptor was deemed to be Substantial-moderate, the overall significance of the effect is just below the threshold of a significant effect in the context of this assessment. It occurs at VP11 and VP12 which are both contained on the local road that dissects the two turbine clusters and are therefore afforded views of turbines to either side of the road and where there is some sense of being surrounded by turbines at close quarters. Notwithstanding the close association of the two VPs to one another, the viewing context is quite different, albeit resulting in the same level of assessment. For VP11 the significance of effect relates to clear and legible views of the proposed turbines to both the north and south where they contribute strongly to the scale, intensity and extent of built development relative to the baseline scenario, which does, nonetheless, consist of distant views of both the Yellow River (north) and Cloncreen (south) wind farms. Conversely, for VP12 the view of the turbines of the southern cluster is close, but partially and intermittently screened by foreground vegetation and buildings whereas the view of the northern cluster is substantially screened by tall coniferous vegetation. Even though the turbines are generally less visible from VP12, the view of them is more ambiguous resulting in only a minor reduction in the overall level of effect. This illustrates the variation generally in the viewing scenario of the local population where one receptor may have open visibility of the Proposed Development and others nearby may be fully or substantially screened.

Viewpoints VP2 and VP15 are assigned the next highest level of significance, being Moderate. In both instances they have relatively clear and close views of the nearest cluster of turbines (VP2 southern cluster/VP15 northern cluster), but a more restricted (screened) view of the more distant cluster. This relationship between the clusters makes for a strong sense of perspective and therefore scale and distance between the two parts of the development. Again, the main aspect of visual effect relates to the increased scale and intensity of built development within the views rather than any sense of the turbines feeling overbearing or out of place.

From the remaining local community viewpoints, the significance of visual effect ranges between Slight-Moderate for VP3, VP10, VP13 and VP16 to Slight for VP8. These views are generally beyond 2km of the nearest turbine or the majority of turbines with the blades sets rising partially above the intervening vegetated skyline. This reduction of visual impact within a relatively short distance reinforces the findings of the RSA which saw a similar drop-off in turbine visibility beyond 2 to 3km.

There is not considered to be any significant effects from the Proposed Development at any local community receptors.

11.5.5 Visual Impacts on Centres of Population

Four of the 29 viewpoints were selected to represent population centres and these include VP1, VP19, VP22, VP24. Population centres are generally considered to have mid to low levels of visual receptor sensitivity because they are built-up environments where visual change is more common and less impactful.

All but VP1 recorded an Imperceptible significance of impact due to viewing distance and intervening screening. Even at VP1 from the western outskirts of Edenderry, the significance was only deemed to be Slight due to the view of several partial blade sets above the vegetated skyline.

There is not considered to be any significant effects from the Proposed Development at any centres of population.

11.5.6 Visual Impacts on Major Routes

These include national and regional level roads and rail lines, and sensitivity generally relates to the number of viewers potentially impacted by the Proposed Development rather than inherent sensitivity of road users. Major routes typically provide views experienced whilst in motion and these may be fleeting and intermittent depending on screening by intervening vegetation or buildings.

Whilst a number of viewpoint location are on major routes, only three viewpoints were selected primarily to represent major routes and have not otherwise been summarised above in relation to other more sensitive visual receptor categories. These are VP9 and VP20.

Viewpoint VP9 is from the R400 a short distance to the west of the northern cluster of the Proposed Development from a hump backed bridge that passes over the Grand Canal. As such it could have been classified as being from the Grand Canal except that the elevated viewing context is quite different to that experience from the canal below which is heavily enclosed by vegetation at this point. This same vegetation screens the nearest of the proposed turbines to the extent that it is only the partial blade sets of the more distant southern cluster that generate a Slight significance of effect at VP9.

At VP20 from an overpass of the M6 motorway, the turbines will be fully screened from view resulting in an Imperceptible significance of effect. This view was used to illustrate that even from an elevated position above the motorway there could be no effect from the motorway itself.

11.5.7 Visual Impacts at Tourism, Recreation and Heritage Features

One of the key considerations for this Proposed Development is the visual effects from the important recreational, heritage and amenity features of the Grand Canal, which runs 500m to the north of the Proposed Development at its closest point and Croghan Hill which is approximately 7.7km away to the northwest. The Grand Canal is specifically represented by VP14a and VP14b though it should be noted that VP9 and VP13 (discussed above) are also from bridges crossing the Grand Canal within the local area. VP6 from Daingean Village is also located on the Grand Canal further to the west. Croghan Hill is represented by VP29 which is from its summit.

The highest significance of effect from the Grand Canal was recorded at VP14a directly north of the Proposed Development where the three nearest turbines from the northern cluster will rise prominently above the canal side vegetation from a short distance away, whereas the more distant southern cluster of turbines is barely visible at all. They are set back from the canal corridor and are seen oblique to it in a scenario that does not unduly draw from the view of the canal itself. Indeed, in the context of a journey scenario along the canal they are likely to be

perceived as brief way-markers that do not draw from the experience. They will contribute to an increase in the scale and intensity of development visible from this section of the canal, but this is a feature that was constructed in the spirit of industry for the midlands. The view from VP14b has a similar context but the turbines are slightly further away and more screened resulting in Moderate effect. This also illustrates the localised nature of the higher order effect at VP14a and how quickly effects dissipate along the canal away from the Proposed Development.

At VP29 from the summit of ancient volcano and burial ground of Croghan Hill the visual effect is deemed to be Slight-Moderate and mainly due to the High sensitivity of this receptor as the magnitude of visual impact is Low. From here, the proposed turbines will be partly set to the fore and to the east (left) of the slightly more distant Cloncreen and Cushaling developments, overlapping with both of them. There is not a strong sense of visual clutter from overlapping turbines given that the distance between development is clear to see. The Proposed Development will contribute to the density of this combined cluster whilst extending it laterally to cover a reasonable proportion of the south-easterly skyline. The elevation of the view and the presence of both nearer and further wind farm developments accentuates the sense of perspective and the vast extent of the view. A view which is already characterised by midland wind energy projects that represent a compatible and supplementary layer of development within this productive rural setting of farmland and cutaway bogs.

11.5.8 Visual Impacts during Demolition or Decommissioning Phase

With the potential exception of the substation and access tracks that may be left in situ, the decommissioning phase of the Proposed Development will see the removal of all turbines and above-ground infrastructure from the Site, with areas of hard standing that are of no further use reinstated and reseeded to blend with the prevailing surrounding land cover.

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

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 removing turbine components. However, such effects will be temporary in duration and decrease in scale as turbines are removed from view and the landscape is substantially reinstated.

As with construction phase impacts, decommissioning phase effects are not considered to be significant.

11.5.9 Do-Nothing

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 being accurate in how these may individually, or in combination, influence the baseline landscape and visual environment is problematic.

In terms of wind energy development, the Site and wider landscape within the northeast of County Offaly is considered to form part of wind energy area 12 '*Area generally north of Rhode*', which is deemed 'Open for consideration for Wind Energy Development'. This is reflected by the number of turbines present in the landscape in this general area.

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 and commercial forestry, albeit the prevailing framework of vegetation is dominated primarily by hedgerows, and belts of vegetation associated with agricultural use of the landscape. The most notable change in this regard is considered to relate to the large tracts of peatland and cutaway peatland. These landscapes comprise a variety of different vegetative habitats including heath and scrubland, with pockets of woodland naturally regenerating, and the edges being influenced by large tracts of conifer plantation.

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. Vegetation management is also likely to influence the character of the landscape, such as large-scale felling and replanting activities associated with commercial forestry activities.

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.

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 should the proposed development not proceed, albeit with pressure for similar scale and form of development likely to follow.

11.5.10 Cumulative Impacts and Effects

The consideration of cumulative landscape and visual effects is placed principally on the cumulative wind energy developments outlined in Table 2.1 of Chapter 2. The cumulative scenario of existing and permitted wind farms is outlined in Table 11-11.

Table 11-11: Cumulative Wind Farms within the Study Area

Wind Farm	No. of Turbines	Status	Distance/Direction from Proposed Development
Cloncreen	21	Operational	3km SSE
Moanvane	12	Operational	12km SW
Mount Lucas	28	Operational	5km SW
Yellow River	26	Operational	4km NNW
Cushaling	9	Operational	6km SE
Dernacart	8	Permitted	20km SW
Drehid	11	Planned	18km ENE

A cumulative ZTV map is provided in Appendix 11-2 which shows the bare-ground intervisibility between the Proposed Development and all existing and permitted turbines.

A colour grading has been employed to illustrate the following types of theoretical visibility:

- Blue wash: indicates parts of the Study Area where theoretical visibility of the proposed turbines only is possible, and they will not be seen in combination with existing (and/or 'in-planning') turbines in the landscape.
- Pink wash: indicates parts of the Study Area where the proposed turbines have the potential to be seen with existing wind farms.

- Green wash: indicates parts of the Study Area where the proposed turbines would not be visible, but existing and permitted wind turbines would be.

Given the topographical character of the Study Area and the scale of existing wind turbines, it is unsurprising that the cumulative ZTV indicates that from over 95% of the Study Area, theoretical visibility of existing and permitted wind turbines is possible. The theoretical visibility of wind energy development is therefore acknowledged to be extensive in its coverage. The cumulative ZTV highlights that the proposed turbines have the potential to be viewed in isolation for a fraction (less than 0.5%) of the Study Area.

The cumulative ZTV indicates that over 80% of the Study Area has a theoretical potential for visibility of both the proposed turbines and other existing wind farm developments. Existing wind turbines, have the potential to be viewed in isolation for the remainder of the Study Area save for the 5% that has no potential visibility of turbines. These areas are predominantly within the wider landscape of the study area and behind hills that screen the Proposed Development is screened from view.

The key consideration in relation to the cumulative effects assessment of the Proposed Development is that all but two of the wind farms listed above and shown in the cumulative ZTV are existing developments. The only exceptions being the permitted Dernacart Wind Farm and planned Drehid Wind Farm. Dernacart Wind Farm is 20km away to the southwest and marginal in terms of whether it needed to form part of the cumulative assessment at all as its turbines are all just outside of the study area. Drehid Wind Farm is marginally closer at 18km east-northeast of the Proposed Development. The operational wind farms all formed part of the described baseline landscape condition and are contained in the baseline photography (existing views) of the photomontage set used for the visual impact assessment. As such, the main assessment of landscape and visual effects contained within this chapter is essentially a cumulative one and the relationship of the proposed development to existing wind farms is described throughout the assessment and is central to many of the judgements.

A key cumulative element of the Proposed Development, which is apparent from the main assessment of both landscape and visual effects, is that it serves as something of a spatial and visual bridge between the existing wind farms to the southeast (Cloncreen/Cushaling) and southwest (Mount Lucas) with that to the north (Yellow River). In this regard, it makes a contribution to the landscape fabric and views of turbines from various developments that is greater than its modest seven turbines might do in a portion of the midlands landscape that is more isolated from other developments. Again, this must be balanced against the contribution the existing wind energy developments already make to the landscape within 10km of the Proposed Development. Furthermore, the separation to these other developments is sufficient that they each appear as discrete entities and not a single sprawling collective. The more distant Moanvane, Dernacart and Drehid Wind Farms will not be readily visible with the Proposed Development except in distant vast elevated views such as from Croghan Hill. There will be little material cumulative effect arising from the proposed development in conjunction with these more distant developments.

From a cumulative landscape impact perspective, the presence of wind energy development as a familiar and characteristic feature of the study area adds a degree of robustness and limits its sensitivity to similar additional development. This is brought out in the assessment of landscape sensitivity and the same occurs for visual sensitivity where existing turbines are already present within a view. The magnitude of cumulative impact considers whether the proposed turbines materially alter the character of the landscape from a predominantly rural farmland/cutaway peatland and commercial forestry setting with turbines present, to an energy landscape that also serves more traditional rural land uses. It is not considered that the proposed wind farm tips that balance or even comes close to it. However, it should be acknowledged that with each additional wind farm within this midlands context there is becoming a more even balance between energy production and traditional primary production. It reads as a more contemporary landscape and one that reflects the priorities of this generation. However, it also contributes to the time depth of this landscape without overwriting earlier layers of land use and

heritage that remain present. It forms part of the concept of 'palimpsest' in the landscape with the term relating to the concept of a 'much written over manuscript.'

Based on the assessment above and detailed throughout this chapter, it is considered that the Proposed Development contributes a **Medium-low** cumulative impact. When combined with the general **Medium-low** sensitivity of the receiving landscape, the cumulative effect is deemed to be no greater than **Slight-Moderate**.

11.6 Mitigation and Monitoring Measures

11.6.1 Mitigation Measures

There are no specific mitigation measures proposed or indeed likely to be successful at reducing landscape and visual effects below what has been assessed herein. Instead, landscape and visual mitigation for the Proposed Development is embedded in the siting and design that is eventually brought to planning. The main landscape and visual embedded mitigation that was employed in this instance was moving turbines 500m away from the Grand Canal where earlier design iterations had them much closer. This was effective in reducing the potential for significant effects from this sensitive landscape and visual receptors. Further considerations also include 740m+ setbacks from the nearest non-involved residential receptors.

11.6.2 Monitoring Measures

As there are no specific mitigation measures proposed there will not be any requirement for specific monitoring measure relating to the landscape and visual factor.

11.7 Residual Impacts and Effects

There are no specific mitigation measures proposed for the landscape and visual factor residual effects are deemed to be the same as those set out in the main assessment Sections 11.3.6 to 11.5.10.

11.8 References

Offaly County Development Plan 2021-2027.

Kildare County Development Plan 2023-2029.

Westmeath County Development Plan 2021-2027.

Laois County Development Plan 2021-2027.

Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (Landscape Institute and the Institute of Environmental Management and Assessment (2013).

Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022).

Wind Energy Development Guidelines (Department of the Environment, Heritage, and Local Government 2006)