



Chapter 7: Landscape and Visual

Coolglass Wind Farm Vol. 2 EIAR

Coolglass Wind Limited Farm

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7.0 Introduction

This chapter of the EIA assesses the impacts of the Proposed Development on the landscape and visual amenity of the receiving environment. Although closely linked, landscape and visual impacts are assessed separately.

This chapter assesses the Proposed Development in accordance with Section 3.1 and 3.1.1 of Chapter 3 in this EIA. Minimum and maximum hub height and rotor diameter parameters being proposed and all design permutations within that range as set out in Table 3.1 of Chapter 3 in this EIA are being applied for.

Two cable connection route options (Options 1 and 2) which are part of the "Project" but not part of the Proposed Development that are being applied for are also assessed as part of this EIA.

All elements of the Project are described in Section 3.5 of this EIA and the description of the Proposed Development is found in section 3.8.1 of this EIA.

Where negative effects are predicted, the chapter identifies appropriate mitigation measures therein. The assessment will consider the potential effects during the following phases of the Proposed Development:

- Construction of the Development
- Operation of the Development
- Decommissioning of the Development (final phase)

Common acronyms used throughout this EIA can be found in Technical Appendix 1.4 found in Volume III of this EIA.

7.1 Background

This chapter of the EIA is supported by a portfolio of photomontages provided as a separate booklet (Volume 4 of this EIA) and the following Appendix document provided in Appendix 7.1 Volume 3 of this EIA:

- Technical Appendix 7.1: Visual Impact Assessments at VPs (found in Volume III of this EIA)

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

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



Cumulative landscape and visual impact assessment is concerned with additional changes to the landscape or visual amenity caused by the Proposed Development in conjunction with other developments (associated or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future.

7.1.1 Assessment Structure In line with the Landscape Institute and the Institute of Environmental Management and Assessment publication entitled Guidelines for Landscape and Visual Impact Assessment – Third Addition (2013) the structure of this chapter will consist of separate considerations of landscape effects and visual effects in the following order:

- Assessment of landscape value and sensitivity
- Assessment of the magnitude of landscape effects within the Study Area; (comprised of the 'Central Study Area' (within c. 5km of the Proposed Development Site) and 'Wider Study Area' (5-20km from the Proposed Development Site))
- Assessment of the significance of landscape impacts
- Assessment of visual receptor sensitivity
- Assessment of visual impact magnitude at representative viewpoint locations (using photomontages)
- Assessment of visual impact significance
- Assessment of cumulative landscape and visual impacts

7.1.2 Statement of Authority

This Landscape and Visual Impact Assessment was prepared Richard Barker, Principal Landscape Architect (BA Env. PGDip Forestry. MLA. MILI) and Jordan Derecourt – Landscape Architect (BLA. MLA. MILI), at Macro Works Ltd (part of APEM Group), a specialist LVIA company with over 20 years of experience in the appraisal of effects from a variety of energy, infrastructure and commercial developments. Relevant experience includes LVIA work on over 140 on-shore wind farm proposals throughout Ireland, including six Strategic Infrastructure Development (SID) wind farms. Macro Works and its senior staff members are affiliated with the Irish Landscape Institute, both authors are full professional members of the ILI.

7.1.3 Description of the Proposed Development

All elements of the Project are described in Section 3.5 of this EIAR and the description of the Proposed Development is found in section 3.8.1 of this EIAR.

7.2 Assessment Methodology

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

7.2.1 Desktop Study

- Establishing an appropriate Study Area from which to study the landscape and visual impacts of the Proposed Development.



- 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, particularly with regard to 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.

7.2.2 Fieldwork

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

7.2.3 Appraisal

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 stage and operational stage effects and the mitigation measures that could be employed to reduce such effects.
- Estimation of the significance of residual landscape impacts.
- Estimation of the significance of residual visual impacts aided by photomontages prepared at all of the selected VRP locations.
- Estimation of cumulative landscape and visual effects in combination with other surrounding developments that are either existing or permitted.

7.2.4 Relevant Legislation and Guidance

This LVIA uses methodology as prescribed in the following guidance documents:

- Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Statements (2022) and the accompanying Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (2003).
- Landscape Institute and the Institute of Environmental Management and Assessment publication entitled Guidelines for Landscape and Visual Impact Assessment – Third Edition (2013).
- Scottish Natural Heritage (SNH) Guidance Note: Cumulative Effect of Windfarms (2012).



- Department of the Environment, Heritage and Local Government Wind Energy Development Guidelines (2006 - current) and Wind Energy Development Guidelines (2019 - draft revised)
- Scottish Natural Heritage (SNH) Visual representation of wind farms: Best Practice Guidelines (version 2.2 - 2017).

7.2.5 Definition of Study Area

The Wind Energy Development Guidelines published by the Department of the Environment, Heritage and Local Government (2006 and 2019 draft revision) both specify the same 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 the Proposed Development, the blade tips are up to 185m high and, thus, the minimum ZTV radius recommended is 20km from the outermost turbines. There are not considered to be any sites of national or international importance between 20 – 25km and thus, the radius of the study area will remain at 20km. Notwithstanding the full 20km extent of the LVIA study area, there will be a particular focus on receptors and effects within the Central Study Area where there is higher potential for significant impacts to occur. When referenced within this assessment, the 'Central Study Area' is the landscape within c. 5km of the Site.

7.2.6 Computer Generated Images, Photomontages and Wireframes

This LVIA is supported by a variety of computer-generated maps and graphics as well as verifiable photomontages that depict the Proposed Development within the views from a range of represented visual receptor locations. These maps, graphics and visualisations consist of the following:

- Zone of Theoretical Visibility (ZTV) maps.
- Photomontages consisting of existing views, wireframe views and proposed views.

7.2.7 Assessment Criteria for Landscape Effect

The classification system used by Macro Works to determine the significance of landscape and visual impacts is based on the IEMA Guidelines for Landscape and Visual Impact Assessment (2013). When assessing the potential impacts on the landscape resulting from a wind farm development, the following criteria are considered:

- Landscape character, value and sensitivity
- Magnitude of likely 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 to its essential characteristics.

Landscape Value and Sensitivity is classified using the following criteria:



Table 7-1 Landscape Value and Sensitivity

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

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 Site Boundary that may have an effect on the landscape character of the area.

Table 7-2 Magnitude of Landscape Impacts

Magnitude of Impact	Description
Very High	Change that would be large in extent and scale with the loss of critically important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to an 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, that 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 following matrix:



Table 7-3 Landscape Impact Significance Matrix

Scale/Magnitude	Description				
	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 impacts' in EIA terms.

7.2.8 Assessment Criteria for Visual Effect

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.

7.2.9 Visual Sensitivity

Unlike landscape sensitivity, visual sensitivity has an anthropocentric basis. 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 criterion. Susceptibility criteria is extracted directly from the IEMA Guidelines for Landscape and Visual Assessment (2013), 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 the IEMA Guidelines for Landscape and Visual Assessment (3rd edition 2013) visual receptors most susceptible to changes in views and visual amenity are:
 - o “Residents at home
 - o 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
 - o Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience
 - o Communities where views contribute to the landscape setting enjoyed by residents in the area
 - o 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:



- o People engaged in outdoor sport or recreation, which does not involve or depend upon appreciation of views of the landscape
- o 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”.

7.2.10 Value of Views

To assess the amenity value of views, Macro Works use a range of criteria that might typically be related to high amenity value including but not limited to, scenic designations. These are set out below:

- **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 on a regular basis and whether this is significant at county or regional scale.
- **Connection with the landscape.** This considers whether or not receptors are likely to be highly attuned to views of the landscape i.e. commuters hurriedly driving on busy national route versus hill walkers directly engaged with the landscape enjoying changing sequential views over it.
- **Provision of elevated panoramic views.** This relates to the extent of the view on offer and the tendency for receptors to become more attuned to the surrounding landscape at locations that afford broad vistas.
- **Sense of remoteness and/or tranquillity.** Remote and tranquil viewing locations are more likely to heighten the amenity value of a view and have a lower intensity of development in comparison to dynamic viewing locations such as a busy street scene, for example:
- **Degree of perceived naturalness.** Where a view is valued for the sense of naturalness of the surrounding landscape it is likely to be highly sensitive to visual intrusion by obvious human interventions.
- **Presence of striking or noteworthy features.** A view might be strongly valued because it contains a distinctive and memorable landscape feature such as a promontory headland, lough or castle.
- **Historical, cultural or spiritual value.** Such attributes may be evident or sensed at certain viewing locations that attract visitors for the purposes of contemplation or reflection heightening the sense of their surroundings.
- **Rarity or uniqueness of the view.** This might include the noteworthy representativeness of a certain landscape type and considers whether other similar views might be afforded in the local or the national context.



- **Integrity of the landscape character in view.** This criterion considers the condition and intactness of the landscape in view and whether the landscape pattern is a regular one of few strongly related components or an irregular one containing a variety of disparate components.
- **Sense of place.** This criterion considers whether there is 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.

7.2.11 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. Instead, the 2012 Fáilte Ireland survey entitled 'Visitor Attitudes On The Environment – Wind farms' found that

"Compared with other types of development in the Irish landscape, wind farms elicited a positive response when compared to telecommunication masts and steel electricity pylons"

.... and that

"most (tourists) felt that their presence did not detract from the quality of their sightseeing, with the largest proportion (45%) saying that the presence of the wind farm had a positive impact on their enjoyment of sightseeing..."

The purpose here is not to suggest that turbines are either 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 Proposed Development 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 the Guidelines for Landscape and Visual Impact Assessment:

Table 7-4 Magnitude of Visual Impacts

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

7.2.12 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 7-3** above.

7.2.13 Quality of Effects

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

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

In the case of commercial wind energy developments and the associated introduction of new moving structures within rural and upland areas, the quality of landscape and visual effects will almost always be negative, rather than positive or even neutral. Unless otherwise stated, the quality of landscape and visual effect judgements herein can be taken as negative.

7.2.14 Assessment Criteria for Cumulative Effects

The Scottish Natural Heritage (SNH) Guidance relating to ‘Assessing the Cumulative Effects of Onshore Wind Farms (2012) identify that cumulative impacts on visual amenity consist of combined visibility and sequential effects. The same categories have also been subsequently adopted in the Landscape Institute’s 2013 revision of the Landscape and Visual Impact Assessment Guidelines. 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 a subsequent consideration of cumulative impacts with other forms of notable development (existing, permitted or proposed), particularly within the Central Study Area.

‘Combined visibility occurs where the observer is able to see two or more developments from one viewpoint. Combined visibility may either be in combination (where several wind farms are within the observer’s arc of vision at the same time) or in succession (where the observer has to turn to see the various wind farms).

Sequential effects occur when the observer has to move to another viewpoint to see different developments. The occurrence of sequential effects may range from frequently sequential (the features appear regularly and with short time lapses between, depending on speed of travel and distance between the viewpoints) to occasionally sequential (long time lapses between appearances, because the observer is moving very slowly and / or there are large distances between the viewpoints.)’

Cumulative impacts of wind farms tend to be negative rather than positive as they include the addition of moving manmade structures into a landscape and viewing context that already contains such development. Based on guidance contained within the SNH Guidelines relating to the Cumulative Effects of Wind Farms (2012) and the DoEHLG Wind Energy Guidelines (2006), cumulative impacts can be experienced in a variety of ways.

Table 7-5 below provides Macro Works’ criteria for assessing the magnitude of cumulative impacts, which are based on the SNH Guidelines (2012).

Table 7-5 Magnitude of Cumulative Impacts

Magnitude of Impact	Description
Very High	<ul style="list-style-type: none"> The Proposed Development 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 a sense of being surrounded by wind energy development. Strongly adverse visual effects will be generated by the proposed turbines in relation to other turbines.
High	<ul style="list-style-type: none"> The Proposed Development 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	<ul style="list-style-type: none"> The Proposed Development 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	<ul style="list-style-type: none"> The Proposed Development 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.



Magnitude of Impact	Description
	<ul style="list-style-type: none"> The design characteristics of the Proposed Development accord with other schemes within the surrounding landscape and adverse visual effects are not likely to occur in relation to these.
Negligible	<ul style="list-style-type: none"> The Proposed Development 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.

7.3 Landscape

7.3.1 Existing environment

Landform and Drainage

The Proposed Development Site is located within the upland areas which make up the southeast of Co. Laois, transitioning from the Fossy Hill/Fossy Mountain (332m) to Castlecomer Plateaux (336m) to the south. Dominating the south/southeast of the study area, Castlecomer Plateau is the watershed between the rivers Nore and Barrow. Formed by the erosion of carboniferous deposits by the two rivers. There is a cluster of smaller upland areas immediately northeast of the Site, these are Knocknabraher Hill, Bawn Hill, Dandys Hill and Carrig Hill. Further north of the Site is a second group of smaller hills, running approx. southwest/northeast which consists of Hewson Hill, Kildeale Hill, and Slieve Baun. Killone Hill is located 12km north of the Site, beyond which, the topography continues in a relatively level manner to the northern extent of the study area.

To the west, there is Cullenagh Mountain, which is marginally shorter than Fossy Mountain, however is distinctly separate from the Site and the Castlecomer Plateau to the south. Other landform features to the northwest include the Timahoe Esker at 3km distance, with two serpentine sections winding across the landform in a north/south direction before twisting east/west.

The wider west of the study area is relatively level, punctuated by the Nore River and tributaries which flow and join southwards out of the study area. This is mirrored to the east of the study area, which is dominated by the River Barrow Valley, defined by the Castlecomer Plateaux and Fossy Mountain to the west (of the river valley) and slopes upwards in a uniform manner to the east, away from the Site and the study area. Additionally, along the River Barrow, the Grand Canal follows the river corridor through the northeast of the study area. There are smaller waterways such as Crooked River, Stradbally River, Bauteogue River, Timogue River, Timahoe River, Killeshin Water Works, and Dirin River, however the Barrow and Nore are two of the 'Three Sisters' Rivers and have the greatest influence on landscape character.

Landcover and Landuse

The landcover and landuse of the study area is reflective of the landform. To the south of the Site, over and between the rolling upland areas, there is a high density of conifer forestry plantations. This contrasts with the northern sections of the study area, where dense vegetation is limited and more often woodland than conifer forestry. To the west, landcover features more open pasture, transitioning to urban form (Portlaoise) and bogland areas. To the east is tillage through the Barrow Valley, with the smaller urban area of Athy and larger town of Carlow to the southeast, both along the Barrow.



As noted above, the south of the immediate Site and wider study area is covered by a relatively high proportion of conifer forestry, however away from the steep eastern edge of the Castlecomer Plateaux, these areas are interspersed with, and surrounded by agricultural farmland which comprises of small to medium sized geometric fields. These fields are generally bound by dense mature tree lined hedgerows, which contrast with reduced vegetation in the larger, more commercial fields in the lowland topography. An additional land-use overlays the upland (generally forested) landscapes of the study area, with an existing (and several permitted) windfarms through the south of the wider study area. These will be addressed in more detail in the following cumulative baseline section.

Throughout the Barrow River corridor, to the east of the study area, the low sloping landform and arable land have resulted in a high level of commercialised farming and scattered residential development. In the northern section of this landscape, there is a scattering of woodlands composed of native and mixed tree species. These include Oughaval Woods, Ballykilcavan Wood, Hairyhead Wood, Brackney Wood, Curraclone Woods. Additional woodlands occur around the 3 intact estates and parklands across the study area. The nearest to the Site is Stradbally Hall, which features Molly Porters Wood and Timogue Wood. To the west is De Vesci Estate, with Killamuck Wood and Birchfield Plantation. At the far north of the study area, Emo Court grounds feature large wooded areas. The detail of these houses and other similar sites will be detailed in the tourism and amenity section.

There are four separate areas of bog across the study area, to the northeast at Kilberry (including the Kilberry Bord na Mona site), to the northwest at Coolnamona and Cashel Bog. The majority of these have been cut, however there is a degree of restoration occurring throughout the study area, with the Abbeyleix Bog Project in particular creating a recreation and biodiversity attraction from the cut areas, with woodland already established around the periphery of the bog. These are generally settled within the more level/rolling pasture and tillage landscapes at the west, north and north-eastern edges of the study area.

7.4 Landscape Policy Context and Designations

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

The Wind Energy Development Guidelines (2006/ and Draft 2019 revision) provide guidance on wind farm siting and design criteria for a number of different landscape types. As described in the landform/drainage and landcover/land use section of both documents, the Site of the Proposed Development is located within the rolling upland landscape at the northern periphery of the Castlecomer Plateaux, specifically Fossy Mountain/Wolf hill, with the rolling farmland and in particular the Barrow River Valley transitioning into open level landscapes to the wider study area. With this in mind, the Site is most consistent with the 'Transitional Marginal' type from the Wind Energy Development Guidelines, but also with some characteristics of the 'Hilly and Flat Farmland' landscape type.

The most relevant recommendations for the 'Transitional Marginal' Landscape type are set out below.



7.4.1.1 Transitional Marginal Landscapes:

Location –

“Wind energy developments might also be located at lower levels in extensive areas of this landscape type, where they will be perceived against a relatively complex backdrop. In these situations it is important to minimise visual confusion such as the crossing by blade sets of skylines, buildings, utility lines and varied landcover.”

Spatial extent –

“Wind energy developments in these landscapes should be relatively small in terms of spatial extent. It is important that they do not dominate but achieve a balance with their surrounds, especially considering that small fields and houses are prevalent.”

“4(a) Wind energy development with regular spacing and linear layout – may not be appropriate due to the undulation of the land from as well as limited field pattern.”

“4(b) Wind energy development with irregular spacing and random layout -is more appropriate given the relative undulation of the setting.”

“4(c) Large wind energy development straddling two landscape character types within the same visual unit can create visual ambivalence and, thus, negative tension between the two character types involved.”

Spacing -

“All options are possible, depending on the actual landscape characteristics. However, irregular spacing is likely to be most appropriate.”

Layout -

“The likely location of wind energy developments on ridges suggests a linear or staggered linear layout whereas on broader hilltops they could be linear or clustered.”

Height -

“...where the upper ground is relatively open and visually extensive, taller turbines may be more appropriate.”

“...the profile can be even or uneven, depending on the profile and visual complexity of the terrain involved. The more rugged and undulating, the greater the acceptability of an uneven profile provided it does not result in significant visual confusion and conflict.”

Cumulative -

“This would have to be evaluated on a case-by-case basis, but great caution should be exercised. The spatial enclosure often found in transitional marginal landscapes is likely to preclude the possibility of seeing another wind energy development. However, should two or more wind energy developments be visible within a confined setting a critically



adverse effect might result, depending on turbine height and wind energy development extent and proximity."

7.4.2 Laois County Development Plan 2021 – 2027

The current 2021 – 2027 Laois County Development Plan includes a Landscape Character Assessment, which identifies the different landscape character areas of the county. The Proposed Development Site is located within the 'Mountains, Hills and Upland Areas' Landscape Character Area (LCA), and the sensitivity of this landscape type is Medium-High, as the landscape character area description does not entirely align with the LCA/Special features listed in Table 11.6 of the CDP. 'Rolling Hills and Hills and Upland Areas' is included in the Medium Sensitivity designation, and described as 'Areas with the capacity to accommodate a range of uses without significant adverse effects on the appearance or character of the landscape having regards to localised sensitivity factors', while 'Mountain Areas' (along with Peatlands, River Corridors and Lakes, European Sites) are designated as High Sensitivity, with the following description 'Areas with reduced capacity to accommodate uses without significant adverse effects on the appearance or character of the landscape having regard to prevalent sensitivity factors or special sensitivity factors'.

In this instance, the Proposed Development Site bears more resemblance to the Medium (Rolling Hills, Hills and Upland Areas) description and sensitivity as the High (Mountains) description bears more resemblance to the Slieve Bloom Mountains which are also included in the 'Mountains, Hills and Upland Areas' LCA, and is of considerably higher natural and scenic value than the areas immediately surrounding the Proposed Development Site and the wider south of Co. Laois which are deemed to be more akin to 'Rolling Hills, Hills, and Upland Areas' (Medium Sensitivity).

A detailed analysis of the policy context will be completed in Chapter 4: Planning Policy, however the key points with relation to the Site and landscape are **LCA1**, **LCA2**, LCA3 (Policy Objectives for Landscape Character Areas), and LCA5, LCA6, **LCA7**, LCA8, LCA9, LCA11 (Policy Objectives for Hills and Uplands Areas and Mountain Areas). Those in bold are provided in full below:

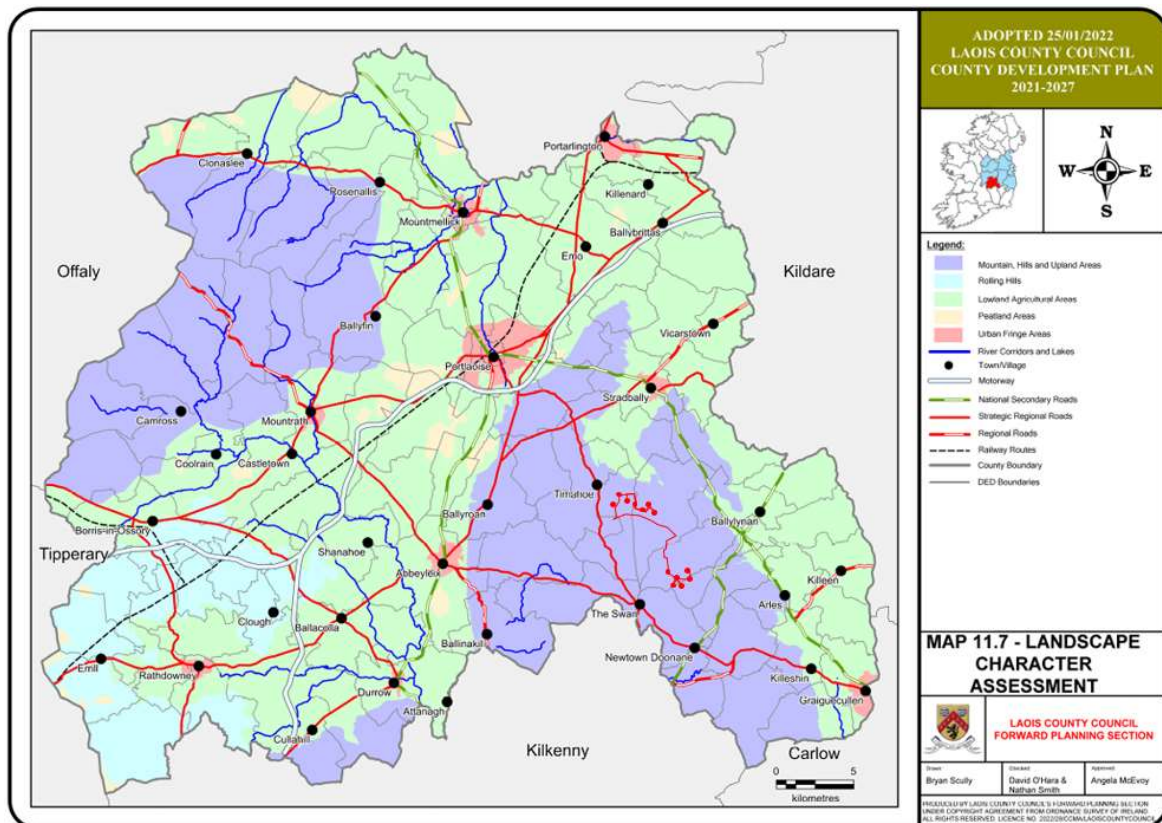
LCA 1 *Ensure that consideration of landscape sensitivity, as indicated in Table 11.6 of the Plan, is an important factor in determining development uses in areas of high landscape sensitivity, the design, type and the choice of location of Proposed Development in the landscape will also be critical considerations*

LCA 2 *Protect and enhance the county's landscape, by ensuring that development retains, protects and, where necessary, enhances the appearance and character of the existing local landscape and conserve valuable habitat including any European and National Designations*

LCA 7 *Facilitate, where appropriate, developments that have a functional and locational requirement to be situated on steep or elevated sites (e.g. reservoirs, telecommunication masts or wind energy structures) where residual adverse visual impacts are minimised or mitigated*



Figure 7-1 Laois CDP Map 11.7 – Landscape Character Assessment (Site superimposed)



Additionally, Policy Objective for Views and Prospects SV1 applies to the Proposed Development Site and study area. While there are multiple within the study area, there are none where the identified view is of Fossy Mountain/Hill. The nearest view is facing away from the Site, and views which do face towards the Site (009, 018), are directed at Stradbally and River Bauteogue (description below).

SV 1 Protect views from designated scenic routes indicated in Table 11.7 and Map 11.8 (Scenic Views and Prospects in County Laois) of the Plan, by avoiding any development that could disrupt the vistas or disproportionately impact on the landscape character of the area, thereby affecting the scenic and amenity value of the views.

Scenic Views and Prospects

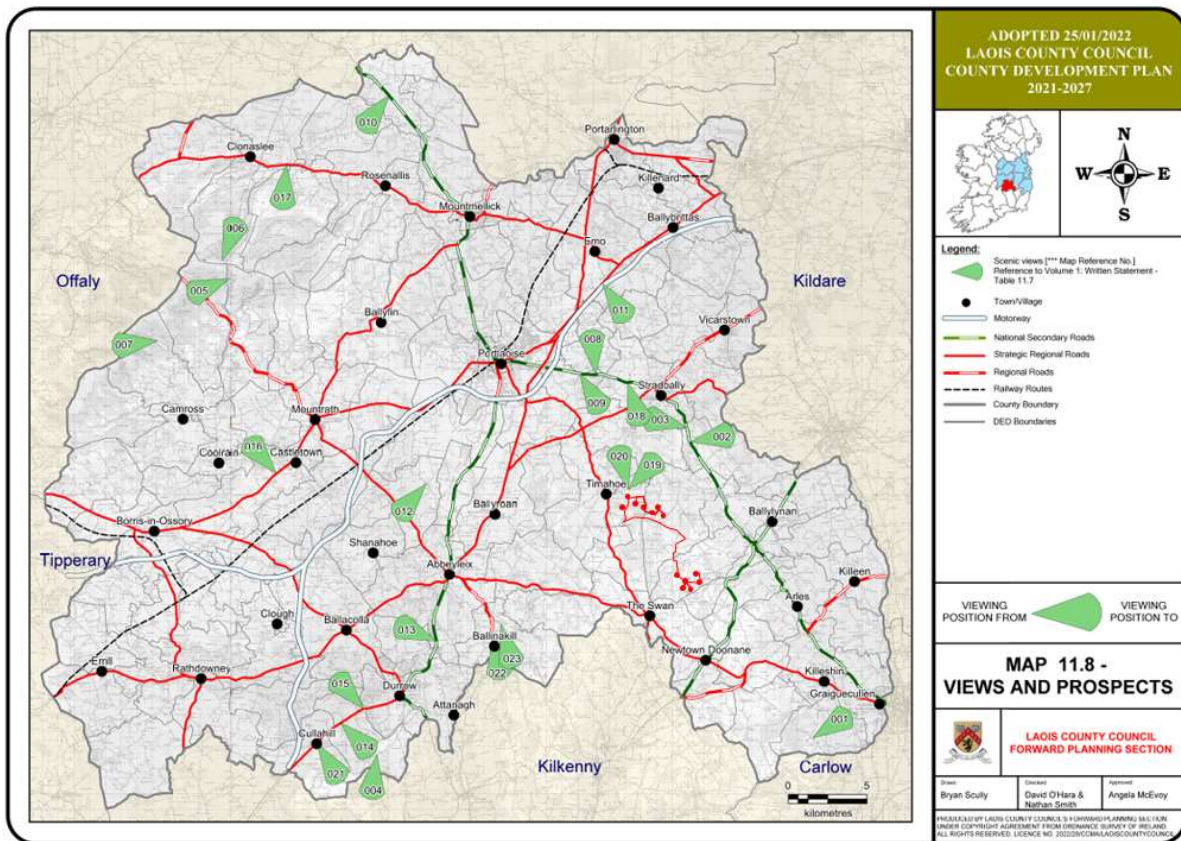
009 View from: N80 in the townlands of Stradbally, View to: Portlaoise Views towards Hewson Hill

018 View from: N80 in the townlands of Stradbally View to: Views over farmland and River Bauteogue

Other scenic views within the study area are: 001, 002, 008, 011, 012, 019, 020, 022, 023, and 004 and 015 at the edge of the study. These and any relevance will be addressed within the following section which goes through the views of the surrounding counties.



Figure 7-2 Laois CDP Map 11.8 – Views and Prospects (Site superimposed)



Appendix 5: Wind Energy Strategy contributes more detail to the landscape character descriptions and describes 'Mountains/ Hills and Upland Areas' as

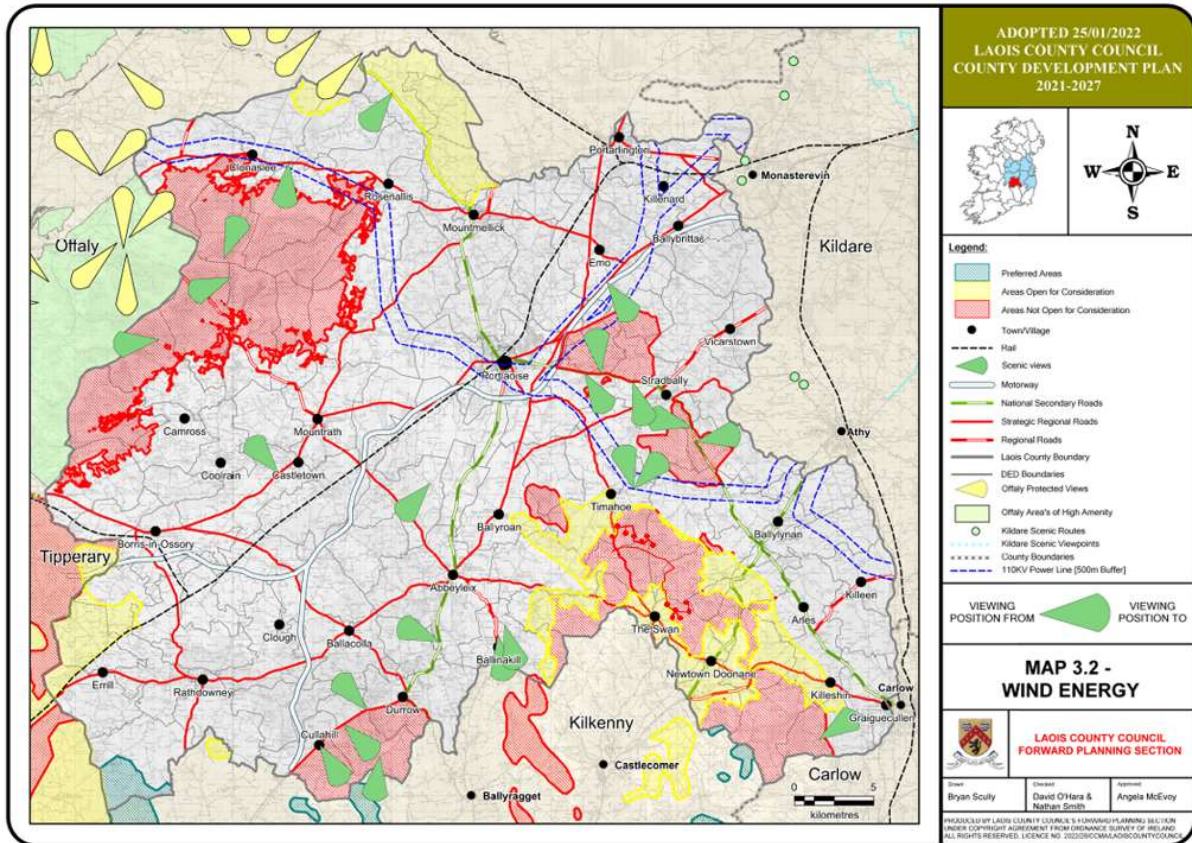
Although lacking in terms of dramatic peaks, hills and uplands are a prominent feature of the county, particularly in the north-west and south-east. From the tops of these hills panoramic views of the lowland landscapes of Laois and adjacent counties are gained. The hills also act as orientating features. The Seven Hills, Cullenagh, Cullahill, Fossy Mountains and the upland areas around Swan, Luggacurren and Wolfhill are prominent by virtue of landmarks at their summits as well as their topography: A church at Wolfhill acts as a prominent local landmark.

There is specific reference to the sensitivity and exclusion of wind energy potential across the Slieve Blooms, but not of the upland areas to the southeast of the County. This is reflected in the wind energy strategy map, where this area is partially 'Open for Consideration' and partially 'Areas Not Open for Consideration'. The Proposed Development is also split across these two designations, with three of the southern turbines located within or on the periphery of 'Open for Consideration', while the three eastern turbines (of the southern cluster) are defined as 'Not Open for Consideration'. The definition of these designations is addressed in Chapter 4: (Planning Policy). However, the key section of 'Areas Not Open for Consideration' designation is specifically related to the receiving landscape sensitivity.



“These areas are not considered suitable for wind farm development due to their overall sensitivity arising from landscape, ecological, recreational and/or cultural and built heritage resources as well as their limited wind regime.”

Figure 7-3 Laois CDP Map 3.2 – Wind Energy (Site superimposed)



For the surrounding counties, the key landscape policy context is the sensitivity and presence (or absence) of scenic designations, these are briefly outlined below, with the visual (scenic) designations identified in the visual baseline section.

7.4.3 Kilkenney City and County Development Plan Volume 1 County 2021-2027

The current Kilkenney City and County Development Plan (Volume 1 – County) contains a Landscape Character Assessment undertaken in 2014. The south of the study area overlays landscape character area “B - Castlecomer Plateau” which is defined as:

‘The Castlecomer Plateau is an extensive upland area with an almost circular shape that lies between the valleys of the Rivers Nore and Barrow, covering most of the north-east of the County. The terrain steeply slopes from the river valleys to the surface of the Plateau, which gently undulates and gives rise to several small ridgelines at an elevation of between 200 and 340m above the sea level. The elevated nature of this physical unit provides a defined skyline and significant and scenic views over the Kilkenney basin and the Nore and Barrow River valleys. The area is generally perceived as special in landscape terms, however suitable for certain type of potential developments (refer to Document 2)’



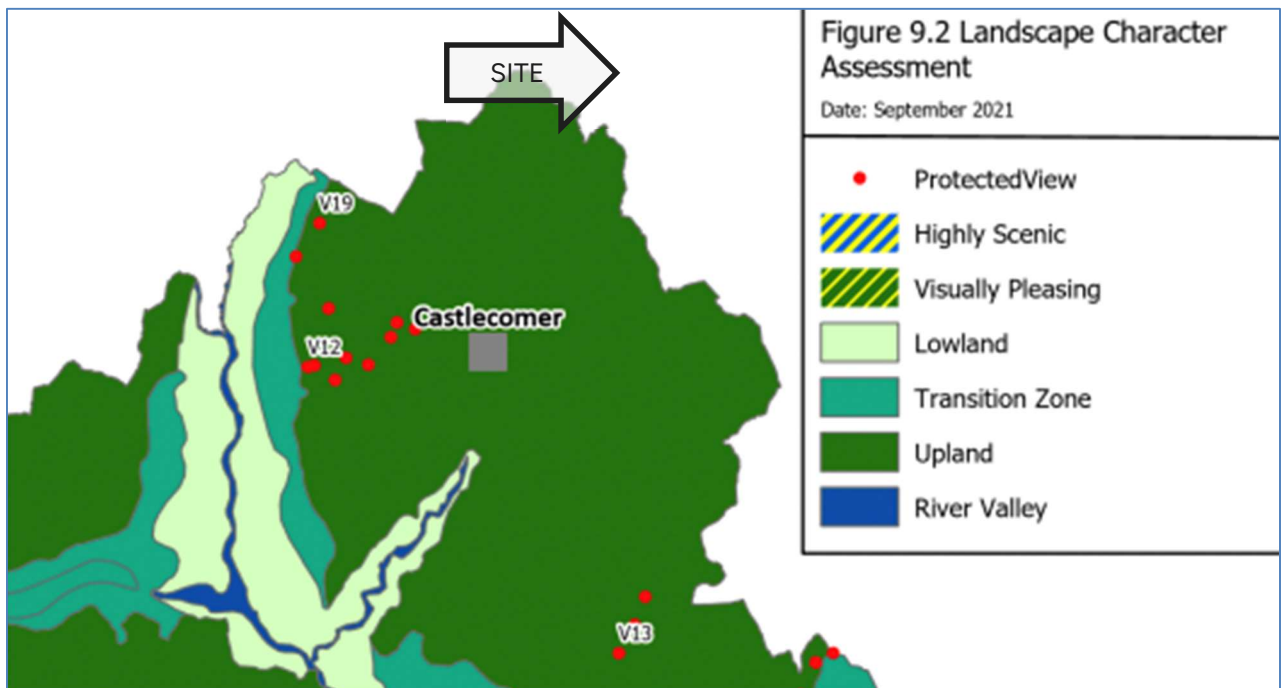
Critical landscape factors within the Castlecomer Plateaux, are:

“Elevated Vistas, Steep slopes, Prominent ridgelines, Undulating topography, Low Vegetation”

Across the wider study area, the following landscape character areas occur:

- Castlecomer Western Transition Character Area (B2)
- Kilkenny Northern Basin Character Area (F1)
- Nore Valley (South) Character Area (H)

Figure 7-4 Kilkenny City and County Development Plan Figure 9.2 – Landscape Character Assessment

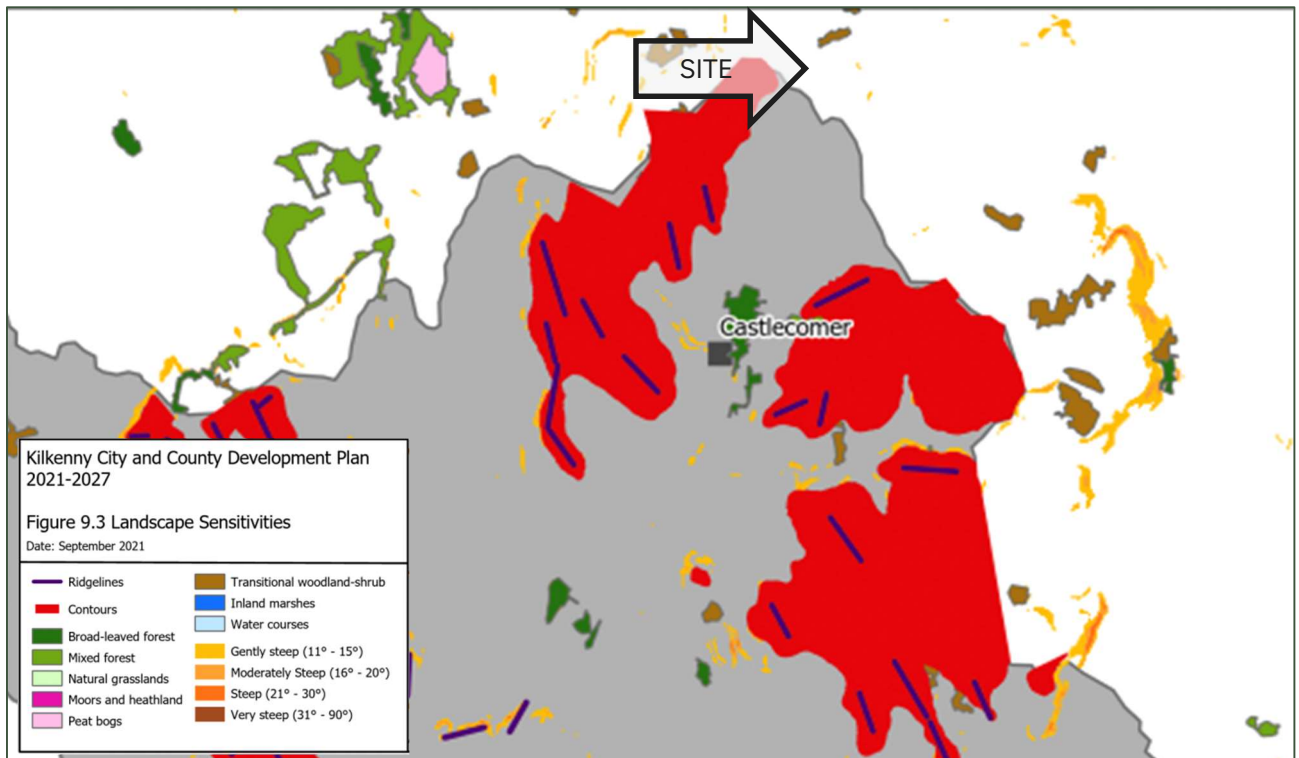


Additionally, parts of the study area in Co. Kilkenny are designated as sensitive landscapes due to the presences of landform features (contours – elevation and grade) and vegetation types. The following development management requirement applies:

To ensure that development within the Landscape Character Areas of Brandon Hill Uplands and the River Valleys of the Nore, Barrow and Suir, which are highly scenic and visually pleasing, and of significant visual amenity value, are carefully sited and designed and can be successfully assimilated into the landscape



Figure 7-5 Kilkenny City and County Development Plan Figure 9.3 – Landscape Sensitivities



These will be considered with regards to the impacts of the Proposed Development on landscape and visual character, however the priority from within the Kilkenny CCDP is the designated views (as shown KCDP **Figure 7-5** above), which are addressed within the visual baseline section.

The following development management requirement applies (derived from section 9.2.12.6 Views and Prospects):

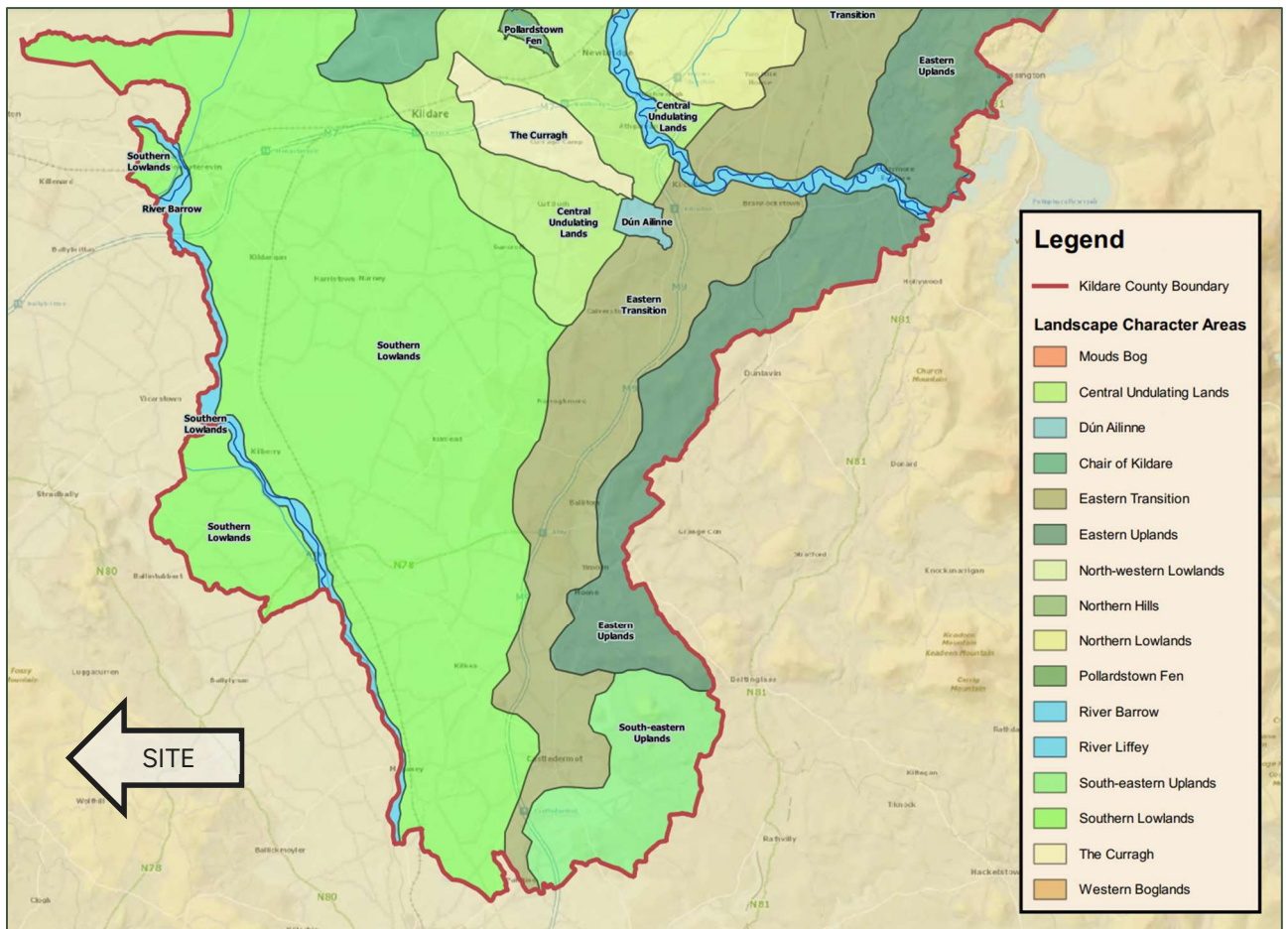
To maintain the visual integrity of areas of greater sensitivity in the county and ensure that any development in these areas is appropriately sited and designed. Applicants shall demonstrate that the Proposed Development can be assimilated into the landscape and will not have a disproportionate visual impact on the landscape.

7.4.4 Kildare County Development Plan 2023 - 2029

As with many of the counties across the country, Kildare has incorporated the Landscape Character Assessment completed for previous CDPs. Of the Landscape Character Areas within the 2004 Landscape Character Assessment, the study area is dominated by the River Barrow and Southern Lowlands Character Areas. The nearest to the east of the Proposed Development Site is Southern Lowlands, which is a 'Class 1 – Low Sensitivity' landscape, while the River Barrow is 'Class 4 – Special Sensitivity' (out of a scale from 1 - 5).



Figure 7-6 Kildare CDP Map Ref V1-13.1 Landscape Character Areas



The adjacent landscapes in Co. Kildare are Southern Lowlands Character Area (Low Sensitivity) and River Valley Character Area (High Sensitivity). There are a variety of other 'Sensitivity Factors' within the wider study area, as shown in Map 1V1-3.2, below.

The key features of the Kildare Policy context are the designated views, which are included in the Visual section, these are scenic route 22 - Views across the Barrow valley, along the L8017 from Pinhill crossroads to Burton crossroads (N78).

The following landscape objective applies:

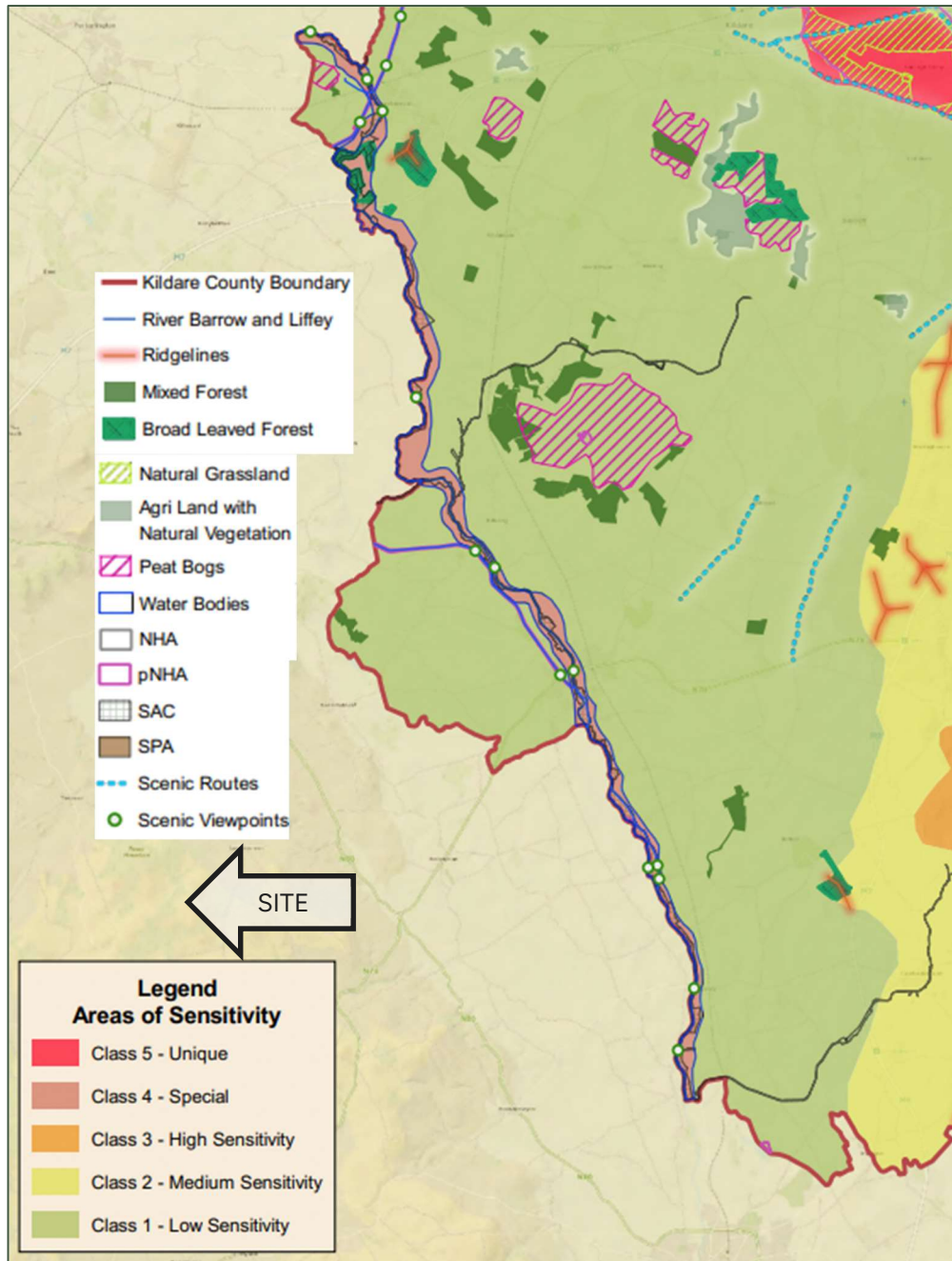
LR O2: Require a Landscape/Visual Impact Assessment to accompany proposals that are likely to significantly affect:

Landscape Sensitivity Factors;

- A Class 4 or 5 Sensitivity Landscape (i.e. within 500m of the boundary);
- A route or view identified in Map V1 - 13.3 (i.e. within 500m of the Site boundary).
- All Wind Farm development applications irrespective of location, shall be required to be accompanied by a detailed Landscape/Visual Impact Assessment including a series of photomontages at locations to be agreed with the Planning Authority, including from scenic routes and views identified in Chapter 13.



Figure 7-7 Kildare CDP Map Ref V1-13.2 Landscape Sensitivity Areas

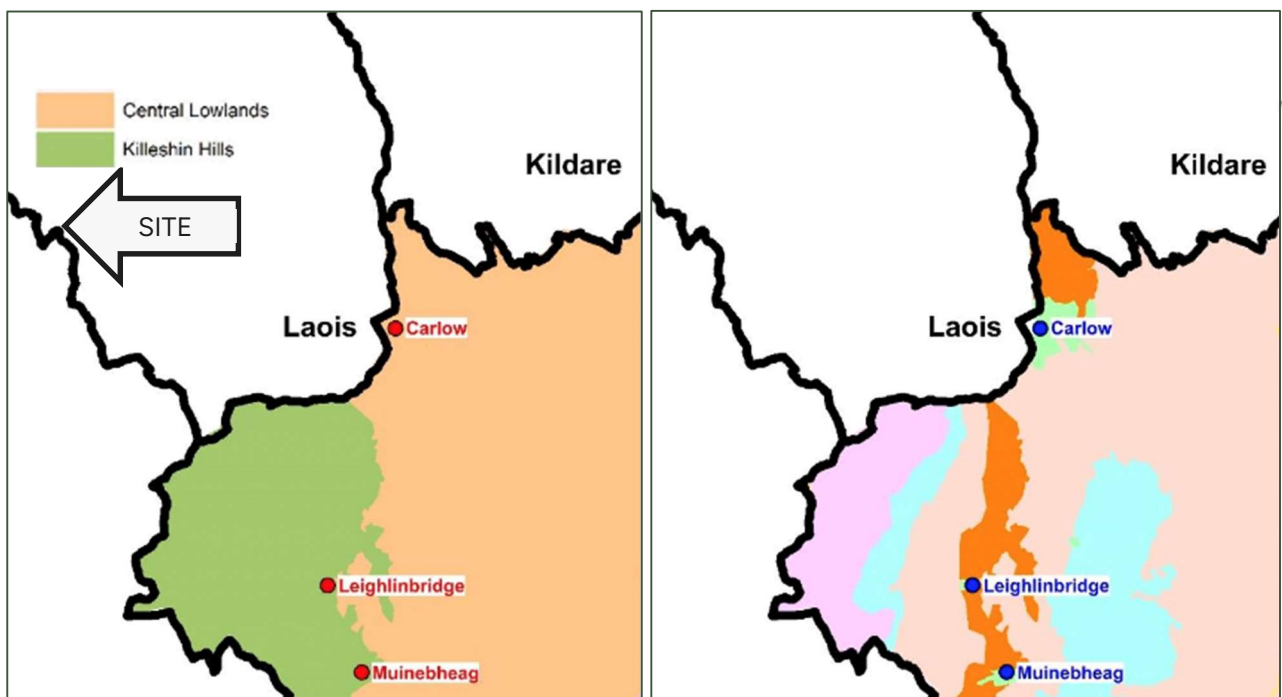


“Killeshin Hills Character Areas The area is almost entirely a rural agricultural landscape with a moderate level of sensitivity and moderate potential capacity to absorb different types of development. Due to its upland character and relative exposure, it has a low potential capacity to absorb rural housing or industrial development”

Additionally, within these LCAs, there are landscape types within the study area:

- Broad River Valley
- Built up areas (Carlow)
- Farmed Lowland
- Farmed Ridges
- Uplands

Figure 7-9 Carlow CDP Map 9.1 Landscape Character Areas and Map 9.2 Landscape



These are used to define the different sensitivities as per the table below. There are small sections of these different landscape sensitivities in an alternating manner along the county boundary into Laois, from west to east, this is Most (5) > Increasing (4) > Moderate/Decreasing (3/2) > Increasing (4) > Moderate/Decreasing (3/2) > Least (1) > Increasing (4). This generally coincides with the transition down the Castlecomer Plateaux to the Barrow River Valley.



Figure 7-10 Carlow CDP Landscape Sensitivity by Landscape Types

Sensitivity Mapping					
	SENSITIVITY				
	1 Least	2 Decreasing	3 Moderate	4 Increasing	5 Most
Built Up Areas					
Farmed Lowland				*	
Broad River Valley					
Farmed Ridges					
Narrow River Valley					
Rolling Rough Grazing					
Uplands					

Table 1 Assignment of Landscape Sensitivities to Principal Landscape Character Areas and Landscape Types from Locii and Cregan 2011 [Note that Farmed Lowland is classified as Increasing Sensitivity Level 4 south of Borris on account of small scale and proximity and inter-visibility with River Valleys and Uplands]

The 'Land Use Capacity Matrix' identifies that there is a 'Moderate' capacity for 'Wind Farming' Land Use Type within the Killeshin Hills and Central Lowlands.

The landscape and wind policies are considered with regards to the Proposed Development, however those of specific relevance are those which specifically refer to visual impact and scenic routes as this is primarily how the Proposed Development will relate to Carlow Co. These are outlined below.

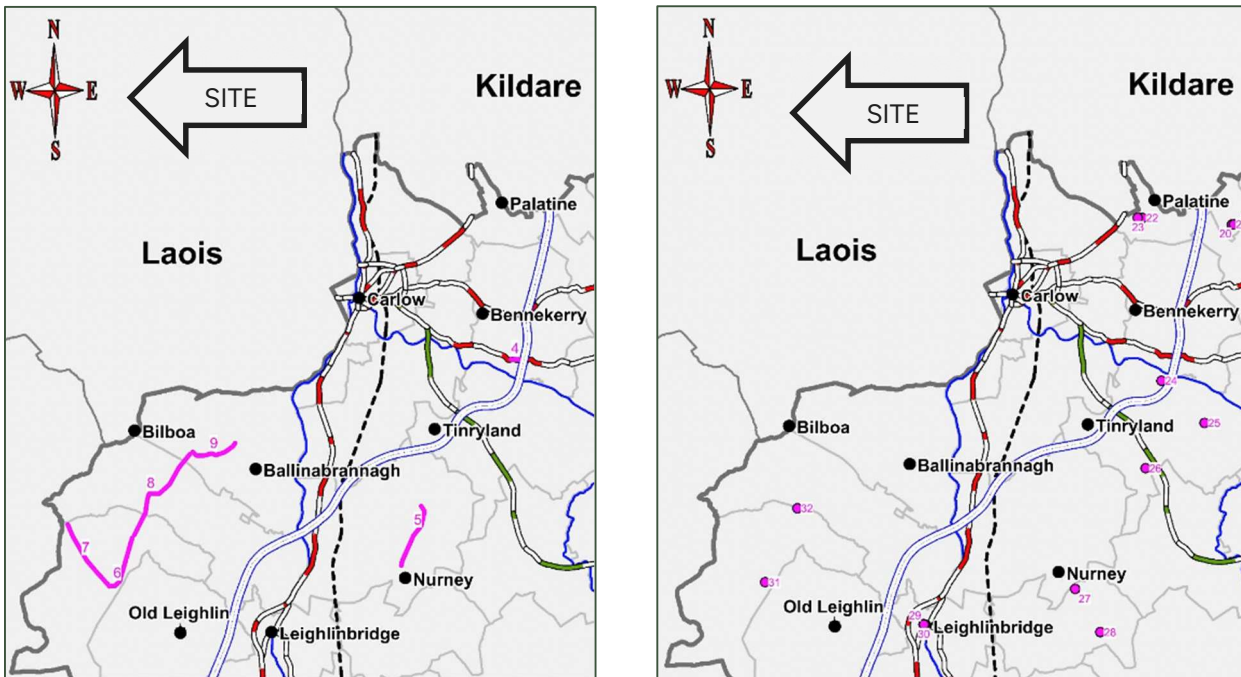
LA P2: *Ensure that development will not have a disproportionate landscape or visual impact in sensitive upland areas of the County (due to siting, layout, design or excessive scale, height and bulk) and will not significantly interfere with or detract from scenic upland vistas, when viewed from the surrounding environment, including nearby areas, scenic views and routes, and from settlements.*

LA P8: *Require, where appropriate, Landscape/Visual Impact Assessments to be prepared by suitably qualified professionals, for development proposals which may have significant landscape or visual impacts, and/or which are located within or adjacent to sensitive landscapes.*

The scenic routes and views within the study area are shown on the plan excerpts below, with a more detailed analysis in the visual baseline section.



Figure 7-11 Carlow CDP Map 9.4 Views and Prospects and Map 9.5 Scenic Routes



7.5 Visual

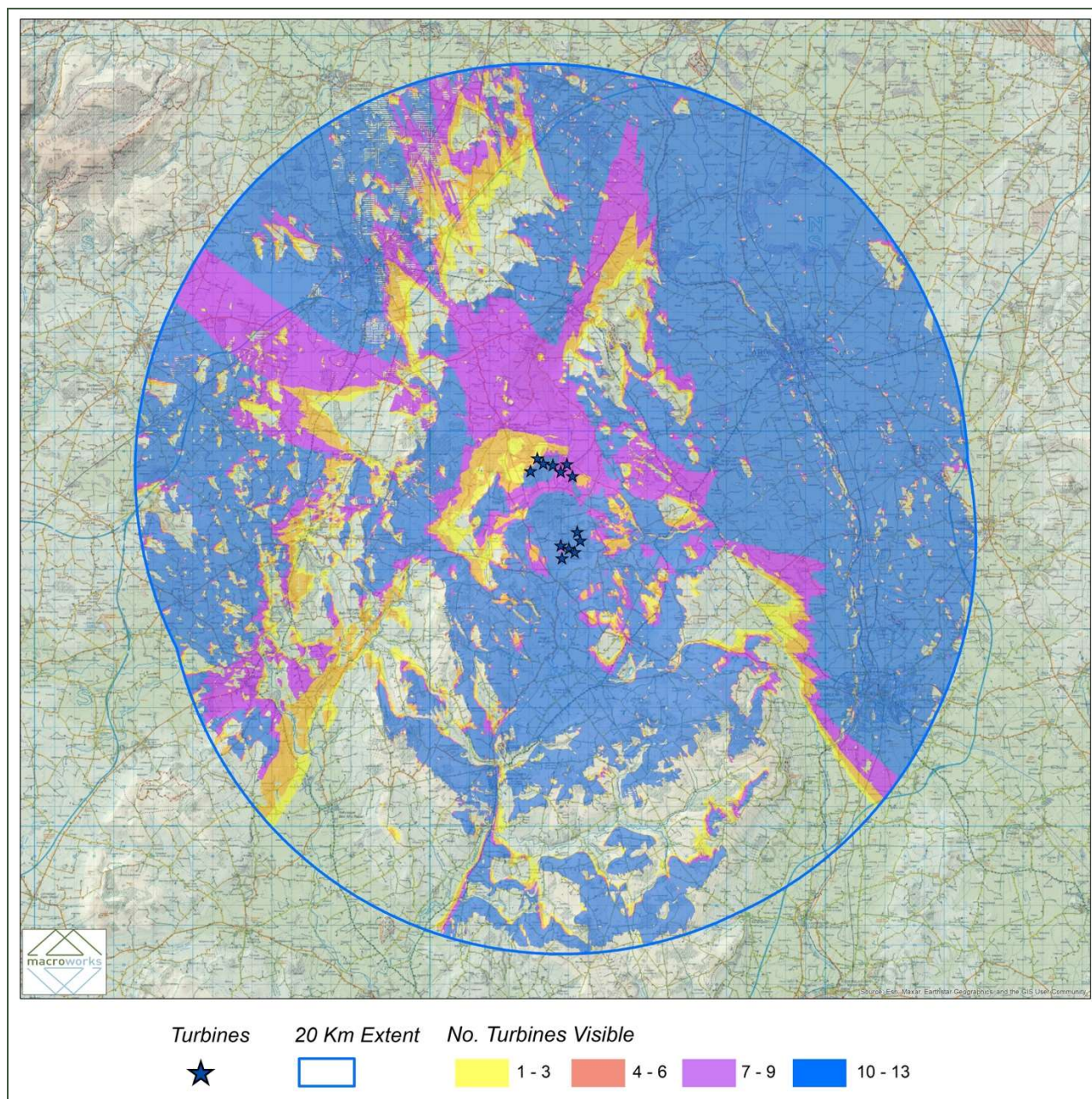
Only those parts of the Study Area that potentially afford views of the Proposed Development are of interest to this part of the assessment. Therefore, the first part of the visual baseline is establishing a 'Zone of Theoretical Visibility' and subsequently, identifying important visual receptors from which to base the visual impact assessment.

7.5.1 Zone of Theoretical Visibility (ZTV)

A computer-generated Zone of Theoretical Visibility (ZTV) map has been prepared to illustrate where the Proposed Development is potentially visible from. 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 complex vegetation patterns within this landscape, the main value of this form of ZTV mapping is to determine those parts of the landscape from which the Proposed Development will definitely not be visible, due to terrain screening within the Study Area.



Figure 7-12 Bare-ground Zone of Theoretical Visibility (ZTV) Map



The following key points are illustrated by the 'bare-ground' Wind Farm ZTV map (**Figure 7-12** refers):

- The ZTV map shows that comprehensive visibility of all the proposed turbines will be theoretically afforded from the central portions of the study area (<5km from the Site) to the south, and extending up to 10km. However generally, the lower relative elevation to the west, north, and east out to <10km from the Site results in varied degrees of visibility.
- There is a large block of comprehensive visibility to the northeast with relates to the opposite side of the Barrow Valley and flat landscape surrounding Athy, which principally comprises of large peatbogs and pastoral farmland. The same is true to the northwest surrounding Portlaoise.



- Within these areas throughout the wider surrounds of the 20km study radius consistent theoretical visibility begins to become patchy in places throughout the low rolling landscapes comprising of low hills and eskers. This is most evident in the southern portions of the study area where the potential visibility is limited to the crests and upper slopes of the Castlecomer Plateau.
- To the north, there are variable areas of potential visibility surrounding the hills which flank the Rock of Dunamase to the north of the Site and east of Portlaoise, with large areas of low/no theoretical visibility.
- Key receptors contained within the ZTV (i.e. with potential visibility) within the central study area include the settlements of Timahoe and Swan/The Swan in addition to the N70 and N78 national secondary routes and R426, R430 regional roads. The central study area also contains a network of local roads, rural residential dwellings and farmsteads, many of which will be afforded comprehensive theoretical visibility of the Proposed Development.
- Overall, the lowland landscape in the northeast of the study area experiences greater potential for visibility than the rolling landform to the south and southwest of the wider study area.

7.5.2 Views of Recognised Scenic Value

Views of recognised scenic value are primarily indicated within County Development Plans in the context of scenic views/routes designations, but they might also be indicated on touring maps, guide books, road side rest stops or on post cards that represent the area. The designated scenic views and routes are identified below, with the degree of visibility or direction of view relative to the identified scenic view orientation.

Table 7-6 Designated views within the 20km study area

ID	View Direction/Description	Direction relative to Site, location within ZTV	VRP (if applicable)
Laois County Development Plan 2021 - 2027			
Scenic View 001	Location: Road No. L3896 in the townlands Killeslin, Rossmore. Views towards lowlands of Graiguecullen/Carlow	Outside of ZTV, view direction away from Site	N/A
Scenic View 002	Location: N80 in the townlands of Stradbally [The Windy Gap]. Views of the Windy Gap	Outside of ZTV, view direction away from Site	N/A
Scenic View 003	Location: N80 in the townlands of Stradbally. Views of the Windy Gap	Outside of ZTV, view direction away from Site	N/A
Scenic View 004	Location: Road No. L5753 in the townlands Cullahill. Views towards Knockmannon Hill	Outside of ZTV, view direction away from Site	N/A
Scenic View 008	Location: N80 in the townlands of Stradbally, Portlaoise. Views towards Rock of Dunamase	Outside of ZTV, view direction away from Site	VP3
Scenic View 009	Location: View from: N80 in the townlands of Stradbally, View to: Portlaoise Views towards Hewson Hill	Outside of ZTV, view direction towards Site	N/A
Scenic View 011	Location: R445 in the townlands of The Heath. Views towards Carrigeen Hill	Outside of ZTV, view direction towards Site	N/A
Scenic View 012	Location: The village lands of Raheen. Views over farmland	Partial ZTV, view direction away from Site	VP8



ID	View Direction/Description	Direction relative to Site, location within ZTV	VRP (if applicable)
Scenic View 013	Location: N77 in the townlands of Abbeyliex, Durrow Views over farmland and River Nore	Partial ZTV, view direction away from Site	VP20
Scenic View 015	Location: R639 in the townlands of Cullahill, Durrow. Views over farmland and River Goul	Partial ZTV, view direction away from Site	N/A
Scenic View 018	Location: N80 in the townlands of Stradbally, View to: Views over farmland and River Bauteogue	Full ZTV visibility, view direction towards Site	VP4
Scenic View 019	Location: Road No. L3840 in the townlands of Timahoe. Views over farmland and Hewson Hill	Partial ZTV, view direction away from Site	VP10
Scenic View 020	Location: Road No. L3840 in the townlands of Timahoe. Views over farmland and Ballaghmore Hill	Partial ZTV, view direction away from Site	VP10
Scenic View 022	Location: Heywood Demense. Views of Mass Lough and of Ballymartin Hill beyond	Partial ZTV, view direction away from Site	N/A
Scenic View 023	Location: Heywood Demense Views over farmland and of Ballymartin Hill	Partial ZTV, view direction away from Site	N/A
Kilkenny City and County Development Plan Volume 1 County 2021-2027			
V12	Views overlooking Castlecomer and Ballyragget on the Castlecomer/Ballyragget Road (R694) between its junctions with road nos. LT5852 and LT5847.	Partially within ZTV, views away from Site	N/A
V13	Views southwest over Kilkenny City and southeast over Carlow on Ballysallagh/ Kanesbridge Road No. LP 1851 between the junctions with road nos. LT6654 and LS5886.	Partially within ZTV, views away from Site	N/A
V19	View west towards the Slieve Bloom Mountains on road no's LS5840 and LS5839 from the junction with road nos. LS5839 and LS5846 (Ballymartin Cross Roads).	Partially within ZTV, views away from Site	N/A
Carlow County Development Plan 2022 - 2028			
Scenic Route 6	Location: L7123-0, Ridge Cross Roads - Central Plain	Within ZTV, direction of view away from Site	N/A
Scenic Route 7	Location: L3037-11, Road to the Butts - Panorama across central plain,	Within ZTV, direction of view away from Site	VP27
Scenic Route 8	Location: L7130-26, Tomard Wood - Panorama to southeast	Generally outside ZTV, direction of view away from Site	N/A
Scenic Route 9	Location: L3041-19, Tomard Lower - Panorama across central plain	Generally outside ZTV, direction of view away from Site	N/A
Scenic View 22	Location: Palatine, Vista 90-140°, of central plain and avenue to Duckett's Grove	Within ZTV, direction of view away from Site	N/A
Scenic View 23	Location: Palatine, Vista 280-320°, panorama over central plain to Killeshin Hill	Within ZTV, Site within FOV	N/A
Scenic View 31	Location: Ridge Cross, Vista east, panorama across central plain to Blackstairs	Within ZTV, Site outside FOV	N/A
Scenic View 32	Location: Tuolcree Cross, Vista east, panorama from Killeshin Hills across central plain to Blackstairs	Within ZTV, Site outside FOV	N/A



ID	View Direction/Description	Direction relative to Site, location within ZTV	VRP (if applicable)
Scenic View 33	Location: Milford, View east and north, of River Barrow	Outside of ZTV, Site not aligned with river	N/A
Kildare County Development Plan 2023 – 2029			
Views of the River Barrow from bridges, adjacent lands and roads:			
RB1	Greese Bridge at Jerusalem Newtownpilsworth	Within ZTV, Site not aligned with views to river	VP12 (Representative)
RB2	Maganey Bridge at Maganey Lower	Within ZTV, Site not aligned with views to river	VP12 (Representative)
RB3	Tankardstown Bridge at Grangemellon	Within ZTV, Site not aligned with views to river	VP12 (Representative)
RB4	Bert Bridge at Tyrellstown	Within ZTV, Site not aligned with views to river	N/A
RB5	Dunrally Bridge at Lowtown	Within ZTV, Site not aligned with views to river	VP2
RB7	Mill Bridge at Levitstown	Partial ZTV, Site not aligned with views to the canal/river	VP12 (Representative)
RB9	Bunberry Bridge at Athy	Within ZTV, Site not aligned with view to river	VP12 (Representative)
RB11	Crom Abu Bridge at Athy	Within ZTV, Site not aligned with river	N/A
Views to and from bridges on the Grand Canal:			
GC29	Milltown Bridge, Moatstown	Within ZTV, Site not aligned with view to canal	N/A
GC38	27 th Lock Bridge, Monasterevin (Athy)	Partially within ZTV, Site not aligned with view to canal	N/A
Scenic Routes:			
Scenic Route 05	Location: Ardngross, Youngstown, Kilmead, Ardscull, Russellstown and Aghanure. Views of the Moate of Ardscull along the R418 from Russelstown crossroads to Kilmead.	Partially within ZTV, direction of view in opposite direction to Site	N/A
Scenic Route 22	Location: Burton Big, Ballinadrum, Glassely, Ballyadams and Lynamsgarden. Views across the Barrow valley, along the L8017 from Pinhill crossroads to Burton crossroads (N78).	Overlays edge of study area, within ZTV, views of Site over Barrow Valley	VP7 (Representative)

7.5.3 Existing environment

7.5.3.1 Centres of Population

The largest centres of population within the study area are located at relatively equal distances to the Proposed Development Site with Portlaoise 10km to the northwest, Carlow 11km to the southeast, and the slightly smaller centre of Athy 12km to the northeast.

Other centres of population across the study area are the towns of Abbeyleix (10km W), Stradbally (7.5km N), Castlecomer (11km S), and the smaller settlements of Timahoe (2.5km N), Ballyroan (8km NW), Durrow (16km W), Swan (1.5km S), Ballinakill (10km W), Newtown/Miners Walk (1.5km S), Ballylynan (Ballylinan) (7km E), Castledermot (20km).

The central study area also encompasses a dispersed rural population, with some within a kilometre of the Site. While the level areas feature a higher density of settlements, the rolling areas are covered by a scattering of standalone residences, located along winding lanes over the upland areas.



7.5.3.2 Transport Routes

The most notable transport feature within the study area is the M7 motorway which crosses the north of the study area through Portlaoise, at its closest it is 10km north/northwest of the Site. There is a second motorway, the M9, which skirts the east/southeast of the study area around Carlow, 18km from the Proposed Development at its closest point.

There are a number of national roads which connect the aforementioned main centres and motorways across the study area. The N80 and N78 both cross the study area, and intersect 5km east of the Proposed Development Site. The N80 runs northwest/southeast, from Portlaoise to Carlow, while the N78 runs northeast to southwest, from Athy to Castlecomer. The third national road within the study area is the N77, which connects Portlaoise with Abbeyleix and Durrow in a north/south direction around the west of the study area, and is 11km west of the Site at its nearest point.

Regional roads provide further connectivity across the study area and between the smaller settlements. The nearest to the Proposed Development Site is the R426 and the R430, both to the west/southwest. Other regional roads include the R427, R429, R428, R425, and in the wider study area, the R418, R417 (both along the Barrow River/to Athy), the cluster at Carlow (R726, R725, R448), and at Abbeyleix (R432, R433).

Alternative transport routes include the Grand Canal to the northwest of the study area, and the rail lines which run through Athy/Carlow and Portlaoise, entering the study area from the north and diverging to the southeast (14km to the east of the Proposed Development Site) and southwest (13km to the northwest of the Proposed Development Site) respectively.

7.5.3.3 Tourism, Amenity and Heritage features

While there are many features across the study area, the Rock of Dunmase *“is an imposing and magnificent example of a Celtic fortification overlooking the valley of the O’Moore’s”*¹ is located 10km north of the Proposed Development Site and features signposting and parking facilities.

Timahoe Round Tower (2.5km NW) is a smaller structure, however is of local significance and described as *“the carved Romanesque doorway gives the Timahoe Round Tower, County Laois, the designation of one of the most elegant round towers in Ireland. Built at some point in the 1100s, it is on the site of a monastery founded by Saint Mochua around 600A.D.”* Timahoe features a heritage centre with visitor facilities and attractions, enhancing the tourism/amenity value of the tower itself.

The waterways of the study feature a collection of recreational, historic and amenity features, with the Barrow Way along the Barrow River and Grand Canal. This features a number of info points and historic structures such as bridges and locks (on the Canal). There is a concentration of such features around Athy, where the Grand Canal joins the Barrow (12km east). The River Nore passes through the De Vesci Estate to the west of Abbeyleix, but is otherwise limited to adding visual amenity where it passes by transport routes or population centres – where there is generally a woodland with walking and biodiversity values.

¹ <https://www.discoverireland.ie/laois/rock-of-dunamase>

² <https://www.discoverireland.ie/laois/timahoe-round-tower>



As mentioned in the land use section, there is a collection of Historic Residences, Estates, and gardens across the study area. The largest of these are Emo Court (17km N), De Vesce Estate (13km W), and Stradbally Hall and Park/Festival venue (6km N). Across the study area, there is also Burton House and Gardens (19km), Ballinubbert Gardens and House (7km), Kilkea Castle Hotel and Golf Resort (16km), the eastern edge of Ballyfin Estate/Demesne (20km NW). These provide a variety of outdoor recreation activities, which are complimented by the other sites in the surrounding landscape, such as Abbeyleix Bog Reserve (12km) and Castlecomer Discovery Park (8km). Smaller local features are: Oughaval Woods Walks (6km), Durrow Woods Walks (15km), Moore Abbey Woods (20km), Mullaghreelan Wood/Rath (17km), Rockview walkways (8km), Cullenagh Mountain (5km), Killeshin Waterworks amenity park and walks

Smaller structures and features of local historic value (as opposed to the national significance of the Rock of Dunamase and Grand Canal), are Oughaval Church & Cemetery, Ballyadams Castle, Tullamoy Castle, Rheban Castle, Dysart-enos Church, Pass of the Plumes, Durrow Castle, Fossy Church, Druids Altar. A number of others feature within built up areas, such as White Castle in Athy, Carlow Castle and the Brownhill Portal in Carlow. Killeshin, although a smaller settlement, has a cluster of features, with church ruins featuring an acclaimed Romanesque doorway, notable grave sites, and a mass rock further upslope to the west.

7.5.4 Identification of Viewshed Reference Points as a Basis for Assessment

The results of the ZTV analysis provide a basis for the selection of Viewshed Reference Points (VRP's), which are the locations used to study the landscape and visual impact of the Proposed Development in detail. It is not warranted to include each and 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 Proposed Development. Instead, a variety of receptor locations was selected that are likely to provide views of the Proposed Development 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);
- Designated Scenic Routes and Views;
- Local Community views;
- Centres of Population;
- Major Routes; and
- Amenity and heritage features.

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 the way in which the view is experienced. These are described below.

7.5.4.1 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.

7.5.4.2 Designated Scenic Routes and Views

Due to their identification in the relevant County Development Plans 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.

7.5.4.3 Local Community Views

This type of VRP represents those people who live and/or work in the locality of the proposed EIA Development, usually within a 5km radius of the Proposed Development Site. 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 in order to sample the spectrum of views that would be available from surrounding dwellings.

7.5.4.4 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 or its proximity to the Proposed Development site. The VRP may be selected from any location within the public domain that provides a clear view either within the settlement or in close proximity to it.

7.5.4.5 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 Site, but with a preference towards close and/or elevated views. Major routes typically provide views experienced whilst in motion and these may be fleeting and intermittent depending on screening by intervening vegetation or buildings.

7.5.4.6 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.

The Viewshed Reference Points selected in this instance are set out in **Table 7-7** below and shown on the VP selection Map in the Photomontage Booklet.

Table 7-7 Outline description of selected Viewshed Reference Points (see also VRP map at Technical Appendix 7.1)

VRP No.	Location	Receptor/Representative of:	Distance to Site (km)	Direction of view
VP1	Emo Court	<ul style="list-style-type: none"> Amenity and heritage features. 	17.9km	S
VP2	R427 at Dunrally Bridge	<ul style="list-style-type: none"> Designated Scenic Routes and Views; Local Community views; Amenity and heritage features. 	15.1km	SW
VP3	Rock of Dunamase	<ul style="list-style-type: none"> Key Views (from features of national or international importance); Designated Scenic Routes and Views; Amenity and heritage features. 	9.9km	S
VP4	N80 at Rathallagh	<ul style="list-style-type: none"> Designated Scenic Routes and Views; Local Community views; Major Routes; 	8.7km	S
VP5	Portlaoise Rugby Club	<ul style="list-style-type: none"> Local Community views; Centres of Population; 	11.7km	SE
VP6	N78 at Athy	<ul style="list-style-type: none"> Local Community views; Centres of Population; Major Routes; 	11.2km	SW
VP7	R418 at Nicholastown Cross Roads	<ul style="list-style-type: none"> Designated Scenic Routes and Views; Local Community views; Major Routes; 	15.9km	SW
VP8	L2680 at Raheen	<ul style="list-style-type: none"> Designated Scenic Routes and Views; Local Community views; 	12.8km	SW
VP9	L7797 at Timahoe	<ul style="list-style-type: none"> Local Community views; Centres of Population; Amenity and heritage features. 	2.5km	S
VP10	L3840 at Fallowbeg	<ul style="list-style-type: none"> Designated Scenic Routes and Views; Local Community views; 	1.8km	S
VP11	L3850 at Luggacurren	<ul style="list-style-type: none"> Local Community views; Centres of Population; Amenity and heritage features. 	1.8km	W&SW
VP12	R417 at Levitstown	<ul style="list-style-type: none"> Designated Scenic Routes and Views; Local Community views; Major Routes; and Amenity and heritage features. 	13.8km	W
VP13	L3851 at Knocklead	<ul style="list-style-type: none"> Local Community views; 	1.0km	N&S



VRP No.	Location	Receptor/Representative of:	Distance to Site (km)	Direction of view
VP14	L7791 at Baunogemeely Cross Roads	<ul style="list-style-type: none"> Local Community views; 	2km	E
VP15	L3851 at Pheлим's Cross	<ul style="list-style-type: none"> Local Community views; 	1.5km	W
VP16	L38582 at Aghadreen	<ul style="list-style-type: none"> Local Community views; 	1.3km	N & E
VP17	R430 at Boleybeg	<ul style="list-style-type: none"> Local Community views; Major Routes; 	7km	E
VP18	Wolfhill	<ul style="list-style-type: none"> Local Community views; Centres of Population; 	1.1 km	W
VP18a	Wolfhill National School	<ul style="list-style-type: none"> Local Community views; Centres of Population; 	1.2km	NW
VP19	R426 and R430 junction at The Swan	<ul style="list-style-type: none"> Local Community views; Centres of Population; Major Routes; 	1.2km	N
VP19a	R426 south of junction with R430 in The Swan	<ul style="list-style-type: none"> Local Community views; Centres of Population; Major Routes; 	1.3 km	N
VP19b	The Swan Community Centre and Pitch	<ul style="list-style-type: none"> Local Community views; Centres of Population; Major Routes; 	2.0 km	N
VP20	N77 at Killamuck	<ul style="list-style-type: none"> Designated Scenic Routes and Views; Local Community views; Major Routes; 	13.9km	NE
VP21	N77 at Durrow	<ul style="list-style-type: none"> Local Community views; Centres of Population; Major Routes; 	16.9km	NE
VP22	N78 at Newtown/Crettyard GAA	<ul style="list-style-type: none"> Local Community views; Centres of Population; Major Routes; 	5.1km	N
VP23	N78 at Cloneen	<ul style="list-style-type: none"> Local Community views; Major Routes; 	6.8km	N
VP24	L3896 at Ardateggle	<ul style="list-style-type: none"> Local Community views; 	10.8km	N
VP25	R340 at Graiguecullen	<ul style="list-style-type: none"> Centres of Population; Major Routes; 	15km	NW
VP26	R694 at Barrack Hill, Castlecomer	<ul style="list-style-type: none"> Local Community views; Centres of Population; Major Routes; 	11.2km	N/NE
VP27	L3037 at The Butts	<ul style="list-style-type: none"> Designated Scenic Routes and Views; Local Community views; 	16.3km	N



7.5.5 Cumulative Baseline

Within the Study Area is one existing wind farm and four permitted wind farms. Most (four) of these are contained in the rolling upland areas of the Castlecomer Plateau/Killeshin Hills to the south of the Proposed Development Site, in similar landscape context to the proposal and separated by landform change from the surrounding pastoral and more populated areas. There is one permitted wind farm located to the west of the Site, on Cullenagh Hill, slightly separated from the more uniform upland area, and separated from the Site by more lowland pastoral landscapes, however this is similar in that it is across a locally elevated area with a mix of landcovers, dominated by conifer forestry and pasture.

Table 7-8 Cumulative Wind Farms within the Study Area (as of March 2023)

Wind Farm Name	Number of Turbines	Distance and Direction from the Development Site	Status
Gortahile	8	11km southeast	Existing
Cullenagh	18	3.8km west	Permitted
Pinewoods	11	5km west/southwest	Permitted
Bilboa	5	14km southeast	Permitted
Lisdowney	7	16.5km south	Permitted

7.6 Assessment of Potential Effects

7.6.1 Do nothing Effects

In this instance the do-nothing effect would be that the receiving landscape stays in the same or similar condition as it currently is, with the patchwork of different vegetation types and loose network of local roads scattered with rural residences. The cycle of forestry which is currently implemented across the landscape will remain in place with the Proposed Development.

7.6.2 Landscape Impacts

Landscape impacts are assessed on the basis landscape sensitivity weighed against the magnitude of physical landscape effects within the Proposed Development Site and effects on landscape character within the wider landscape setting. This wider setting is considered in respect of the immediately surrounding landscape (<5km) as well as the broader scale of the Study Area (5-20km).

7.6.3 Landscape Character Value and Sensitivity

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 Site/central study area and wider Study Area for the Proposed Development.

7.6.3.1 Central Study Area (<5km)

As identified in the policy context section, the increase sensitivity rating and value of the landscape generally correlates with the presence of upland areas and/or waterways, such as the Barrow River Corridor (within the Kildare, Carlow, Kilkenny County Development Plans/Landscape Character Assessments) and Castlecomer Plateau (in Laois, Carlow, Kilkenny County Development Plans/Landscape Character Assessments). In this case, the central study area is defined by the presence of upland areas, and the transition from these areas to the wider study area, which is described below, but is generally defined by lower elevation, more level topography and the Barrow River Valley. The Proposed Development



Site is located on the northern periphery of the larger upland areas which characterise the southern half of the study area. As such, to the south of the central study area, the landscape character is defined by rolling elevated topography, with minor waterways, associated valleys, and a high proportion of conifer forestry patches. The character can transition from open, with panoramic, elevated views to shallow valleys navigated by narrow local roads, generally with a high level of vegetation (further enclosing and limiting visibility). The northern cluster of the Proposed Development is located on Fossy Mountain, from which the landform slopes away to the north, into more developed pasture with a higher degree of occupation, including Timahoe village to the north/northwest. The southern cluster of proposed turbines is separated from the northern cluster and Fossy Mountain by an area of slightly more open landform, pastoral (open) landuse, and approximately 100m of elevation change.

The northern face of Fossy Mountain is well defined by short sections of steeper topography, as well as the high proportion of forestry to pasture which is contained within small fields and densely tree-d hedgerows. The size of fields and degree of vegetation reduces across the level, topography at the base of this transition. This character change is interrupted to the northwest and northeast, where there are localised hill areas which more closely resemble the upland areas. Smaller sections of higher sensitivity are focused around Timahoe, both in terms of its built heritage, and the natural heritage of the eskers further north.

To the southeast, the central study area is defined by the N78 corridor, which winds up the from the lowlands to the east and southwest to Castlecomer. The landscape to the south of the central study area is more uniform, with less dramatic changes in elevation, and a network of more substantial road corridors (R426, R430, N78) between a number of smaller settlements (Glonsa, Wolfhill, Crosskeys Court, Swan/Clarmallagh, Spink). Generally, the central study area reflects the location of the array over the northern periphery of a broader upland area. The northeast of the array presents as a transitional landscape, which features a steep decrease in elevation and change in landcover dominated by small fields and conifers down to a more settled rural pastoral character. In contrast to the southwest, there is a lesser degree of landscape character change with more subtle variations across the undulating landform towards Castlecomer.

Even though the Laois County Development Plan (Landscape Character Assessment) identifies the central study area as being of 'High' sensitivity it is not considered that this is a particularly rare, naturalistic or iconic landscape. Instead, most of its value is derived from rural productivity and sustenance of the rural economy. Furthermore, in accordance with the GLVIA (2013) Landscape and Visual specialists have consideration to pre-existing Landscape Character Assessments, but ultimately use more universal sensitivity criteria that could be applied equally across all of the Irish Landscape. In this context, the landscape sensitivity of the central study area is deemed to be **Medium**).

7.6.3.2 Wider Wind Farm Study Area (5 -20km)

The wider wind farm study area is the extrapolation of the patterns seen in the central study area, with the introduction of an additional 'sensitive' landscape feature, with the Barrow River and Grand Canal running north/south the length of the study area. The Nore River also adds sensitivity to the south/west of the study area, however to a lesser degree than the Barrow, as the scale of the landscape is not as wide. The wider study area is also punctuated with the largest population centres in this assessment, with Portlaoise to the northwest and Carlow to the Southeast (with the addition of Athy to the northeast and Castlecomer, Abbeyleix and Durrrow etc to the southwest). As with the central study area, the north is substantially open with large areas of industrialised agriculture and associated



field sizes, while the south and west are more varied and defined by the upland Castlecomer Plateau. Of these, the most sensitive landscape context is surrounding the Barrow River and Grand Canal, for both heritage and natural amenity values – as identified in the Kildare and Carlow County Development Plans, where this landscape is consistently in the higher sensitivity and value classifications. It should be noted that this designation is closely aligned with the River and Canal corridors themselves, and does not extend into the surrounding context which contrastingly, are generally lower sensitivity due to the utilitarian rural character. However, there are discrete locations of higher value across the study area where scenic or heritage features are located, in particular the Rock of Dunamase and the myriad of stately houses with park and woodland grounds. Given the variation of the wider study area, the landscape sensitivity is deemed **Medium-Low**.

7.6.4 Magnitude of potential Landscape Impacts

The physical landscape as well as the character of the Proposed Development and its central Study Area (<5km) is affected by the proposed wind turbines as well as ancillary development such as access and circulation roads, areas of hard standing for the turbines, borrow pits, grid connection and the substation compound. By contrast, for the wider landscape of the Study Area, landscape impacts relate exclusively to the influence of the proposed turbines on landscape character. The aspects of the Proposed Development that are likely to have an impact on the physical landscape and landscape character are described in Chapter 3: Description of the Development.

7.6.4.1 Construction

It is considered that the Proposed Development will have a modest physical impact on the landscape within the Proposed Development Site as none of the Proposed Development features have a large 'footprint' and current landcover is generally modified through the management of commercial forestry. However, this consequently results in the removal of any existing vegetation (total of c.60 -70ha). The topography and land cover of the proposed Site will remain largely unaltered with construction being limited to Access Tracks, Turbine Hardstands, the On-site Substation and Control Building compound, Temporary Construction Compound and proposed Met Mast. 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 re-graded to marry into existing site levels and reseeded appropriately in conjunction with advice from the project ecologist.

The finalised internal Access Track layout has been designed to take advantage of the existing road and track network within the surrounding landscape. The track network has also been designed to avoid environmental constraints, and every effort has been made to minimise the length of new internal roadways. There will be an intensity of construction stage activity associated with the turbine access tracks and turbine hardstands consisting of the movement of heavy machinery and materials, but this will be temporary/short term in duration and transient in location. The construction stage effects on landscape character from these activities will be minor.

There will be one 110kV on-site substation constructed to collect the generated power from the Proposed Development before connecting to the grid connection at either the Option 1 or Option 2 substations. All electrical cabling will be underground within the local road network.

The proposed on-site substation will be located just south of the northern cluster of turbines (Fossy) of the entrance road to the Site at its western side in an area of existing commercial forestry – some of which will need to be 'key-hole' felled to accommodate the substation. The most notable construction stage landscape impacts resulting from the



proposed on-site substation relate to the minor levelling of the Site to form a level platform and the same construction movements and associated impacts for the construction outlined above.

All proposed internal Site cabling will be underground and will follow its access tracks 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 commercial forestry landscape setting.

Site activity will be at its greatest during the construction phase due to the operation of machinery on site and movement of heavy vehicles to and from site. This phase will have a more significant impact on the character of the Site and cable routes than the operational phase, but it is a 'short-term' impact that will cease as soon as the Proposed Development is constructed and becomes operational (approximately 18 months from the commencement of construction).

There will be some long term/permanent construction stage effects on the physical landscape in the form of turbine foundations and hardstands, access tracks and a substation, but only the substation is proposed to remain in perpetuity as part of the national grid network. It is likely that with the exception of residually useful access tracks, all other development features will be removed from the Site and it will be reinstated / restored to the prevailing land cover as part of the proposed decommissioning process. Thus, the construction stage landscape effects of the Proposed Development are largely reversible.

There will be some construction stage effects on landscape character generated by the intensity of construction activities (workers and heavy machinery) as well as areas of bare-ground and stockpiling of materials as identified in the Construction and Environmental Management Plan (CEMP). Such effects will be temporary/short term in duration and are, therefore, not considered to be significant. Overall, construction stage landscape effects are considered to be of a High-medium magnitude within the Site and its immediate surrounds (<1km), diminishing to Medium and Low thereafter as ground-level construction activities become screened by intervening terrain and vegetation leaving the emerging turbines as the only noticeable element to influence landscape character.

7.6.4.2 Operational Stage Effects on Landscape Character

For most commercial wind energy developments, the greatest potential for landscape impacts to occur is as a result of the change in character of the immediate area due to the introduction of tall structures with moving components. Thus, wind turbines that may not have been a characteristic feature of the area become a new defining element of that landscape character. In this instance, wind turbines are not a characteristic feature of the northern study area, located only in the south of the study area where there is one existing wind farm. The Proposed Development will be similar to Gortahile (the existing wind farm) in generally aligning with the upland areas, separated from the surrounding pastoral landscape by transitional topography resulting in a level of legibility and relationship between elevation and land use which is the Proposed Development is consistent with. However, these developments are well spaced, and do not directly relate to one another.

The Proposed Development will add to the scale, intensity and diversity of built development within the study area and will reduce the sense of rural tranquillity in the least developed sections of the rural uplands that occur in the heart of the study area. However, in terms of scale and function it is also a compatible form of land use within this landscape of broad scale land form and land use patterns where values are associated with rural



productivity and the Proposed Development represents a supplementary, rather than alternative, layer of productivity. In this respect, the Proposed Development follows the pattern of forestry development on the highest and steepest sections of the receiving landscape which are less compatible with pastoral farming. The proposed turbines will not generate a sense of scale conflict in this transitional upland rural setting, which is characteristic of the type of landscape that has been the focus of wind energy development in Ireland for more than two decades. It is the same type of landscape as the Castlecomer Plateau to the south where existing wind energy developments are already a familiar feature and will become more so as permitted developments are constructed in the coming years.

7.6.4.3 Decommissioning

It is important to note that in terms of duration, this Proposed Development I represents a long term, but not permanent impact on the landscape and is reversible. The proposed lifespan of the Project is 35 years, after which time it will be dismantled and the landscape reinstated to prevailing conditions. Within 2-3 years of decommissioning there will be little evidence that the Proposed Development ever existed on the Site.

The decommissioning phase will have similar temporary impacts as the construction phase with the movement of large turbine components away from the Site. There may be a minor loss of roadside and trackside vegetation that has grown during the operational phase of the Proposed Development, but this can be reinstated upon completion of decommissioning. Areas of hard standing that are of no further use will be reinstated and reseeded to blend with the prevailing surrounding land cover of the time. It is expected that the decommissioning phase would be completed within a period of approximately 6 months.

In summary, there will be physical impacts on the land cover of the Proposed Development Site as a result of the Proposed Development during the operational phase, but these will be relatively minor in the context of this productive rural landscape that comprises of a mixture of land uses, principally extensive areas of commercial conifer forest. The scale of the Proposed Development will be well assimilated within its landscape context without undue conflicts of scale with underlying land form and land use patterns. For these reasons the magnitude of the landscape impact is deemed to be High-medium within the Site and its immediate environs (c.1km) reducing to Medium for the remainder of the central Study Area. Beyond 5km from the Site, the magnitude of landscape impact is deemed to reduce to Low and Negligible at increasing distances as the Proposed Development becomes a proportionately smaller and integrated component of the overall landscape fabric.

7.6.5 Significance of Potential Landscape Effects

The significance of landscape impacts is a function of landscape sensitivity weighed against the magnitude of landscape impact. This is derived from the significance matrix (Table 7.3) used in combination with professional judgement.

In terms of the significance of landscape effects for the Proposed Development, the combination of a Medium sensitivity judgement for the Site and its immediate context coupled with a High-medium magnitude of construction stage impact will result in a **Substantial-moderate** significance of construction stage effect. However, this effect will be **Temporary** in duration and mainly experienced within 1km of construction operations and diminishing thereafter at greater separation distances.

The same Medium sensitivity judgement when coupled with a Medium magnitude of operational stage landscape impact is considered to result in a **Moderate** significance of



landscape effect within the Site and central study area reducing to Moderate-slight and Slight at increasing distances as the Proposed Development becomes a proportionality smaller component of the wider study area which is also deemed to be generally of a lesser sensitivity than the central study area.

7.6.6 Visual Effects

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 27 selected representative viewpoint locations has been placed into Technical Appendix 7.1 found in Volume III of this EIAR. This section should be read in conjunction with both Technical Appendix 7.1 and the associated photomontage set contained in a separate booklet accompanying the EIAR. A summary table is provided below, which collates the assessment of visual impacts (**Table 7-9** below). A discussion of the results is provided thereafter.

Table 7-9 Summary of Visual Impact Assessment at Representative Viewpoint Locations (Appendix 7.1)

VP No.	Distance to nearest turbine	Visual Receptor Sensitivity	Magnitude of Visual Impact	Visual Impact Significance
VP1	17.9km	High-medium	Negligible	Imperceptible/ Neutral/ Long-term
VP2	15.1km	Medium	Negligible	Imperceptible/ Neutral/ Long-term
VP3	9.9km	High	Negligible	Imperceptible/ Neutral/ Long-term
VP4	8.7km	High-medium	Low	Slight/ Negative/ Long-term
VP5	11.7km	Medium-low	Low	Slight/ Negative/ Long-term
VP6	11.2km	Medium-low	Low	Slight/ Negative/ Long-term
VP7	15.9km	High-medium	Low	Moderate-Slight/ Negative/ Long-term
VP8	12.8km	Medium	Negligible	Imperceptible/ Neutral/ Long-term
VP9	2.5km	Medium	Medium	Moderate/ Negative/ Long-term
VP10	1.8km	High-medium	Medium	Moderate/



VP No.	Distance to nearest turbine	Visual Receptor Sensitivity	Magnitude of Visual Impact	Visual Impact Significance
				Negative/ Long-term
VP11	1.8km	Medium-low	Medium	Moderate/ Negative/ Long-term
VP12	13.8km	Medium-low	Negligible	Imperceptible/ Neutral/ Long-term
VP13	1.0km	Medium-low	High-medium	Moderate/ Negative/ Long-term
VP14	2km	Medium-low	Medium-low	Moderate-slight/ Negative/ Long-term
VP15	1.5km	Medium-low	Medium-low	Moderate-slight/ Negative/ Long-term
VP16	1.3km	Medium-low	High-medium	Moderate-slight/ Negative/ Long-term
VP17	7km	Medium-low	Low	Slight/ Negative/ Long-term
VP18	1.1 km	Medium	High-medium	Moderate Negative/ Long-term
VP18a	1.2km	Medium-low	Low	Slight/ Negative/ Long-term
VP19	1.2km	Medium-low	Medium	Moderate-slight/ Negative/ Long-term
VP19a	1.3 km	Medium-low	Medium	Moderate-slight/ Negative/ Long-term
VP19b	2.0 km	Medium-low	Low	Slight/ Negative/ Long-term
VP20	13.9km	Medium-low	Negligible	Imperceptible/ Neutral/ Long-term
VP21	16.9km	Low	Negligible	Imperceptible/ Neutral/ Long-term



VP No.	Distance to nearest turbine	Visual Receptor Sensitivity	Magnitude of Visual Impact	Visual Impact Significance
VP22	5.1km	Low	Low- Negligible	Slight-imperceptible/ Neutral/ Long-term
VP23	6.8km	Medium	Medium	Moderate-slight/ Negative/ Long-term
VP24	10.8km	Medium-low	Low	Slight-imperceptible/ Neutral/ Long-term
VP25	15km	Low	Negligible	Imperceptible/ Neutral/ Long-term
VP26	11.2km	Medium-low	Negligible	Imperceptible/ Neutral/ Long-term
VP27	16.3km	High-medium	Negligible	Imperceptible/ Neutral/ Long-term

7.6.7 Visual Impact summary

With regards to overall patterns of how the Proposed Development is experienced, this is generally based on proximity to either cluster of turbines, as there are few instances where both are clearly visible, and the two clusters differ in their relationship with the surrounding landscape and visual receptors. The northern cluster is located in the more prominent location, both physically in relative elevation, and contextually, placed across the highest section of the Fossy ridgeline overlooking the surrounding landscape from above the steeper slopes to the north, west, and east. In contrast, the southern cluster, despite being located across the same upland area, is located more centrally within a forested basin of the upland area and with more consistent surroundings in terms of land form and land cover. This is reflected in the type of views which are experienced. The northern cluster features a higher proportion of full turbines clearly visible from the surrounding lowlands, while the southern cluster is more often partially screened, introducing a degree of ambiguity in terms of location and context to the viewer. The northern array clearly relates to Fossy Mountain, separated (often) from the viewer by the steep transitions between the pastoral and upland landscape character areas. The southern cluster is generally viewed (VPs 16, 18, 19, 22, 24, 23, 26) from within similar landscape to the array, while the northern cluster is viewed from outside of the upland landscape context (VP 1,2,3,4,5,6,7,8,9,12).

Visual impacts from representative viewpoints will be summarised below, beginning with the least impacted. To the north of the study area, there are two of the more sensitive locations within the study area, specifically the Rock of Dunamase (High Sensitivity), and Emo Court (High-medium). Neither of these have views, resulting in 'Negligible' magnitude of visual impact to the Site and therefore the final Visual Impact Significance is 'Imperceptible/Neutral/Long Term'. Other views with 'Imperceptible/Neutral/Long-term' impact significance are distributed across the study area, these include VP2 (R427 at Durrally Birdge), which is Medium sensitivity due to the presence of the Kildare Scenic



Designation. VP8 (L2680 at Raheen) and VP12 (R417 at Levitstown) are also representative of scenic designations, although the scenic designations are generally not directed at the Proposed Development Site, however this is secondary to the lack of visibility to the Site from this location. Finally, the south of the study area features a further five (VP20, 21, 25, 26 and 27) views which have been assigned 'Imperceptible/Neutral/Long term' visual impact significance. In many of these cases, representative viewpoints were selected as 'illustrative views', principally to illustrate the absence of visual impacts at important sensitive receptors.

There are a number of views where a 'Low' magnitude of visual impact is experienced, generally through distance or partial visibility of the scheme due to intervening screening. These occur to the north of the study area in VP4, 5, 6, 7. Of these, two (VP4 N80 at Rathsallagh and VP7 R418 at Nicholastown Cross Roads) are deemed to be of High-medium sensitivity, due to their representation of scenic designations, while the VP5 and VP6 are generally representative of the surrounding landscape context, and of Medium-Low sensitivity. This results in VP4 and VP7 being Moderate-slight, while VP5 and VP6 are both 'Slight' visual impact significance. Over the south of the study area, VP17, VP22, and VP24 are all representative of local community views and experience Low to Low-Negligible Impacts, resulting in a visual impact significance of Slight and Slight-Imperceptible.

There are four views located across the rolling upland areas between the two clusters, all of which are representative of local community views and deemed to be of Medium-low sensitivity as they represent typical rural views that may be valued locally, but not necessarily by the wider population. There are two views (VP14, VP15) which experience Medium-low impacts, resulting in Moderate-slight/Negative/Long term impacts. Meanwhile, VP13 and VP16 experience High-Medium magnitude of impacts, with an overall significance of 'Moderate' at VP13 and 'Moderate-slight' at VP16. These 'High-medium' magnitude of visual impacts are the highest experienced at any view within this assessment, and are generally related to the proximity of the array to the viewer and the intervening landscape, in particular where some scale conflict may occur, combined with the presence of turbines 'surrounding' the viewer context.

To the immediate north of the Proposed Development Site, there are a further 3 views which are attributed medium to medium-low sensitivity. The most sensitive of these (VP9 – Medium sensitivity) is located within the village of Timahoe. This higher sensitivity is applied due to the presence of historic and amenity features within the wider viewer context (the Timahoe Round Tower). Meanwhile, VP10 and VP11 are Medium-Low sensitivity, due to the typical rural context which is common across this part of the study area. All three views experience Medium Magnitude of visual impact due to the relative visual prominence of the northern cluster of turbines. This results in a final visual impact significance of 'Moderate'. Of similar sensitivity and impact is VP23, however this is located in the south of the study area, along the N78, which is one of the few locations where there is clear visibility along the length of the scheme. The overall visual impact significance experienced at VP23 is deemed to be Moderate-slight.

Two of the closest centres of population to the Proposed Development Site are the dispersed rural settlement of Wolfhill, which lies to the southeast of the southern turbine cluster, and the village of 'The Swan' which lies to the south of this cluster. Whilst Wolfhill is located on the upland spine that hosts the Site. The Swan is located in the valley below. Two viewpoints were used to represent Wolfhill; VP18 is from an open and exposed location and VP18a represents the view from the front of Wolfhill National School. The latter illustrates the degree of screening by foreground roadside vegetation, which keeps the visual impact to a Slight significance. However, from VP18 the near view of the



southern cluster and more distant view of the northern cluster results in a Moderate significance of impact when balanced with the manner in which the proposed turbines are integrated into this broad and productive rural setting.

Three views were used to represent the different viewing contexts on offer in The Swan. VP19 affords the clearest view of the three from the northern outskirts of the settlement where the nearest proposed turbines are a prominent, but not overbearing feature of the rural hinterland of the settlement, resulting in a Moderate-slight significance of impact. From VP19a on an approach road to the settlement from the south, the nearest turbines are substantially screened, but will rotate beyond intervening buildings and trees in a manner that is slightly ambiguous, also resulting in a Moderate-slight significance of impact. Finally, at VP19b from the Swan recreation centre / playing pitches, the substantially screened view of turbine blades above the intervening ridge results in a Slight significance of impact.

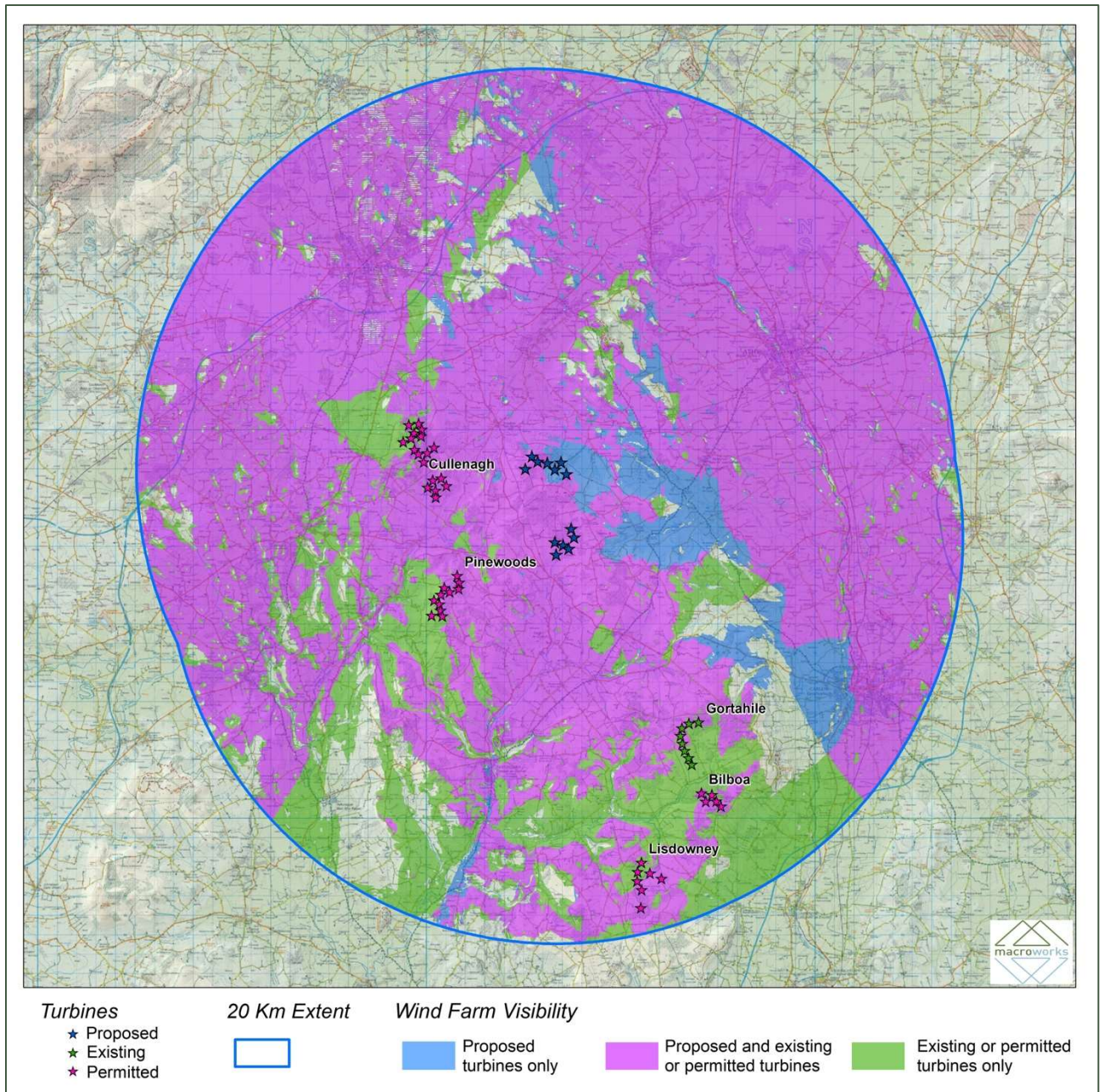
In summary, the highest magnitude of impact is experienced from local receptors located between the two clusters, however, these do not exceed a visual impact significance of Moderate. Moderate-slight is the highest Visual Impact Significance experience across the remainder of the views, occurring through a combination of Medium to Medium-low sensitivities and medium impacts at VP9 and VP11. Moderate-slight significance occurs at two views in the north of the study area due to scenic designations increasing the sensitivity of the view as well as at two viewpoints located between the two clusters. Slight and Slight-imperceptible impacts tend to occur across the wider study area, as do a number of Imperceptible significance judgements.

7.6.8 Cumulative Impacts

Existing (permitted) development is clustered over two sections of the study area, one to the northwest and west of the Proposed Development, and a second to the south, tracing the edge of the Castlecomer plateaux. In both instances the cumulative wind farms are separated from the Proposed Development by a dip in the landform, combined with a key transport corridor. For the northern cumulative group the dividing road is the R426 and the N78 is the key transport receptor for the southern cluster. There are a number of population centres along these transport corridors which have the potential to experience cumulative impacts, but generally in opposing directions. Table 7-11 contains an analysis of potential cumulative impacts using the wireframe images and photomontage set. A Cumulative Zone of Theoretical Visibility (ZTV) map has also been prepared, which indicates parts of the study area with potential for combined visibility of the Proposed Development in conjunction with other existing and permitted developments within the study area.



Figure 7-13 Bare-ground Zone of Theoretical Visibility (ZTV) Map



The cumulative ZTV map indicates that the vast majority of the study area has some potential for cumulative visibility (Purple pattern) and this occurs in all direction except to the near eastern section and the outer southern section. It is in the near east and to the southeast that there is most likely to be visibility of just the proposed turbines or no views of turbines at all. This area is traced by the N80 national secondary road between Carlow and Stradbally and it tends to be the brow of the Castlecomer Plateau that restricts views of other cumulative turbines to the south and southwest from this area.

In the outer southern portion of the study area, where views of the proposed turbines tend to be most restricted by landform, visibility of just cumulative developments becomes more prevalent (Green pattern). There are also notable areas in the southeast and southwest with no visibility of turbines.



Table 7-10 Cumulative Visual Impact Analysis (from selected viewpoints)

VRP Ref.	Number of other wind farms potentially visible	Nearer or further than the Proposed Development	Combined View (within a single viewing arc - 90°)	Succession View (within a series of viewing arcs from the same location)	Sequential View (view of different developments moving along a linear receptor)
VP1	-	-	-	-	-
VP2	-	-	-	-	-
VP3	-	-	-	-	-
VP4	2	Further	Yes	No	Yes
VP5	1	Similar distance	Yes	No	No
VP6	1	Further	Yes	No	Yes
VP7	1	Further	Yes	No	Yes
VP8	3	Nearer and further	Yes	No	No
VP9	-	-	-	-	-
VP10	-	-	-	-	-
VP11	-	-	-	-	-
VP12	-	-	-	-	-
VP13	2	Further	Yes	No	No
VP14	2	Further	No	Yes	Yes
VP15	-	-	-	-	-
VP16	4	Further	Yes	Yes	No
VP17	2	Nearer	Yes	Yes	Yes
VP18	2	Further	Yes	No	No
VP18a	-	-	-	-	-
VP19	-	-	-	-	-
VP19a	-	-	-	-	-
VP19b	-	-	-	-	-
VP20	-	-	-	-	-
VP21	-	-	-	-	-
VP22	-	-	-	-	-
VP23	2	Further	Yes	No	Yes
VP24	4	Nearer and further	Yes	Yes	Yes
VP25	-	-	-	-	-
VP26	1	Similar distance	Yes	No	No
VP27	-	-	-	-	-

As can be seen from the analysis of the results in **Table 7.10**, over half of the selected viewpoints will not experience any material cumulative impacts. There is a distinct pattern of cumulative visibility from receptors in the northern portion of the study area (VP's 4 - 8) where the generally flat terrain allows views towards the Proposed Development and the permitted Cullenagh and Pinewoods developments to the west. These cumulative views



are all from reasonable distances of beyond 5km of any of the nearest turbines and the southerly context is a broad one towards the Castlecomer Plateau.

The next pattern of cumulative visibility comes from the central study area (VPs 13 – 18) where the elevated spine that contains the Proposed Development also affords broad outward views towards the other existing and permitted turbines of the study area. Again, it is the nearer Cullenagh and Pinewoods developments that have the most noticeable intervisibility but often in opposing viewing directions.

Finally there are several viewpoints (VP23, VP24 and VP26) that lie in close proximity to the southern cluster of cumulative wind farms that will also afford northerly views of the Proposed Development in the middle distance.

Overall, the study area does not contain a high number of turbines and these are divided between a modest number of mid and small sized developments. The nearest and most likely to generate cumulative effects in conjunction with the Proposed Development are the Cullenagh and Pinewoods developments between 5-10km to the west. This does not generate a strong sense of wind energy proliferation within the study area or a sense of being surrounded by turbines. Instead, the terrain and forestry landcover of the Castlecomer Plateau tend to absorb and restrict intervisibility of the combined development from all but elevated areas. For these reasons, the contribution to cumulative impacts by the Proposed Development is deemed to be **Medium-low** in the context of the cumulative impact criteria provided in **Table 7.5**.

7.7 Mitigation Measures

Outside of those landscape and visual mitigation measures that formed part of the iterative design process of this Proposed Development over of the past two years, and which are embedded in the assessed Project, other specific landscape and visual mitigation measures are not considered necessary / likely to be effective. Thus, the impacts assessed in Section 7.4 are the equivalent of residual impacts in this instance.

7.7.1 Decommissioning Phase

The decommissioning phase will see a similar nature of effects to the construction stage due to the movement of heavy machinery within the Proposed Development Site and to and from the Site removing turbine components. However, such effects will be temporary in duration and decreasing in scale as turbines are removed from view and the landscape is substantially reinstated to former uses. As with construction stage impacts, decommissioning stage effects are not considered to be significant.

7.7.2 Summary of Significant Effects

It is not considered that there will be any significant effects arising from the Proposed Development.

7.8 Statement of Significance

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



7.9 References

Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Statements (2022) and the accompanying Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (2017).

Department of Environment Heritage and Local Government (DoEHLG) Wind Energy Planning Guidelines (2006/2019 revision) and Preferred Draft Approach to revising the 2006 Guidance published 2017.

Landscape Institute and the Institute of Environmental Management and Assessment publication entitled Guidelines for Landscape and Visual Impact Assessment (2013).

Scottish Natural Heritage (SNH) Guidance Note: 'Assessing the cumulative impact of onshore wind energy developments' (2012).

Scottish Natural Heritage (SNH) Siting and Designing Wind Farms in the Landscape Version 3 (2017).





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