

Proposed Gathabawn Windfarm

Environmental Impact Assessment Report

Chapter 14: The Landscape (Landscape and Visual Assessment)



September 2026

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THE LANDSCAPE (LANDSCAPE AND VISUAL ASSESSMENT)

EIAR 14.1 Introduction

EIAR 14.1.1 Competent Expert

This Landscape and Visual Assessment (LVIA) report was prepared by Cian Doughan, Landscape Architect (BSLA, M.I.L.I.) Associate Director of Macro Works Ltd, and reviewed by Richard Barker Landscape Architect (MLA, M.I.L.I.) a specialist Landscape and Visual Impact Assessment (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 150+ onshore wind farm proposals throughout Ireland, including over 20 Strategic Infrastructure Development (SID) wind farms. Macro Works and its senior staff members are full/corporate members of the Irish landscape Institute.

EIAR 14.1.2 Sources of Information

Consultation, desktop studies and fieldwork were carried out in order to gather information on the baseline environment.

Table 0-1 - Sources of Baseline Information for The Landscape

Consultation Sources
OPW Consultation – requested that Grangefertagh Round Tower, Ballylarkin Church and Rathealy Ringfort are included in the EIAR assessment. Both Grangefertagh and Ballylarkin are included herein. Rathealy Ringfort is not publicly assessable and therefore is not included for assessment in this Landscape chapter. All three heritage sites are evaluated in Chapter 15: Cultural Heritage. See Chapter 3: Consultation for further details.
Desktop Sources
• Kilkenny City and County Council Development Plan 2021 – 2027 • Laois County Development Plan 2021 - 2027 • Desktop research of tourism, heritage, and community features in Counties Kilkenny and Laois • Mapping from several online sources include; https://www.geohive.ie/, https://gis.epa.ie/EPAMaps/Water, https://mountainviews.ie/summit/983/
Fieldwork
• Site visit and capture of photography from VPs.

EIAR 14.1.3 Methodology Used

The evaluations for Landscape herein have been carried out in accordance with the EPA guidance document *Guidelines on the Information to be contained in Environmental Impact Assessment Reports (2022)*, and uses methodology as prescribed in the following guidance documents:

- European Union (EU) Guidance on the preparation of the EIA Report (Directive 2011/92/EU as amended by 2014/52/EU) (2017);
- Environmental Protection Agency (EPA) publication *Guidelines on the Information to be contained in Environmental Impact Assessment Reports (2022)*;
- Landscape Institute and the Institute of Environmental Management and Assessment (IEMA) publication entitled *Guidelines for Landscape and Visual Impact Assessment – Third Addition (2013)* (herein referred to as GLVIA3);

- NatureScot Guidance - Assessing the cumulative landscape and visual impact of onshore wind energy developments (2021) [online];¹
- Department of the Environment, Heritage and Local Government Wind Energy Development Guidelines (2006);
- Scottish Natural Heritage Visual Representation of Wind Farms: Best Practice Guidelines (version 2.2 - 2017).²

The author's extensive experience with EIA preparation and landscape and visualisation analysis also informs this report.

A list of guidelines and legislation which were taken into account during the evaluation of this chapter is also included in [Appendix 14.1](#).

EIAR 14.1.4 Statement on Certainty and Sufficiency of Information Provided

In respect of Population, no material limitations or difficulties were encountered during the course of the studies carried out to inform the assessment of socio-economic impacts of the Proposed Gathabawn Windfarm on local populations.

A clear documentary trail is provided throughout this chapter and chapter appendices to the competency of data and methods used and the rationale for selection of same. The information used to compile this chapter is collated from the other assessments in this EIAR, and is also collated from site-specific investigations, data and documents generated by public bodies and statutory agencies and from the other competent experts' assessments in this EIAR.

Baseline data and trends for the local population have been derived from a range of national statistical data sources which annually collect and report statistics for geographic areas across the whole of Ireland and include datasets from the CSO census data. Future trends are not anticipated to change enough to alter the baseline scenario when compared to the national average, the baseline environment information provided within this chapter is considered sufficient for the purpose of this assessment.

EIAR 14.1.5 Description of the Development

The subject development – the **Proposed Gathabawn Windfarm**, comprises 12 wind turbines and all associated foundations and hard-standing areas in respect of each turbine, 2 control buildings, 7.7km of access roads, 1 met mast and 1 LiDAR unit for measuring meteorological conditions, underground cabling between the turbines and control buildings, 7 site entrances, newly created Biodiversity Areas and all ancillary associated and facilitating works and activities. 7 turbines and 1 control building are proposed in the Ballylehaun Area, and 5 turbines and 1 control building are proposed in the Ballyring Area.

The overall whole Gathabawn Windfarm Project also includes a connection to the national electricity grid, which is not part of the currently proposed development. While the ultimate grid connection point is subject to a separate process with Eirgrid, a candidate route has been identified to the closest node at Eirgrid Ballyragget Substation. This **Candidate Gathabawn Grid Connection** comprises a new substation in Parksgrove (Parksgrove Substation) and three distinct underground cable (UGC) sections: Ballylehaun-Ballyring UGC, Ballyring-Parksgrove UGC, and Parksgrove-Moatpark UGC. To facilitate the evaluation of the whole project, this candidate grid connection is included in the baseline descriptions and considered within the impact evaluations detailed below.

¹ There is no current guidance document in Ireland relating to the assessment of cumulative landscape and visual effects for onshore wind energy development, and thus, it is standard practice to use the NatureScot guidance

² As above.

EIAR 14.2 Sensitive Aspects

EIAR 14.2.1 Overview

This chapter describes the landscape context of the proposed Gathabawn Windfarm and assesses the likely landscape and visual impacts of the scheme on the receiving environment. Although closely linked, landscape and visual impacts are assessed separately.

Landscape Impact Assessment (LIA) relates to changes in the physical landscape brought about by the Proposed Gathabawn Windfarm, 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 Gathabawn Windfarm 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 Gathabawn Windfarm 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.

EIAR 14.2.2 Definition of Study Area

Both the 2006 Wind Energy Development Guidelines and Draft Revised 2019 Wind Energy Development Guidelines (WEDGs) published by the Department of the Environment, Heritage and Local Government specify radii for examining the zone of theoretical visibility (ZTV) of proposed wind farm projects. The 2006 guidance and Draft Revised WEDG³ is identical in relation to defining the radii for examining the ZTV of proposed wind farm projects. The extent of this search area is influenced by turbine height, as follows:

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

In the case of the Proposed Gathabawn Windfarm, the blade tips are up to a maximum 170 m height and, thus, the minimum ZTV radius applied is 20 km from the outermost turbines, which represents current best practice with regard to the height of the turbines and scale of the turbine array. Notwithstanding the full 20 km extent of the LVIA study area, there will be a particular focus on receptors and effects within the central study area where there is higher potential for significant effects to occur. When referenced within this

³ The draft Revised WEDGs represent a consultation draft which are not in force and subject to change.

assessment, the 'central study area' is the landscape within 5km of the proposed wind farm site boundary, which represents current best practice.

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

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

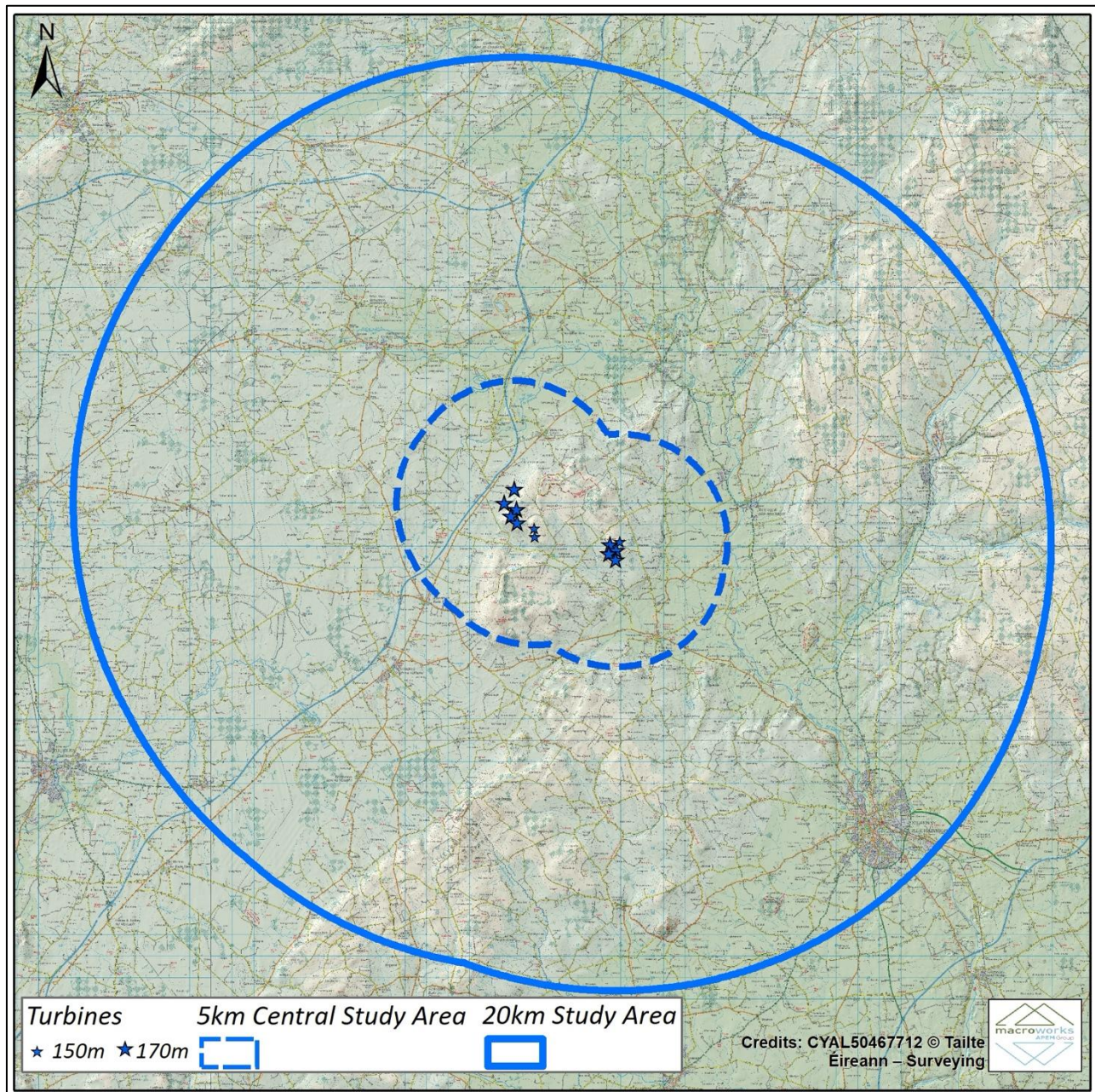


Figure 0-1 – 20km Study Area

EIAR 14.3 BASELINE ENVIRONMENT

The context, characteristics and sensitivities of the baseline environment, and the trends and evolution thereof, in relation to *Landscape Character* and *Visual Amenity* are described in the subsections below.

EIAR 14.3.1 Context and Characteristics – Landscape Baseline

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

A description of the landscape context of the proposed wind farm site and wider study area is provided below under the headings of landform and drainage and vegetation and land use. Centres of population, transport routes and tourism, recreation and heritage features form part of the visual baseline and are dealt with in Section EIAR EIAR 14.3.3 below.

EIAR 14.3.1.1 Landform and Drainage

In the broad context, landform is richly diverse across the study area, being neither extreme nor monotonous. Generally speaking, the study area comprises of undulating, lowland terrain with some hills and valleys.



Figure 0-2 – Landscape Context of the Central and Immediate Study Area

Central Study Area

The central study area offers the most palpable variation in relief, ranging from less than 70 m AOD near Freshford to 300 m AOD near the Co. Laois border and 349 m AOD in the southwest. There is greater topographic variation across this area, lending it more discernible inherent visual amenity than much of the remainder of the study area. However, these broadly tend to be hills that are smooth and rolling in nature, with few sharp or precipitous changes in elevation. As is typical across such rolling hills in the southeast of the country, there are numerous small streams throughout this terrain, with the Nuenna River (i.e. wide stream/narrow river) running through the southern part of the central study area. The largest known watercourse in the broader vicinity of the central study area is the River Nore, which fringes the eastern edge of the central study area (i.e. approximately 5 km from the site)



Figure 0-3 – Undulating terrain that is representative of the central study area

Wider Study Area

Topography in the wider study area can generally be characterised as more rolling and diverse to the south, southwest and southeast, while moving further north and west/northwest (i.e. more than 10 km from the site), the terrain tends to become more low-lying and less varied, appearing ostensibly flat in some locations (i.e. principally within eastern Co. Tipperary and southern Co. Laois). Approximately 10–15 km south of the site are the Slieveardagh Hills, which rise to approximately 340 m AOD, although elevations across the wider landscape generally remain within the range of 100–200 m AOD. The largest watercourse within the study area is the River Nore, which is one of the three principal rivers in the southeast of Ireland. The River Nore is approximately 140 km long, extends across three counties and two provinces, and passes within approximately 5 km east of the site.



Figure 0-4 - Ostensibly flat or marginally undulating land that is representative of the wider study area in the north and west.

EIAR 14.3.1.2 Vegetation and Land Use

In broad brushstrokes, agriculture followed by cutaway bogland, is the predominant land use across the study area. However, there is more nuance and variety in land use at a more localised level.

Central Study Area

Pasture (i.e. dairy, beef and sheep farming) occupies the lion's share of the agricultural land, although there are notable areas of tillage in the northwest, southwest and far east of the central study area. In addition, there are tracts of commercial conifer plantation and wind energy development evident in places, as well as, to a far lesser extent, areas of woodland and urban settlement in the form of Freshford, Johnstown and Cullohill, for example. Solar development is also a more recent land use within the central study area, most noticeably to the west of the settlement of Ballyragget. These settlements collectively host several GAA club grounds. There are also a number of protected archaeological and heritage sites within the study area, although several of these are located within private farmland. The M8 (Dublin–Cork motorway) corridor traverses the central study area.

In terms of the site, it is located wholly within rolling, private agricultural land that is overwhelmingly pastoral in nature.



Figure 0-5 - Land use with the central study area

In terms of agriculture, field boundaries tend to comprise mature hedgerows, although such vegetation can become more scant at some of the marginally higher elevations. Field sizes are variable but tend to be primarily medium-sized. This pattern is broadly in keeping with the strong reputation, garnered over several centuries, of the 'Sunny Southeast' as being home to some of the most productive and high-yielding farmland in the country. There is one known landed estate/former demesne within the central study area, in the form of the Upper Court Demesne near Freshford.

Wider Study Area

The key difference between land use in the wider and central study areas is that, while agriculture remains dominant in the latter, the wider study area contains extensive areas of low-lying, exploited bogland, particularly in the west of the study area (within Co. Tipperary) and to the north (within Co. Laois). These exploited bogland areas tend to have a lower-sensitivity, post-industrial landscape character than other parts of the study area. Elsewhere, there are sizeable tracts of commercial forestry plantation, as well as smaller areas of deciduous woodland. Wind energy development is present in numerous locations, particularly in the west, south and northeast of the wider study area, while quarrying plays a lesser, albeit still evident, role.

Urban settlement is apparent primarily in the form of Kilkenny City, as well as towns such as Urlingford, Abbeyleix, Castlecomer and Ballyragget. It is worth noting that golf courses are located close to several of these urban centres, while there are also a handful of large landed estates throughout the wider study area. In and near several of the villages and towns, there are GAA club grounds, while elsewhere there are multiple

protected archaeological and heritage sites. The M9 (Dublin–Waterford motorway) and M7 (Dublin–Limerick motorway) corridors traverse the wider study area, along with several national roads.

ElAR 14.3.2 Landscape Policy Context and Designations

ElAR 14.3.2.1 The Department of Environment, Heritage and Local Government Wind Energy Development Guidelines (2006) and Draft Revised 2019 Wind Energy Development Guidelines

The Wind Energy Development Guidelines (2006) provide guidance on wind farm siting and design criteria for a number of different landscapes types. The site of the Proposed Gathabawn Windfarm is considered to be located within a landscape that is generally consistent with the ‘Hilly and Flat Farmland’ landscape type and the associated guidance is applicable. Siting and design recommendations for the ‘Hilly and Flat Farmland’ landscape type is included below:

- Location –** *“Location on ridges and plateaux is preferred, not only to maximise exposure, but also to ensure a reasonable distance from dwellings. Sufficient distance should be maintained from farmsteads, houses and centres of population in order to ensure that wind energy developments do not visually dominate them. Elevated locations are also more likely to achieve optimum aesthetic effect. Turbines perceived as being in close proximity to, or overlapping other landscape elements, such as buildings, roads and power or telegraph poles and lines may result in visual clutter and confusion. While in practice this can be tolerated, in highly sensitive landscapes every attempt should be made to avoid it.”*
- Spatial extent –** *“This can be expected to be quite limited in response to the scale of fields and such topographic features as hills and knolls. Sufficient distance from buildings, most likely to be critical at lower elevations, must be established in order to avoid dominance by the wind energy development.”*
- Spacing -** *“The optimum spacing pattern is likely to be regular, responding to the underlying pattern field pattern. The fields comprising the site might provide the structure for spacing of turbines. However, this may not always be the case and a balance will have to be struck between adequate spacing to achieve operability and a correspondence to field pattern.”*
- Layout -** *“The optimum layout is linear, and staggered linear on ridges (which are elongated) and hilltops (which are peaked), but a clustered layout would also be appropriate on a hilltop. Where a wind energy development is functionally possible on a flat landscape a grid layout would be aesthetically acceptable.”*
- Height -** *“Turbines should relate in terms of scale to landscape elements and will therefore tend not to be tall. However, an exception to this would be where they are on a high ridge or hilltop of relatively large scale. The more undulating the topography the greater the acceptability of an uneven profile, provided it does not result in significant visual confusion and conflict.”*
- Cumulative -** *“It is important that wind energy development is never perceived to visually dominate. However, given that these landscapes comprise hedgerows and often hills, and that views across the landscape will likely be intermittent and partially obscured, visibility of two or more wind energy developments is usually acceptable.”*

Overall, it is considered that the Proposed Gathabawn Windfarm design, particularly the ridgetop turbine arrangement, is fully in accordance with the guidance for this landscape setting. Even in respect of turbine height, which the guidance states would; *“tend not to be tall”* is acceptable because of the exception made for ridgelines of a relatively large scale and the fact that these are not tall turbines by current standards.

Siting in Relation to Individual Properties ('Setback')

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

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

Evaluation of 'Setback' Recommendations in relation to the Proposed Gathabawn Windfarm

Whilst several dwellings associated with involved landowners are located between approximately 509m – 559m from the proposed turbines, the nearest residential dwelling not associated with or otherwise involved in the Proposed Project is located over 600 m from the proposed turbines, which exceeds and fully complies with the setback distance outlined in the current 2006 Guidelines (i.e. >500m). The set back distance also complies with the Draft Revised Guidelines (2019) of 600m (4 x 150m tip height) for houses around Turbines 6, 7 and 9. In relation to the remaining turbines the setback distance of 680m (4 x 170m tip height) is complied with all but three houses - H11 (643m from T2) and H56 (617m from T10) and H55 (681m from T9). It is worth noting that these Draft Revised Guidelines are not yet adopted, although new wind farm projects tend to apply their recommended setback from sensitive receptors. It is important to note that the Proposed Gathabawn Windfarm has been designed and sited to adhere to the current (2006) wind energy development guidelines, whilst all but three dwellings (H11, H56 and H55) within the study area adhere to the draft revised (2019) wind energy development guidelines to the extent that the draft updated guidelines align with current best practice.

EIAR 14.3.2.2 Kilkenny County Development Plan (CDP) 2021-2027

A Landscape Character Assessment was prepared for Kilkenny County in 2003, which still informs and provides a framework for landscape-related policy in the current CDP. The Landscape Character Assessment identifies four landscape character types, which are subdivided into 14 landscape character areas, with some areas identified as being of special landscape character value, or possessing features and areas of high landscape sensitivity.

The site is located within the 'Upland' LCT, with the nearest 'transition zone' (between the upland and lowland zone) aligning the western side of the site, while the nearest 'river valley' LCT is located approx. 5km east of the site (see Figure 14-6, below).

Similarly, the site is not contained within an area that is designated as 'Highly scenic / Visually pleasing' while the nearest such area to the site is located approx. 5km east of the site (see Figure 0-6 below), along the River Nore valley. The nearest designated 'protected view' to the site is located approx. 1km south of the site on Spahill.

(Please note: scenic/protected views will be addressed in more detail later within the visual baseline).

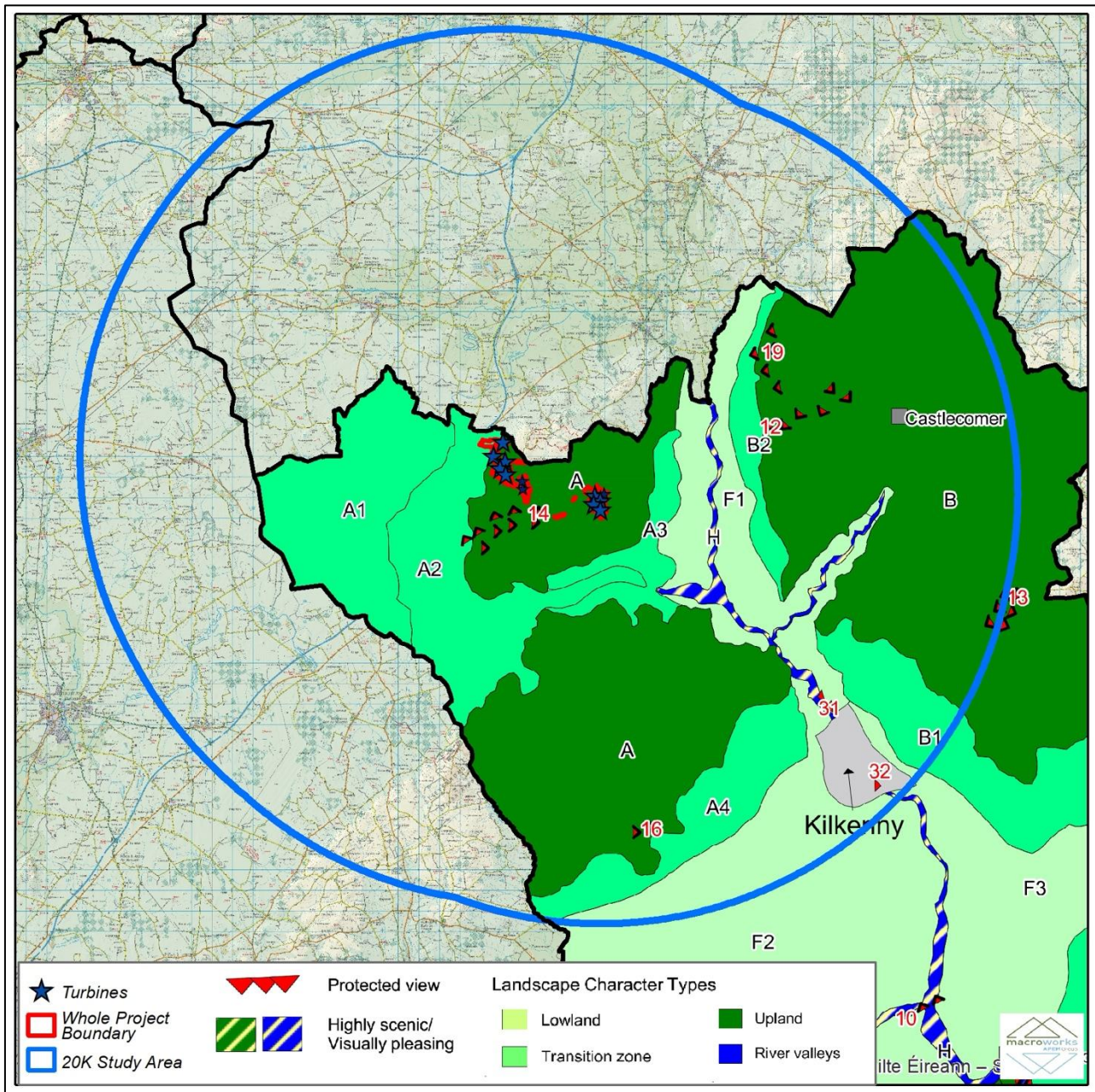


Figure 0-6 - Extract of 'Map 8.2 – Landscape Character Assessment' of the Kilkenny CDP.

The Landscape Character Assessment has identified fourteen Landscape Character Areas (LCAs) within County Kilkenny, of which nine are within the study area (see Figure 0-7, below). However, the site is set within LCA A 'Slieveardagh Hills (North),' which will be examined in further detail below.

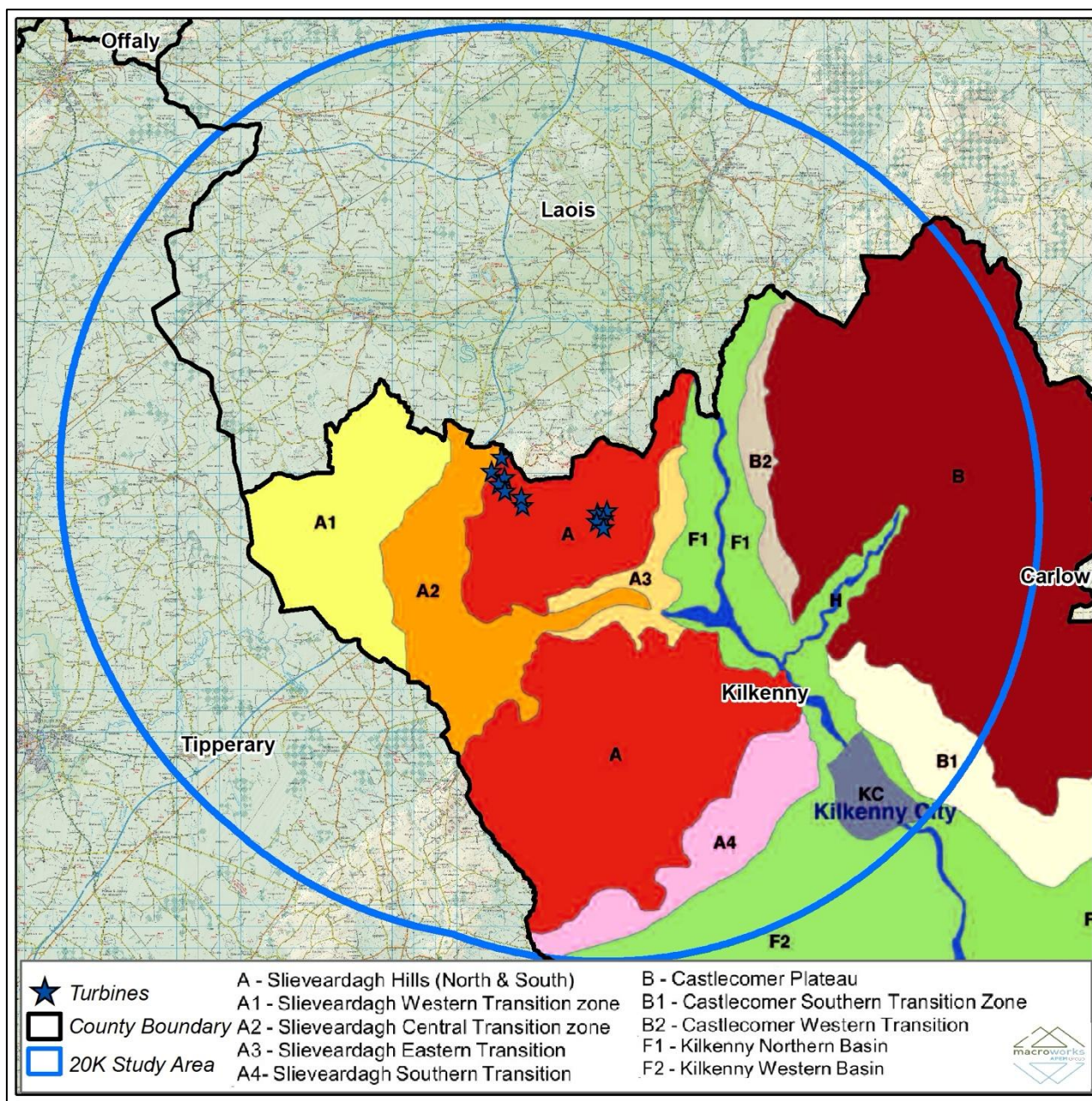


Figure 0-7 - Extract of 'Map 13 - Landscape Character Areas' of the 2003 County Kilkenny Landscape Character Assessment

Slieveardagh Uplands

According to Section 4.1 of the Co. Kilkenny Landscape Character Assessment, this LCA is described as:

"The Slieveardagh Uplands (Hills) are located in the northwest of County Kilkenny and extend into the neighbouring County of Tipperary. The undulating hills situated within County Kilkenny lie to the west of the Nore Valley and to the north of the Kilkenny basin. These uplands may be sub-divided into the northern Slieveardagh Uplands and the southern Slieveardagh Uplands ...The elevated nature of this physical area, provides a defined skyline with scenic views over southwest Kilkenny and the neighbouring county of Tipperary ... Although this area is generally perceived as having no significant landscape value, the northern hills are perceived as having certain ecological and scenic value. The zone is also perceived as having development potential."

In terms of land uses, it states that:

“The Slieveardagh uplands are rural in context with a number of scenic views and natural features. The general land use on the uplands is agricultural grazing, however some areas are occupied by conifer and broad leaved forests. Land parcels are of a medium size, with a proliferation of hawthorn and gorse. Vegetation is low lying, owing to the climatic conditions, and the presence of bog rushes indicates a high water table. Hedgerows are generally unmaintained. A dispersed pattern of residential and traditional farmhouse structures are indicative of a low population density.”

The “Critical Landscape Factors” of this Landscape Character Area entail:

Elevated Vistas:

“A number of local, third class roads give access to the uplands. Local roads cross the upper and lower slopes of the hills and provide access for established villages within the uplands ... As a result of the elevated road level and the lack of tall vegetation, there are long distance views towards the Kilkenny Lowlands and the Castlecomer Plateau...”

Slopes:

“Sloping land often provides an area with its character and offers a potentially increased elevation, intensifying the visual prominence of any feature over greater distances, as in the case of the Slieveardagh Hills. Slope also provides an increased opportunity for development to penetrate primary and secondary ridgelines when viewed from lower areas of the public realm such as the roads and population centres in this area.”

Prominent Ridge Lines:

“These occur as either primary ridgelines (visible only against the sky from any prospect) or secondary ridgelines (visible at least from some prospects below a distant primary ridge line). In this upland environment of the Slieveardagh Hills, nearly all ridgelines are primary when viewed from the lowland areas. Ridge lines perform the important roles of providing an area with its identity, acting as dominant landscape focal points, and defining the extent of visual catchments. Therefore, the main concern for the natural linear features formed by the ridgelines of the Slieveardagh Hills is to avoid penetration by development that will interrupt and reduce the integrity of such elements.”

Undulating topography:

“Gently undulating topography is presented within the upland area of this character unit. The physical shielding of a built form within the lee of hill where it does not break the skyline renders it visually unobtrusive and reflective of landscape scale. Furthermore, the dynamic and complex nature of undulating land encloses vistas and helps to provide a realistic scale and visual containment not available in open lands.”

Low vegetation:

“Low vegetation, represented in this unit by grassland, moorland and generally low hedgerows, is generally uniform in appearance, failing to break up vistas and allowing long distance visibility, and therefore, providing an inability to absorb development.”

Shelter vegetation:

“Shelter vegetation, represented in certain areas of this unit by coniferous plantations and broadleaved woodlands, provides visual screening, enclosing vistas and helping to provide a visual containment not available in open, low-vegetation lands.”

Landscape Character Sensitivities

Section 9.2.12 of the CDP pertains to Landscape. Section 9.2.12.5 describes Landscape Character Sensitivity as being:

“The sensitivity of the Landscape Character Areas is defined as its overall resilience to sustain its character in the face of change and its ability to recover from loss or damage to its components.”

The CDP identifies ‘landscape areas of highly scenic and significant visual amenity value.’ The nearest of these designations in the study area is along the River Nore, approx. 5km from the site. In addition, these riverine designations adhere to the banks of the watercourse and its immediate vicinity, and not beyond.

Landscape sensitivity within County Kilkenny is addressed by ‘areas of greater sensitivity’. These are:

“... Areas throughout the county that are highly sensitive to development and have a limited capacity for change ... These areas take account of areas of higher altitude in the county and of land cover. In general areas of elevated topography, with low growing or sparse vegetation and little existing development are landscapes of high sensitivity and have a low potential to absorb new development.

“Sensitive land-use categories include areas which are open and exposed with sparse or low growing vegetation cover which is insufficient to provide screening. Even if planting is introduced, the exposed nature of these areas will not support any significant tall vegetation. Due to this, any development would be visible over a wide area.”

Landscape sensitivity within the CDP is closely tied in with ‘Map 2 Landscape sensitivity Factors’ of the aforementioned County Kilkenny Landscape Character Assessment. From that map, the three landscape sensitivity factors that are of relevance to the site have been extracted and added, for the sake of clarity, to the Figure 0-8, below. These factors are:

- ‘Altitude above 200m’;
- ‘Principal Ridgeline’;
- ‘Slopes greater than 10%.’

However, it is worth noting that these individual elements are considered as component parts of the overall landscape character of an area, as none are indisputably sensitive in isolation.

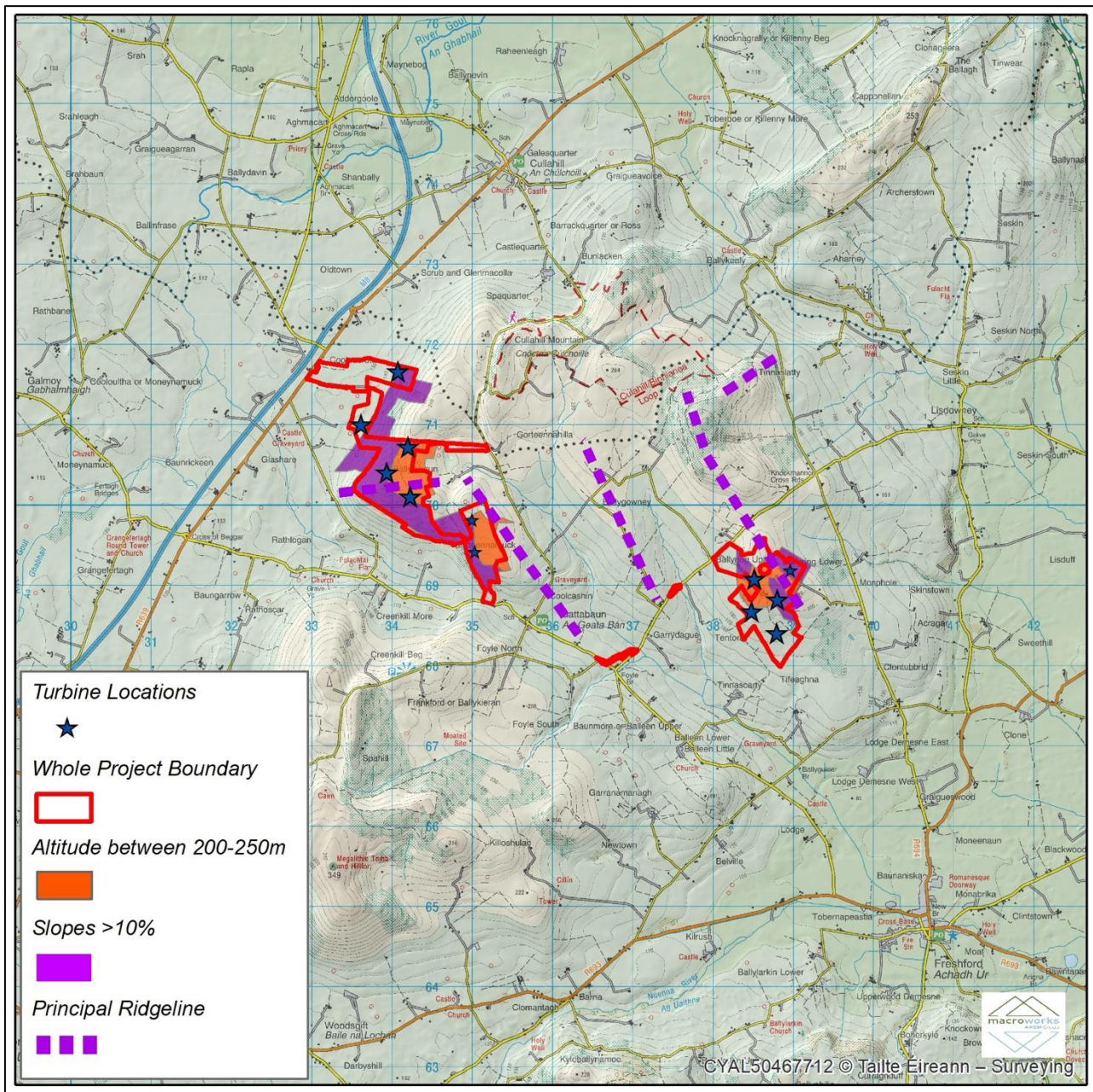


Figure 0-8 - Extract of 'Figure 8.3 Landscape Sensitivities' of the Kilkenny CDP (Note: for the sake of clarity, the wind farm site boundary, proposed turbine locations and the candidate grid connection have been added to this figure extract by Macro Works)

The CDP also sets out a number of 'development management requirements,' most of which relate to the site and the Proposed Gathabawn Windfarm, and are listed below:

- "To protect the landscape character, quality and local distinctiveness of County Kilkenny, and have regard to the guidance set out in the Landscape Character Assessment;
- Where necessary, to require that applications are accompanied by a visual impact assessment, particularly in upland areas, river valleys and areas of greater sensitivity;
- To facilitate appropriate development that reflects the scale, character and sensitivities of the local landscape throughout the county, and require that developments minimise the loss of natural features such as trees, hedgerows and stone walls;
- To facilitate, where appropriate, developments that have a functional and locational natural resource requirement to be situated on steep or elevated sites (e.g. reservoir, telecommunications or wind energy structures) with reference to the appropriate County strategies currently in place, and to ensure that any residual adverse visual impacts are minimised or mitigated;

- To ensure that development in upland areas or on steep slopes will not have a disproportionate or dominating visual impact (due to excessive bulk, scale or inappropriate siting) and will not significantly interfere or detract from scenic upland vistas, or when viewed from public areas, scenic routes, viewpoints or settlements;
- To have particular regard to the potential impacts of new development on sensitive upland areas, and to materially consider the difficulty of establishing and maintaining screening vegetation when assessing development proposals in these areas.
- To continue to permit development that can utilise existing structures and settlement areas whilst taking account of the local visual absorption opportunities provided by existing topography and prevailing vegetation and to direct new development whenever possible towards the vicinity of existing structures and mature vegetation in the Lowland Areas, River Valleys and Transitional Areas.
- 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.

Wind Energy Strategy

It is important to note that a Ministerial Direction was issued on 15th October 2021, with respect to the CDP. This was issued on the basis of the following reasons:

- *The Development Plan as made is inconsistent with Ministerial Guidelines issued under Section 28 of the Act, specifically item 2 of the Specific Planning Policy Requirement contained in the Interim Guidelines for Planning Authorities on Statutory Plans, Renewable Energy and Climate Change (July 2017).*
- *The Development Plan contains conflicting objectives on renewable energy sustainable development and climate action such that the adopted Plan, without providing sufficient compensatory measures, significantly reduced the extent of the areas indicated as ‘acceptable in principle’ that were identified in the draft Development Plan as being necessary to achieve the target of 201MW required to ensure that 100% of electricity demand for Kilkenny is met from renewable sources by 2030 and to ensure consistency with the climate action plan.*
- *The Development Plan has therefore not been made in a manner consistent with the recommendations of the Office of the Planning Regulator under Section 31 AM and fails to set out an overall strategy for the proper planning and sustainable development of the area.*

The Ministerial Direction states that:

“In accordance with Section 31(4) of the Planning and Development Act 2000, those parts of the Kilkenny City and County Development Plan 2021 – 2027 Plan referred to in the notice shall be taken not to have come into effect, been made or amended; namely;

Chapter 11, Renewable Energy:

- *Section 11.4 Kilkenny Targets;*
- *Section 11.5.1 Current status and targets; and*
- *Figure 11.4 Wind Strategy areas.”*

As such, there are currently no wind energy strategy areas designated for Kilkenny. In the absence of such a strategy, each planning application will be assessed on a case-by-case basis. However, reference to the removed wind energy strategy is provided below for context. A wind energy development strategy was included in Appendix K of the current Kilkenny County Development Plan. The wind energy strategy included

Figure 8 – Wind Energy Strategy Areas, which identifies areas where wind energy development is ‘acceptable in principle’, ‘open for consideration’ and ‘not normally permissible’. As demonstrated in Figure 0-9, below, the site of the Proposed Gathabawn Windfarm is located on lands deemed to be ‘Acceptable in Principle’ to wind energy development. In addition, much of the surrounding area is either deemed similarly or else ‘Open to Consideration’ to wind energy development.

According to Appendix K, ‘Acceptable in principle’ is described as “the preferred area for wind energy development, characterised by high wind speeds, and no significant conflict with environmental designations or sensitivities.” Meanwhile, ‘Open for consideration’ is described as an “area is characterised by no significant conflict with environmental designations or sensitivities.”

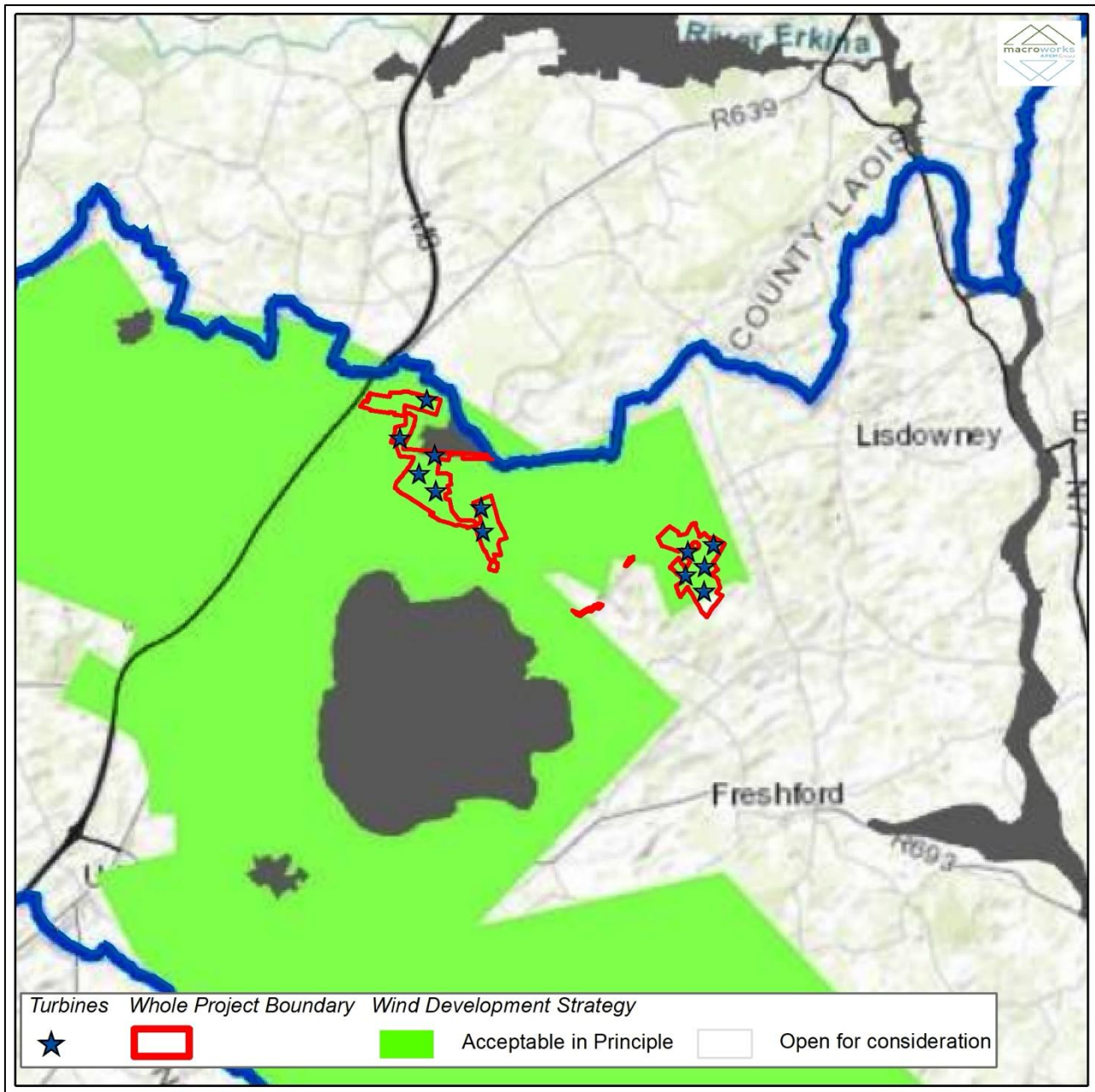


Figure 0-9 - Extract of Figure 8 within Appendix K Draft Wind Energy Strategy of the Kilkenny CPP, showing the location of the proposed turbines being within an area designated as being ‘Acceptable in Principle’ for wind energy development.

EIAR 14.3.2.2.1 Laois County Development Plan (CDP) 2021-2027

Whilst the Proposed Gathabawn Windfarm is entirely contained within County Kilkenny, the location of the proposed turbines comes within 250m, in certain locations, of the Co. Laois border.

County Laois Landscape Character Assessment has been prepared as part of the current Laois County Development Plan (CDP). In Section 5 of the County Laois Landscape Character Assessment, the county is divided into seven Landscape Character Types (i.e. distinct types of landscape that are relatively homogeneous in character). The Co. Laois Landscape Character Type nearest to the site, adjoining the Co. Kilkenny border at this point, is the 'Type 1 – Mountain, Hills and Upland Areas' LCT (refer to Figure 0-10 below). Other Landscape Character Types within the wider surrounding study area in Laois include 'Type 6 – Rolling Hills' and 'Type 2 – Lowland Agricultural Areas'. Landscape sensitivity in County Laois is addressed in Table 11.6 of the current CDP. This identifies 'Rolling Hills' and 'Hills and Upland Areas' as having a 'Medium' sensitivity, whilst 'Mountain Areas' are classified as having a 'High' sensitivity and 'Lowland Agricultural Areas' are classified as having a 'Low' landscape sensitivity.

It should be noted that there is some ambiguity between the current CDP and its Landscape Character Assessment in relation to these classifications. Within subsection 11.10 of the CDP, seven Landscape Character Types are identified, with 'Mountain Areas' and 'Hills and Upland Areas' identified as separate classifications. In contrast, the mapping contained within the Landscape Character Assessment combines these into a single LCT, defined as 'Type 1 – Mountain, Hills and Upland Areas'. However, it is important to note that the description of the Type 1 LCT identifies the Sliabh Bloom Mountains as "*the only mountain range in the county*". Thus, it can reasonably be deduced that the lands nearest to the Proposed Gathabawn Windfarm fall within the 'Hills and Upland Areas' landscape type rather than the 'Mountain Areas' landscape type. This interpretation is further supported by the landscape character mapping contained within the previous CDP, which identifies these lands as 'Hills and Upland Areas'. On this basis, it is considered that the 'Medium' landscape sensitivity classification is more applicable to the lands immediately north of the site within County Laois than the 'High' sensitivity classification associated with 'Mountain Areas'.

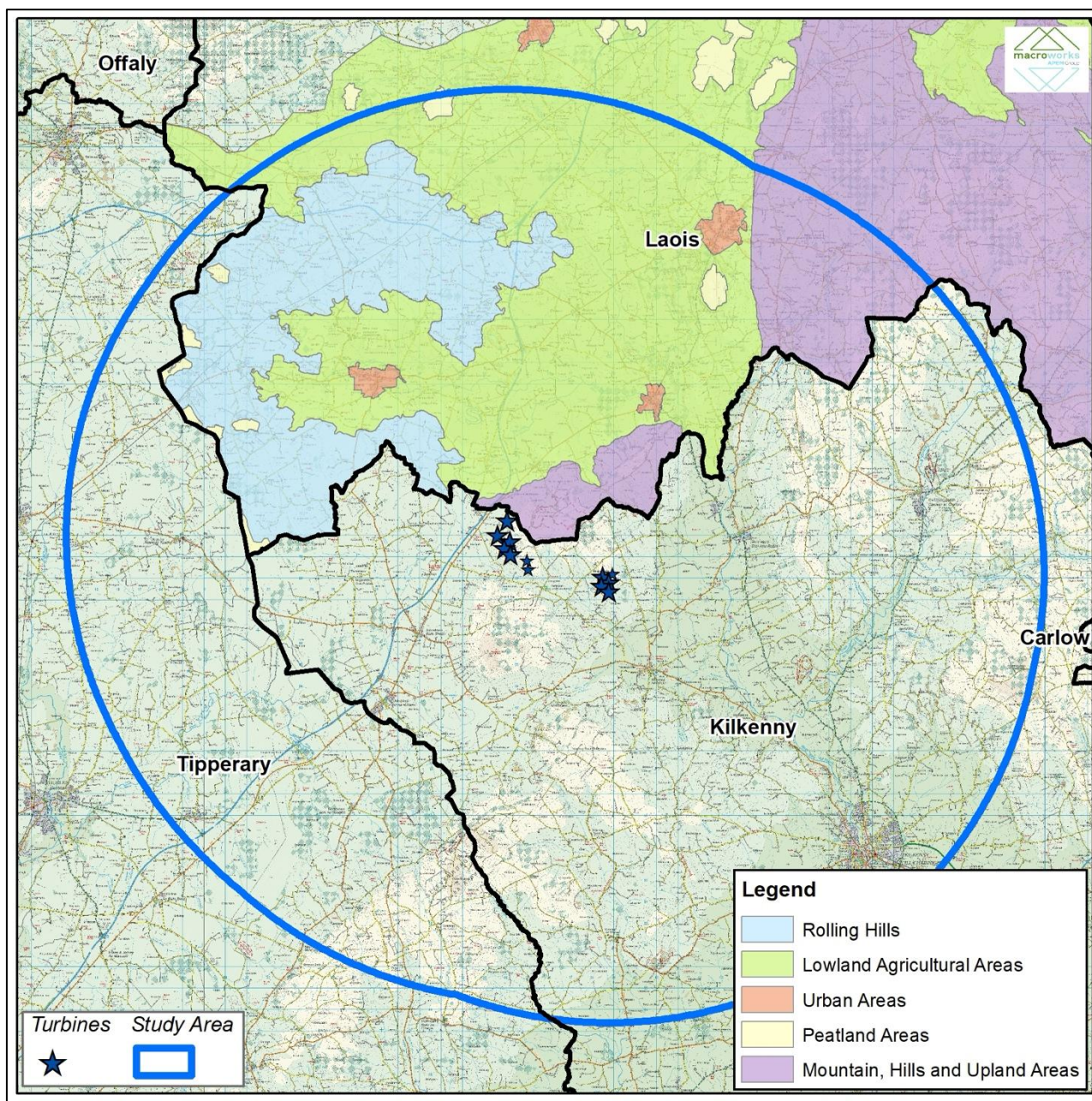


Figure 0-10 - Extract from Map 11.7 of the current CDP showing Landscape Character Types, in relation to the site.

Appendix 5: Wind Energy Strategy

A Wind Energy Strategy has been prepared for County Laois and forms part of the County Development Plan (CDP), as set out in Appendix 5. It should be noted that the Strategy was updated in January 2022 to incorporate changes arising from the Ministerial Direction. The Wind Energy Strategy includes Map 3.2 (refer to Figure 0-11 below), which identifies 'Preferred Areas', 'Areas Open to Consideration' and 'Areas Not Open for Consideration'. It should also be noted that a considerable proportion of County Laois is undesignated with regard to wind energy development. The lands nearest to the Proposed Gathabawn Windfarm are identified as an 'Area Not Open for Consideration', whilst lands further to the north are undesignated with regard to wind energy development. Areas Not Open for Consideration are described in the CDP as *"areas identified as particularly unsuitable for windfarm development. This category is used for areas which due to their scenic, ecological or tourism values are unable to accommodate development of this type."*

An important consideration in this regard relates to the wind energy classifications contained within the previous Laois CDP (2017–2023). The associated Renewable Energy Strategy stated the following with regard to wind energy development within Hills and Upland Areas:

"The Wind Energy Strategy has identified these upland areas for consideration in terms of future wind energy development. Any such development must be carefully sited to minimise negative impacts. The siting and design of wind energy proposals shall be in accordance with the Planning Guidelines for Wind Energy Development for Planning Authorities [DoEHLG, 2006] and the County Laois Wind Energy Strategy."

Accordingly, the 'Hills and Upland Areas' landscape type nearest to the site was previously identified as a 'Preferred Area' for wind energy development, in direct contrast to its current classification as an 'Area Not Open for Consideration'. Whilst the current Wind Energy Strategy clearly represents the prevailing policy position and is therefore afforded the appropriate weight in this assessment, the previous classification provides relevant context in understanding the underlying landscape capacity of these lands. In particular, the fact that this same upland landscape was previously identified as a 'Preferred Area' (refer to Figure 0-12, below) demonstrates that it has not historically been regarded as inherently incapable of accommodating wind energy development from a landscape and visual perspective. Consequently, the current 'Area Not Open for Consideration' designation should not, in itself, be interpreted as evidence that wind energy development would inevitably result in unacceptable landscape and visual effects; rather, the actual effects of the Proposed Gathabawn Windfarm require consideration on their individual merits, having regard to its specific siting, scale, design, landscape context and the findings of this LVIA.

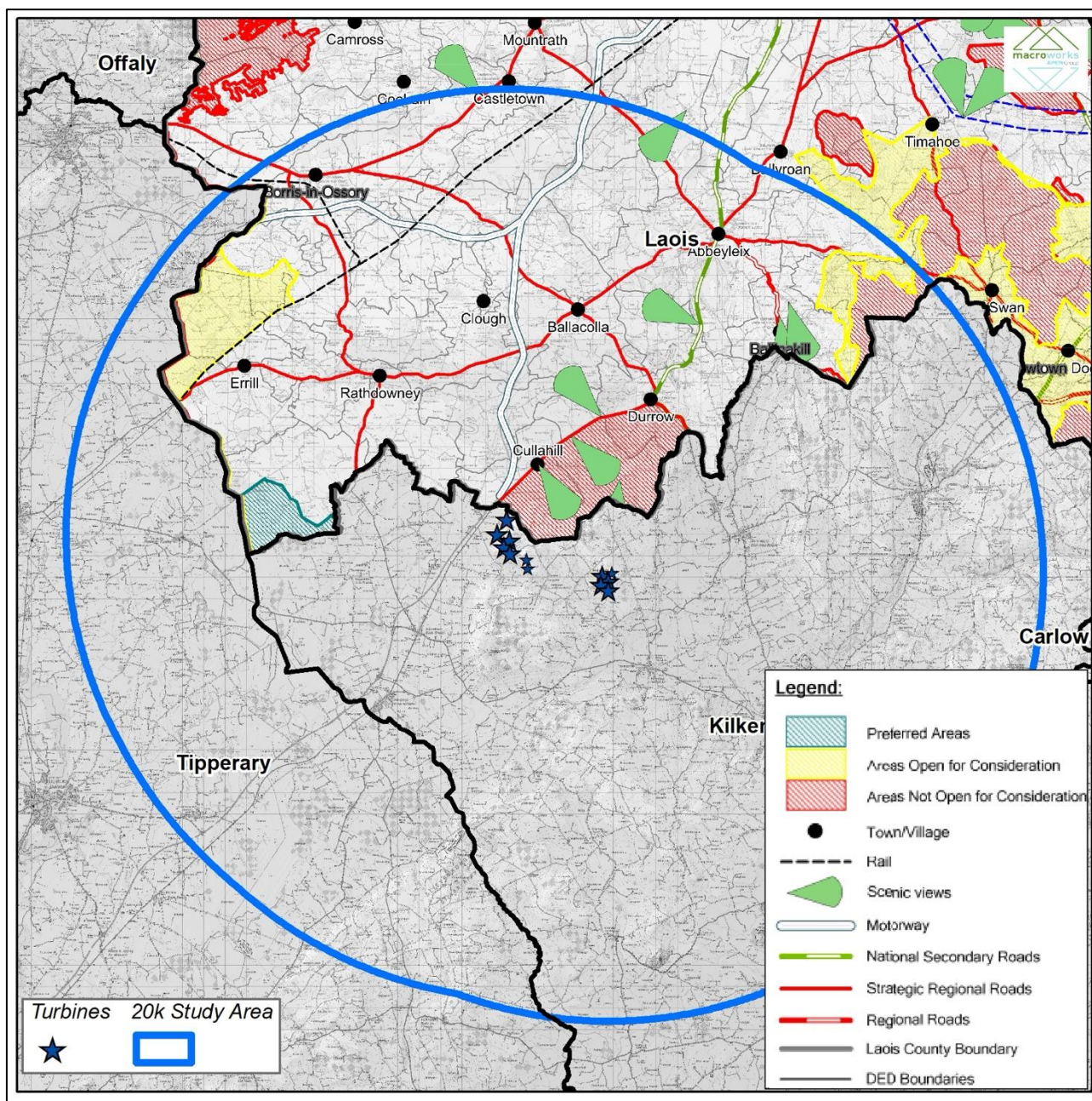


Figure 0-11 – Excerpt from the current Laois RES showing scenic views within the Laois

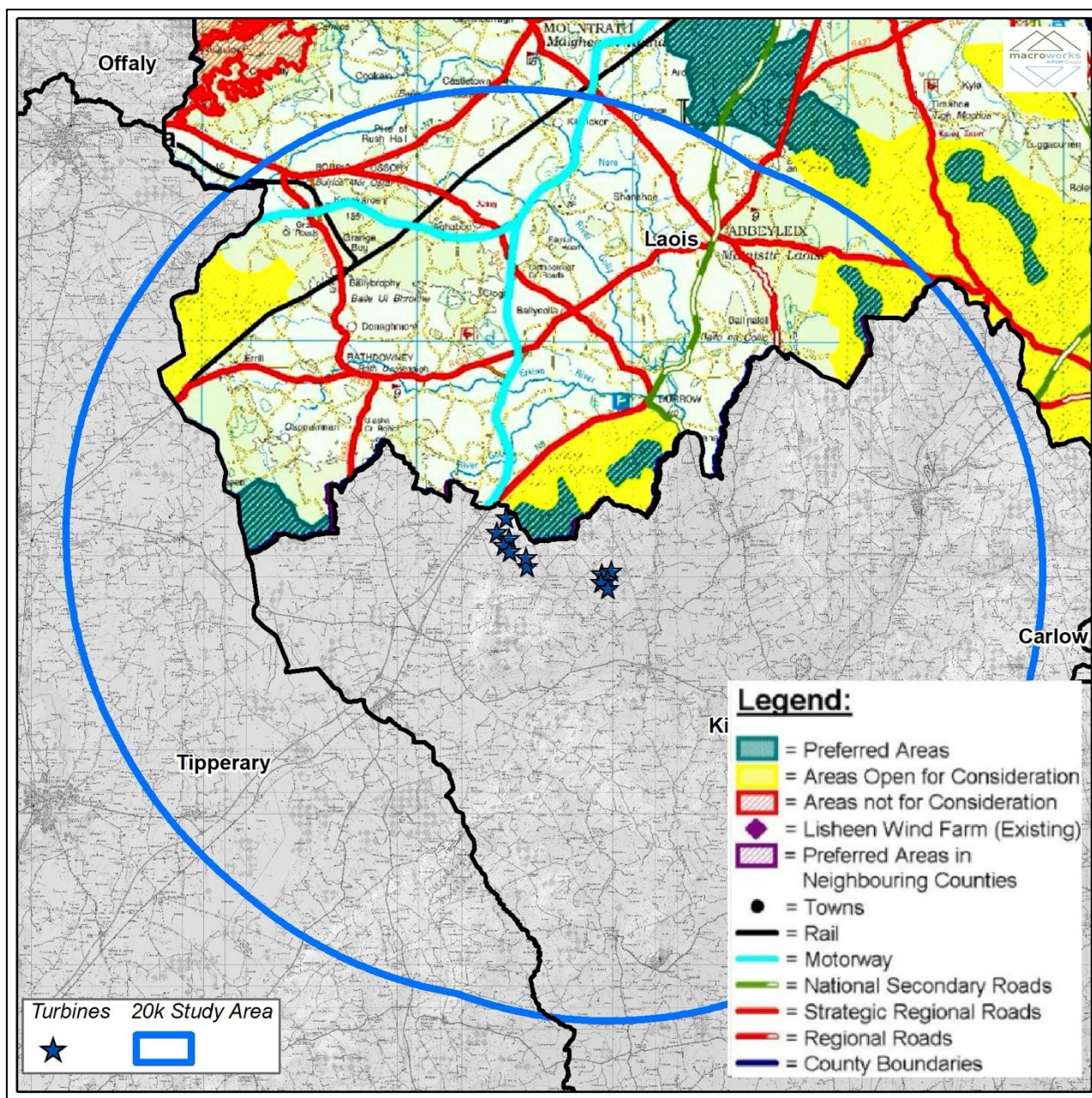


Figure 0-12 – Excerpt from Map 3.2 of the previous Laois RES

EIAR 14.3.2.2.2 Tipperary County Development Plan (CDP) 2022-2028

Whilst the Proposed Gathabawn Windfarm is entirely within the bounds of County Kilkenny, areas of Tipperary are contained within the western extent of the wider study area, and thus, it is important to consider landscape policy and designations within the relevant CDP.

An integrated (North Tipperary & South Tipperary) Landscape Character Assessment has been prepared for County Tipperary and is incorporated into the County Development Plan. This provides a hierarchy of landscape units beginning with high level 'Landscape Archetypes' then 'Landscape Character Types' and finally 23 geographically distinct 'Landscape Character Areas'. With regard to Landscape Character Areas, the following are contained within the west and southwest quadrant of the study area:

- LCA 5 – Templemore Plan
- LCA 8 – Littleton Raised Bog
- LCA 9 – Littleton Farmland Mosaic & Marginal Peatland
- LCA 14 – Slieveardagh Hills Farmland Mosaic

These landscape areas are all defined with varying sensitivities, with LCA 8 classified with a dominant 'Sensitive' classification, the median sensitivity classification on a five tier classifications system within the Tipperary CDP. Overall, it is not considered that this part of the study area includes any of the more sensitive landscape character areas in County Tipperary.

EIAR 14.3.2.2.3 Ecological Designations

Ecological designations such as Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Natural Heritage Areas (NHAs) are relevant to the landscape and visual assessment as they can identify areas that are likely to exhibit naturalistic character and low levels of built development. They also highlight areas to which landscape conservation values are attached and they are commonly associated with outdoor amenity facilities where people go to enjoy the landscape setting.

Within the Central Study Area there are several ecological designations: In order of proximity to the site, these are:

- Cullahill Mountain Special Area of Conservation (SAC) is adjacent north of the wind farm site in the Ballylehaun Area. This SAC site is also designated as a proposed Natural Heritage Area (pNHA);
- Gales Hill Nature Reserve is immediately to the west of the SAC and also adjacent the wind farm site in the Ballylehaun Area.
- Spahill And Clomantagh Hill pNHA and SAC – located more than 1.5km from the nearest proposed turbine.

The River Barrow and River Nore SAC and River Nore SPA are located to the east, just beyond the Central Study Area. A pNHA designation also overlaps the SAC at this location.

EIAR 14.3.3 Visual Baseline

Only those parts of the study area that potentially afford views of the Proposed Gathabawn Windfarm 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.

EIAR 14.3.3.1 Zone of Theoretical Visibility (ZTV)

A computer-generated Zone of Theoretical Visibility (ZTV) map has been prepared to illustrate from where the Proposed Gathabawn Windfarm is potentially visible. The ZTV below is based on a tip height as a worst-case scenario for potential visibility within the study area. 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 Gathabawn Windfarm will definitely not be visible, due to terrain screening within the 20km study area. Refer to Figure below.

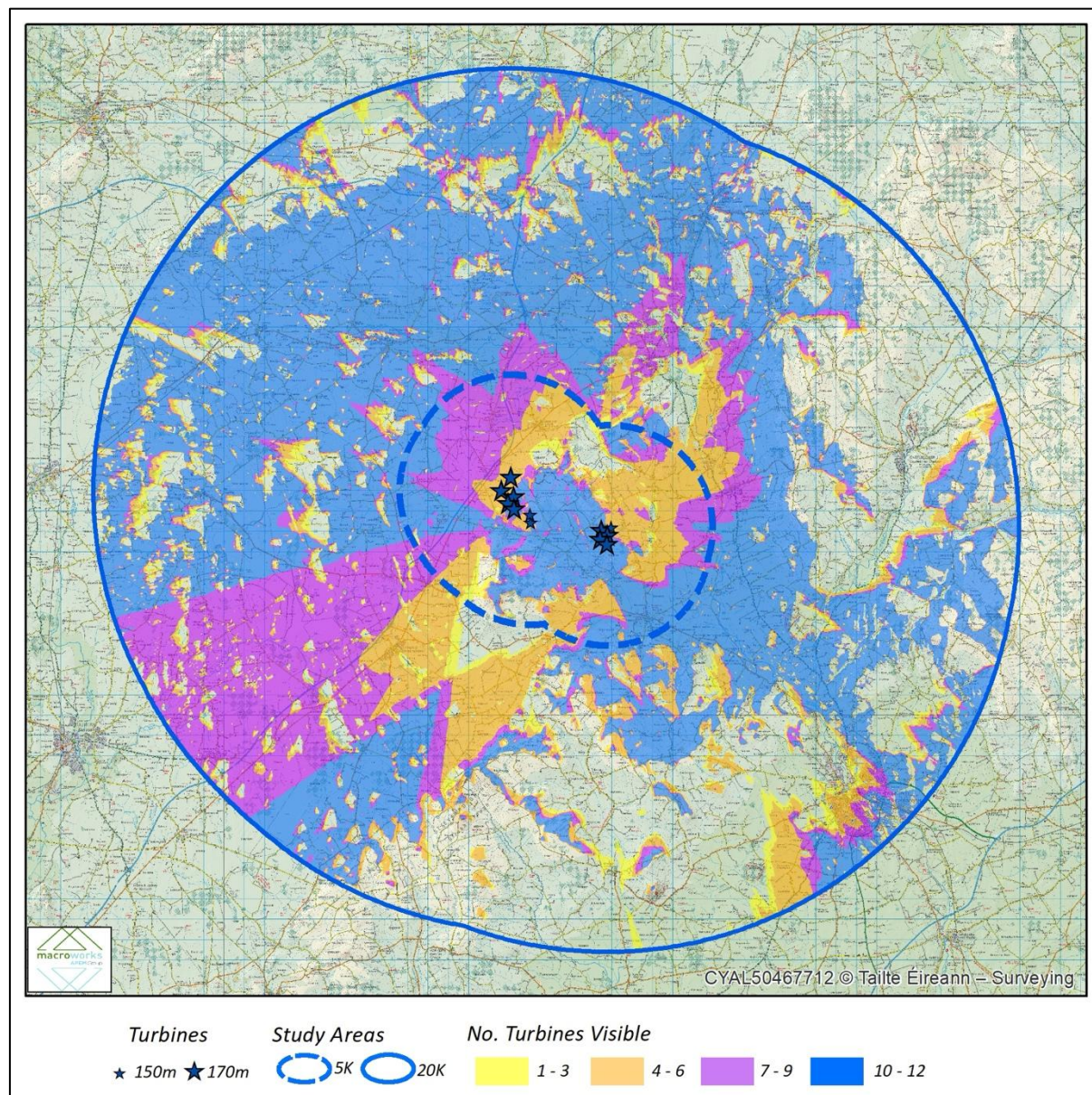


Figure 0-13 - ZTV map (See Appendix 3 for full scale annotated ZTV maps generated from hub height and blade tip)

- There is relatively consistent ZTV coverage across much of the study area. While there is more consistency in the western half, in the eastern half of the study area ZTV coverage is considerably more sporadic and uneven, owing to more undulating terrain.
- The intermittent ZTV pattern in the western half of study area, where terrain tends to be low-lying beyond 10km from the site, indicates that turbine visibility is not afforded from all low-lying ground, and even from some marginally higher ground, and is likely to be restricted to blades sets on the horizon, where intervening vegetation permits.
- Those areas that are not within ZTV coverage include the town of Castlecomer, as well as the north-western suburbs of Kilkenny City.
- In terms of transport routes, most of the major roads in the study area (i.e., two motorways as well as the N77 National Road and several regional roads) experience theoretical visibility of most of the proposed turbines.
- Where potential visibility occurs, it tends to relate to more than 7 turbines. Nonetheless, within the immediate surround of the site, especially to its north, east and southwest, there is more limited potential for visibility of the turbines, with the ZTV pattern indicating the maximum potential for visibility of up to 6 turbines. This is chiefly a reflection of the elevated, undulating hillscape on which the site is located.
- The most important point when reviewing the ZTV map in an undulating study area such as this is that it is not a true representation of likely visibility, as it takes no account of the screening provided by vegetation. Such screening 'on the ground' can be considerable and may limit views of even tall turbines within very short distances. The main benefit of the ZTV map in this instance is to indicate where views of the turbines are definitely not available.

EIAR 14.3.4 Visual Receptors

EIAR 14.3.4.1 Centre's of Population and Houses

The largest and most notable centre of population within the study area is Kilkenny City, which is located more than 15 km to the southeast of the site. The towns within the study area include Urlingford, Abbeyleix, and Castlecomer, followed by smaller towns/larger villages such as Ballyragget, Durrow, and Rathdowney all of which are located more than 6 km from the site.

The largest settlement within the Central Study Area is Freshford, a village of approximately 600 residents located c. 4 km southeast of the site. The small village of Lisdowney is located approximately 3km to the northeast of the site, while the County Laois village of Cullahill is located approximately 3 km north of the site, whilst the small crossroads hamlet of Gathabawn is located approximately 1 km south of the nearest part of the Proposed Gathabawn Windfarm. The large village of Johnstown is located marginally outside the study area (6km), to the southwest. Overall, in the context of the Irish rural sphere, and in light of its location within Leinster and its relatively accessible lowland setting, the study area exhibits a relatively strong settlement pattern compared with many other rural areas.

EIAR 14.3.4.2 Transport Routes

The major transport routes within the study area are the M8 (Dublin–Cork motorway) and M7 (Dublin–Limerick motorway). Whilst the M7 remains more than 12 km from the site, the M8 enters the Central Study Area and passes within approximately 1 km of the nearest proposed turbine at its closest point. There are also numerous regional roads within the Central Study Area, as well as an extensive network of local and third-class roads.

Outside the Central Study Area, national roads include the N77, N78, N10, N76 and N75, , in addition to numerous regional roads. Two railway lines enter the wider study area, in its far southeast (Dublin – Waterford Railway Line) and northwest (Dublin – Cork Railway Line). However, both remain more than 15 km from the site at all times.

EIAR 14.3.4.3 Tourism, Recreational and Heritage Features

There is a diverse array of amenity and heritage locations within the Central Study Area and the wider study area.

Within the Central Study Area, less than 1 km from the site, are two waymarked trails: the Cullahill/Binnianea Loop Walk and the Gathabawn Loop Walk. The North Kilkenny Cycle Route traverses the site before continuing through the eastern half of the Central Study Area, whilst the Freshford Loop Walk is located approximately 4 km south of the site. GAA club grounds within the Central Study Area include Lisdowney GAA Club, Galmoy GAA Club and St Lachtain's GAA Club in Freshford. Approximately 3 km west of the site is Grangefertagh, which contains a 6th-century round tower, ancient graveyard and ruins associated with St Ciarán of Saigir.

Within the wider study area, there are multiple recreational trails. The North Kilkenny Cycle Route meanders through much of the southeastern quadrant, whilst the Durrow Leafy Loops are located approximately 6–10 km north of the site. Approximately 15 km northeast of the site is the Abbeyleix–Killamuck Bog Loop Walk. Golf courses are located within or in the vicinity of several towns, as well as Kilkenny City, whilst there are also a number of large landed estates throughout the study area. GAA club grounds are located within and near several of the villages and towns, whilst numerous protected archaeological and heritage sites are also distributed throughout the wider study area.

EIAR 14.3.4.4 Scenic Designations

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, websites, guidebooks, and roadside rest stops, or on post cards that represent the area.

It should be noted that all scenic routes and views deemed relevant to the Proposed Gathabawn Windfarm will be visited during field work investigations. Where it is deemed that the scenic designations are relevant to the Proposed Gathabawn Windfarm, a representative viewpoint for assessment will be included for assessment in the visual impact appraisal.

EIAR 14.3.4.4.1 Kilkenny County Development Plan 2021-2027

Section 9.2.12.6 of the CDP pertains to Views and Prospects. It states that:

“There is a need to protect and conserve views and prospects adjoining public roads and river valleys throughout the county where these views are of high amenity value. In conserving views, it is not proposed that this should give rise to the prohibition of development along these routes but development, where permitted, should not seriously hinder or obstruct these views and should be designed and located to minimise their impact ... The Planning Authority will be cognisant of the impact of developments within the county on views from neighbouring counties.”

It also states that:

“The Council will preserve and support the improvement of places or areas from which views or prospects of special amenity value exist, as identified in Appendix H and on Figure 9.2.”

The protected views of the county are illustrated in Figure 0-6, below. Of the 32 designated protected views listed in Appendix H of the CDP, only three are of potential relevance to the Proposed Gathabawn Windfarm i.e., a view that is within the study area, with the indicated direction of that view being in the broader general direction of the site of the Proposed Gathabawn Windfarm.

Scenic designations in County Kilkenny (refer to Figure 0-6, below) within the study area are outlined below along with their relevance to the Proposed Gathabawn Windfarm:

- **V14:** “Views north and east on the Johnstown/Gattabaun Road No. LP1805 between junctions with Road nos. LT18054 and LT18056.” **Yes Relevant** – located some 1 km south of the site, with views potentially afforded of the Proposed Gathabawn Windfarm (represented by VP21 & VP22 in the visual impact appraisal)
- **V12:** “Views overlooking Castlecomer and Ballyragget on the Castlecomer/Ballyragget Road (R694) between its junctions with road nos. LT5852 and LT5847.” **Yes Relevant** - V12 is located approx. 9km northeast of the site, with views potentially afforded of the Proposed Gathabawn Windfarm (represented by VP8 in the visual impact appraisal)
- **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).” **Yes Relevant** - V19 is located approx. 10km northeast of the site, with distant views potentially afforded of the Proposed Gathabawn Windfarm (represented by VP8 in the visual impact appraisal).

EIAR 14.3.4.4.2 Laois County Development Plan 2021-2027

According to Section 11.11.1 of the Laois CDP:

“Scenic routes and protected views consist of important and valued views and prospects within the county. Table 11.7 below, lists the specific scenic views of the landscape, many of which are located along scenic routes and include built and archaeological features. Map 11.8 also indicates such scenic views within the county. The Council recognises the need to protect the character of the county by protecting views and scenic routes. However, it is acknowledged that in certain circumstances, some development may be necessary.”

Several scenic views with the Laois CDP are contained within the 20 km study area, some of which are relevant to the Proposed Gathabawn Windfarm (refer to Figure 0-14, below). Those within the study area are outlined below along with their relevance to the assessment herein:

- **004** - Road No. L5753 in the townlands Cullahill. Views towards Knockmannon Hill – **Yes Relevant**; views potentially afforded in the direction of the Proposed Gathabawn Windfarm (represented by VP37 in the visual impact appraisal)
- **014** - R639 in the townlands of Cullahill, Durrow. Views towards Caponellan Hill – **Yes Relevant**; whilst the main orientation of views are offset from the site, views of the Proposed Gathabawn Windfarm may still be afforded (represented by VP6 in the visual impact appraisal).
- **013** - N77 in the townlands of Abbeyleix, Durrow; Views over farmland and River Nore – **Not Relevant**; views oriented in the opposite direction to the site.
- **015** - R639 in the townlands of Cullahill, Durrow. Views over farmland and River Goul – **Not Relevant**; views oriented in the opposite direction to the site.
- **021** - Road No. L5757 in the townlands of Clonaslee. Views over farmland and Slieve Bloom Mountains. **Yes Relevant**; whilst the main orientation of views are offset from the site, views of the Proposed Gathabawn Windfarm may still be afforded (represented by VP6 in the visual impact appraisal).

- **022** - Heywood Demense; Views of Mass Lough and of Ballymartin Hill beyond. **Yes Relevant**; views potentially afforded in the direction of the Proposed Gathabawn Windfarm (represented by VP2 in the visual impact appraisal).
- **023** - Heywood Demense; Views over farmland and of Ballymartin Hill. **Yes Relevant**; views potentially afforded in the direction of the Proposed Gathabawn Windfarm (represented by VP2 in the visual impact appraisal).

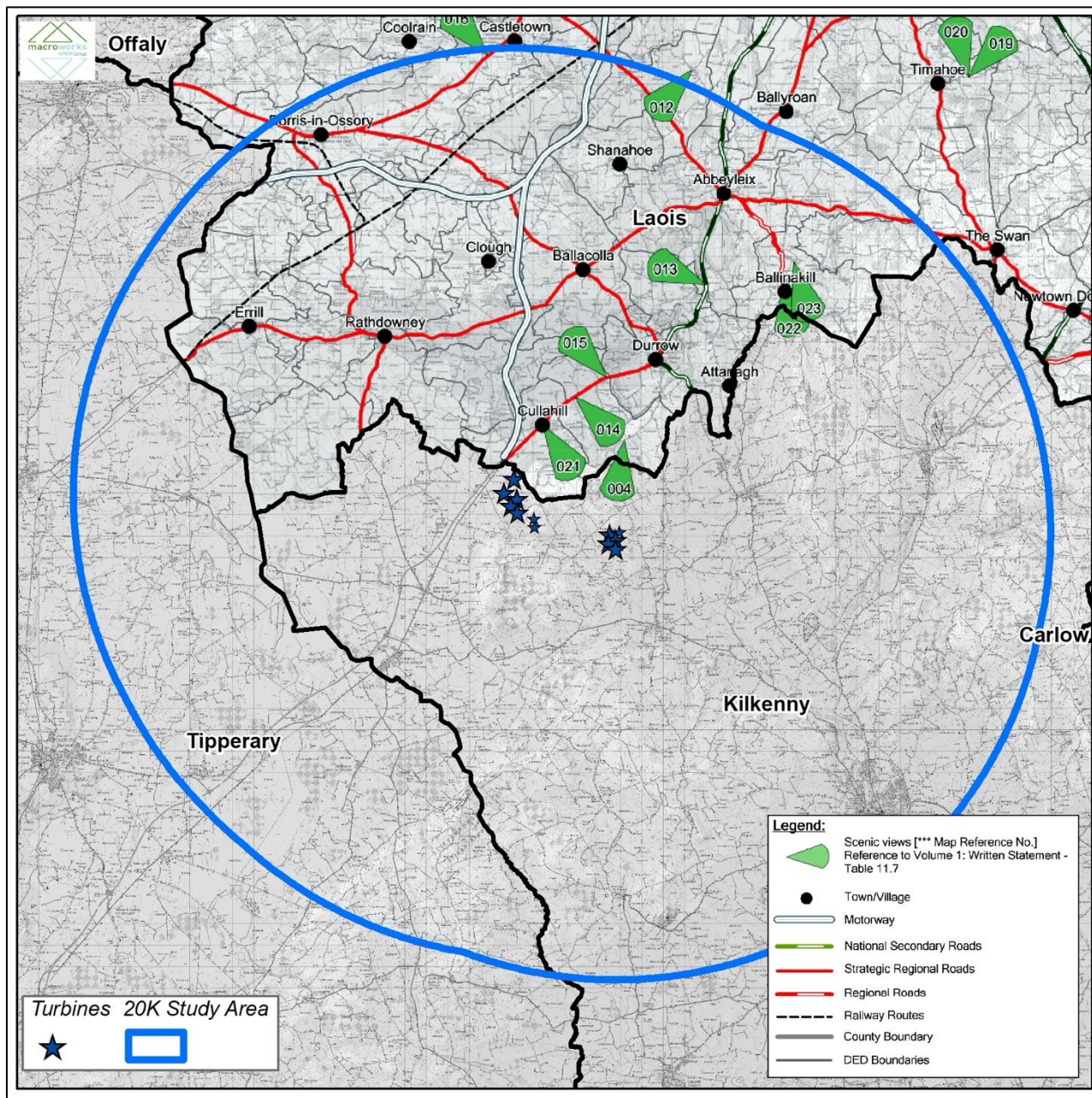


Figure 0-14 – Excerpt from the current Laois County Development Plan showing scenic designations within the study area

EIAR 14.3.4.4.3 Tipperary County Development Plan (CDP) 2022-2028

Scenic views and routes within the current Tipperary County Development Plan are outlined in Appendix 2 of the Landscape Character Assessment. Within the study area, there are two designated scenic routes (refer to Figure 0-15, below) and two static scenic views. The relevant scenic routes comprise V63, along the M8 motorway, and V31, along the R689 regional road.

The V63 scenic route follows a section of the M8 motorway corridor in County Tipperary. Visual receptors travelling along such a busy motorway corridor, which forms part of a strategic inter-urban route, tend not

to have a high visual sensitivity. Receptors typically travel at speeds of up to 120 km/h and views are frequently contained or screened by roadside vegetation, cuttings and embankments. This is one of the reasons why scenic routes are more commonly designated along regional and local roads, where travel speeds are lower and opportunities to appreciate surrounding views are generally greater. In addition, this scenic route is located just over 10 km from the site of the Proposed Gathabawn Windfarm, as illustrated in Figure 0-15, below.

The V31 scenic route along the R689 affords views in a generally westerly direction and is therefore not considered relevant to the Proposed Gathabawn Windfarm. Similarly, static scenic view V62 is located more than 18 km from the site and is not considered relevant to the Proposed Gathabawn Windfarm. Static scenic view V27 is oriented to the “east and west”, whereas the Proposed Gathabawn Windfarm is located to the north. Consequently, neither V62 nor V27 is considered relevant to this assessment.

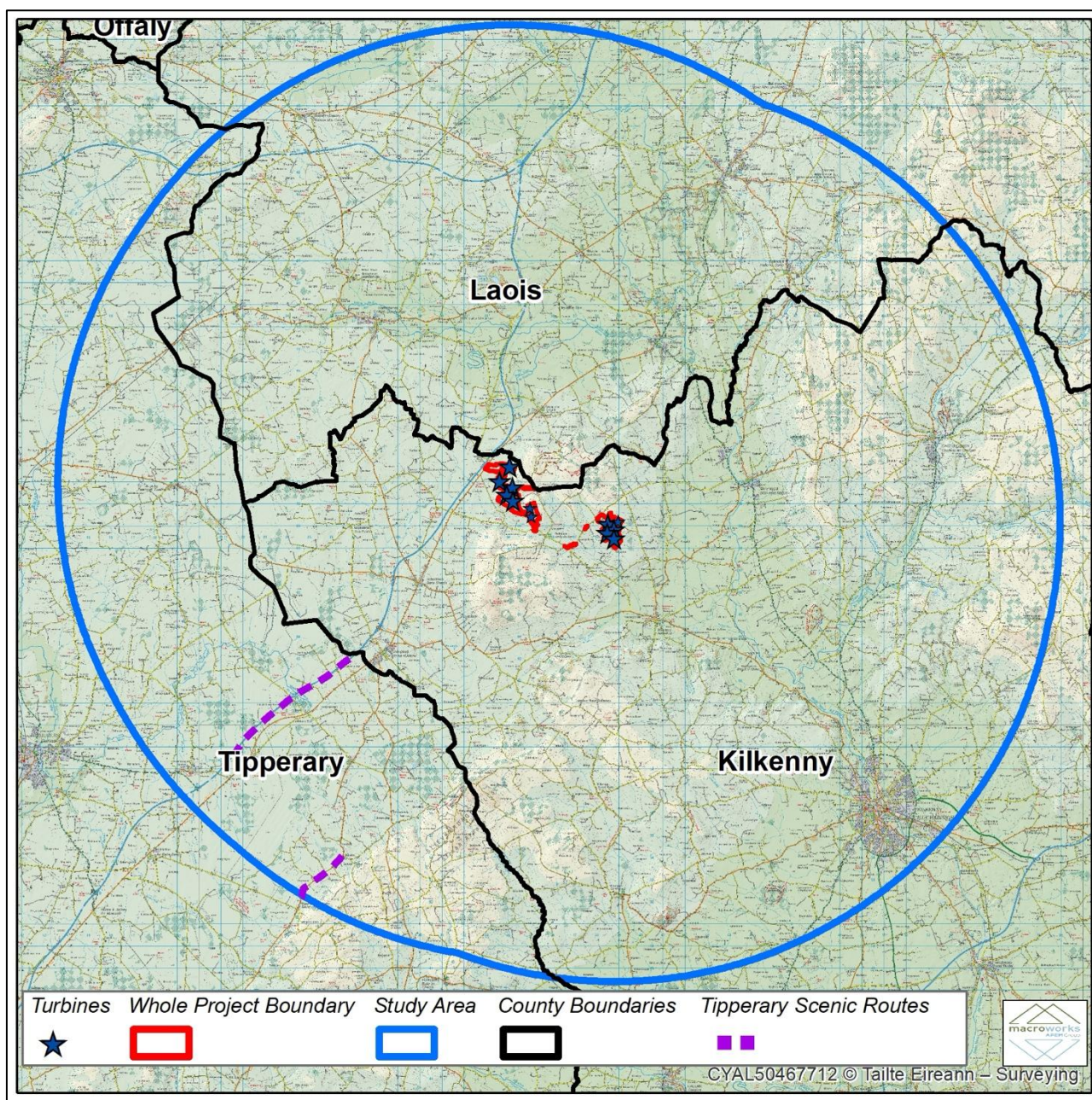


Figure 0-15 – Excerpt from the current Tipperary County Development Plan showing scenic designations with regard to the Proposed Gathabawn Windfarm

EIAR 14.3.5 Identification of Viewpoints as a Basis for Assessment

The results of the ZTV analysis provide a basis for the selection of Viewpoints (VPs), which are the locations used to study the landscape and visual impact of the proposed wind farm in detail. It is not warranted to include each and every location that provides a view of this development as this would result in an unwieldy report and make it extremely difficult to draw out the key impacts arising from the project. Instead, a variety of receptor locations was selected that are likely to provide views of the proposed wind farm from different distances, different angles and different contexts.

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

- Key Views (from features of national or international importance)(KV);
- Designated Scenic Routes and Views (DSR/SV);
- Local Community views (LCV);
- Centres of Population (CP);
- Major Routes (MR); and
- Amenity and heritage features (AV);

Where a VP 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. See also ZTV Figures in Appendix 14.3 and **LVIA Photomontages Books 1 to 3**.

Key Views (KV)

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

Designated Scenic Routes and Views (DSR/SV)

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

Local Community Views (LCV)

This type of VP represents those people who live and/or work in the locality of the Proposed Gathabawn Windfarm, usually within a 5 km radius of the site. Although the VPs are generally located on local level roads, they also represent similar views that may be available from adjacent houses. The precise location of this VP 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 VPs is necessary in order to sample the spectrum of views that would be available from surrounding dwellings.

Centres of Population (CP)

VPs 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 site. The VP may be selected from any location within the public domain that provides a clear view either within the settlement or in close proximity to it.

Major Routes (MR)

These include national and regional level roads and are relevant VP locations due to the number of viewers potentially impacted by the Proposed Gathabawn Windfarm. The precise location of this category of VP is not critical and might be chosen anywhere along the route that provides clear views towards the proposal 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 embankments, vegetation or buildings.

Tourism, Amenity and Heritage Features (AH)

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 Viewpoints selected in this instance are set out in the Table 14-2.

See also the **LVIA Photomontages Books 1 to 3**.

Note: There are also a selection of amenity and heritage views (AV3, AV4, AV5, AV6) that were selected principally to cover heritage assets at the request of the project heritage specialist. Where these relate to heritage features that are in the public domain and regularly visited, they are also relevant to the visual impact assessment and will be assessed herein. These views informed the Cultural Heritage assessment - Chapter 15.

Chapter 14: The Landscape (Landscape and Visual Assessment)**Table 0-2 - Outline description of selected Viewpoints (VPs)**

VP No.	Location	Primary Receptor Type	Distance the Proposed Gathabawn Windfarm	Direction of view
VP1	L1596 overbridge of the M7 motorway	MR	14.0km	SE
VP2	Heywood Gardens	AH, SV	14.9km	SW
VP3	The Harp GAA club north of Durrow	CP	8.7km	SW
VP4	R433 at Rathdowney	CP	8.5km	SE
VP5	L5591 overbridge of the M8 motorway	MR	5.0km	SE
VP6	Local road at Galesquarter	SV, MR, CP	3.4km	S
VP7	N77 at Ballynaslee	MR	5.9km	SW
VP8	R694 regional road at Finnan	SR, MR	8.9km	W
VP9	R639 regional road at Coolnacrutta	MR, LCV	0.9km	E
VP10	Galmoy Graveyard	CP, LCV, AH	4.3km	E
VP11	Lisdowney GAA Club	CP, LCV	3.0km	SW
VP12	L5818 local road at Ballylehaun	LCV	0.8km	W, S & E
VP13	St. Patricks GAA at Ballyragget	CP	6.1km	W
VP14	Grangefertagh Round Tower	AH, LCV	3.0km	E
VP15	L3209 north of Templetuohy	CP	14.6km	E
VP16	L5821 at Ballygowney	LCV	1.4km	E & W
VP17	L1803 at Rathlogon	LCV	1.1km	NE & E
VP18	L1808 at Monphole	LCV	0.9km	W
VP19	L5886 at Knockmajor	SV	17.9km	W
VP20	L1806 at Garrydague	LCV	1.1km	E & W
VP21	L5819 south of Gathabawn	LCV, CP	1.3km	NW & NE
VP22	L1805 at Frankford	SV, LCV	1.4km	N & NE
VP23	R694 at Clone	MR, LCV	3.1km	NW
VP24	L1804 at Balleen Lower	LCV	1.7km	N & NW
VP25	Johnstown GAA Club	CP	5.6km	NE
VP26	L1818 at Lismaine Bridge	LCV	5.8km	NW
VP27	St. Lachtain's GAA Club at Freshford	LCV, CP	4.5km	NW
VP28	R639 Regional Road at Urlingford	CP, MR	8.2km	NE
VP29	L5000 at Kyleballynamoe	LCV	5.6km	N
VP30	L50104 at Threecastles	CP	8.8km	NW
VP31	St. Canice's Round Tower	CP, AH	16.6km	NW
VP32	Kilcooley Abbey	AH	13.0km	NE
VP33	Rathlogon Moat Ringfort	AH	0.9km	N & E
VP34	Clomatagh Hillfort	AH	4.2km	N & E
VP35	Ballylarkin Church	AH	4.7km	NW
VP36	Upper Court House	AH	4.6km	NW
VP37	L5753 at Aharney	SV, LCV	4.4km	S

Viewpoint Locations

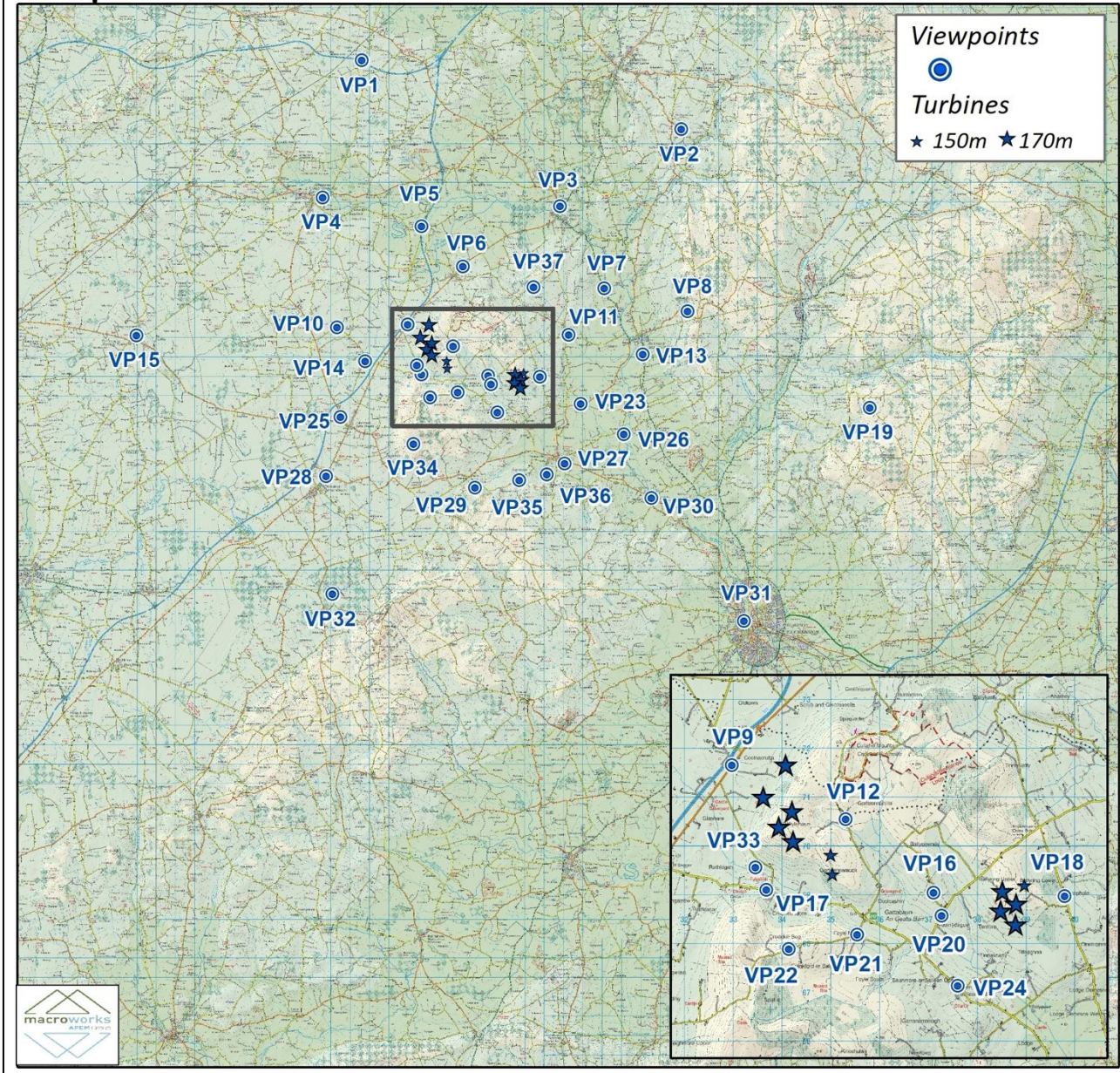


Figure 0-16 - Map of Viewpoint Locations

Note: Full size Figure 0-16 in Appendix 14.3 and **L VIA Photomontages Books 1 to 3.**

EIAR 14.3.6 Do nothing scenario

In a Do-Nothing scenario, the Proposed Gathabawn Windfarm would not proceed and the existing landscape and visual characteristics of the site would remain broadly consistent as per the baseline sections above. The site would continue to be predominantly managed as improved agricultural pasture, principally for cattle grazing, together with areas managed for sheep and silage production. Consequently, no material change to the existing landscape character of the site would be anticipated in the short to medium term.

The wider landscape would, however, continue to evolve independently of the Proposed Gathabawn Windfarm. Given the established presence of wind energy development within the study area combined with the Acceptable in Principle designation that contains the site and surrounding landscape, there remains the potential for further wind energy proposals to emerge over time, subject to the relevant planning and consenting processes. Similarly, over the longer term, the nearby Lisdowney Wind Farm would ultimately reach the end of its operational life, at which point it may be decommissioned or potentially repowered, subject to future consenting. Any repowering could potentially comprise fewer turbines of a larger scale, reflecting the general evolution of contemporary wind turbine technology. As a result, whilst the site itself would be expected to remain broadly consistent with its existing agricultural character, the wider landscape and visual baseline should not necessarily be regarded as static over the longer term.

EIAR 14.4 IMPACT OF THE PROPOSED DEVELOPMENT

This Section comprises an evaluation of the impacts of the proposal on the receiving Population environment.

EIAR 14.4.1 Criteria & Methodology

The criteria used for impact evaluation in this report is based on the EPA guidance document Guidelines on the Information to be contained in Environmental Impact Assessment Reports, and the GLVIA3 and NatureScot guidance. Based on the assessment criteria employed herein (See Appendix 14.1), potential significant impacts are considered most likely to occur in instances where highly sensitive landscape and visual receptors coincide with high order landscape and visual effects (see Table 14-3, section 14.4.6 of this chapter). From Macro Works previous experience of this type of development in a rural/upland setting, it is considered that potentially significant landscape and visual impacts have the potential to occur in the following ways:

Landscape Impacts

- a) Irreversible physical effects on sensitive landscape features
- b) Disruption of existing land use patterns
- c) Incongruous change to areas of sensitive landscape character

Visual Impacts

- a) A combination and spatial dominance as seen from highly sensitive receptor locations. This is most likely to occur within 3km of the Proposed Gathabawn Windfarm. *(1/3 of VPs are taken within 3km)*
- b) Visual clutter and ambiguity as seen from highly sensitive receptor locations. This can occur at any distance, but tends to occur beyond 2-3km as turbines become stacked in perspective and a more two-dimensional layout is perceived.
- c) A combination of both of the above effects.

In terms of potential landscape impacts, from baseline studies and early-stage assessment specific to the Proposed Gathabawn Windfarm (as previously detailed in Section 3.3.2.2 and 3.3.2.3), the site of the Proposed Gathabawn Windfarm contains three sensitive elements: 'Altitude above 200m', 'Principal Ridgeline' and 'Slopes greater than 10%.' However, it is worth repeating that these individual elements are considered as component parts of the overall landscape character of an area, as none are indisputably sensitive in isolation.

The most sensitive visual receptors in this instance, are the scenic designations (identified in EIAR 14.3.4.4) that are located within 5km and, marginally less so, 5-10km from the site.

EIAR 14.4.2 Source-Pathway-Receptor

The following sources of impacts and pathways for these impacts to the identified receptors (sensitive aspects) of Population are listed below.

EIAR 14.4.2.1 Sources of Impact

<u>Construction Phase Sources</u>	<u>Operational Phase Sources</u>	<u>Decommissioning Phase Sources</u>
Presence of construction machinery and earthworks	<u>Operating turbines</u>	<u>Presence of working machinery and earth works</u>
<u>Construction Traffic</u>	<u>Presence of buildings</u>	

ElAR 14.4.2.2 Pathways

- Visibility
- Landcover

ElAR 14.4.2.3 Receptors

- Landscape character
- Visual Amenity

ElAR 14.4.3 Application of Mitigation Measures

Given the highly visible nature of commercial wind energy developments it is not generally feasible to screen them from view using on-site measures as would be the primary form of mitigation for many other types of development. Instead, landscape and visual mitigation for wind farms must be incorporated into the early-stage site selection and design phases.

In this instance, the two main forms of landscape and visual mitigation employed were:

- Mitigation by avoidance and design
- Buffering of Residential Receptors

ElAR 14.4.3.1 Mitigation by Avoidance and Design

With regards to mitigation by avoidance, all of the proposed turbines are set back several hundred metres from both local roads and the aforementioned waymarked trails/loops within the locality. In addition, while there will be some clear views of the proposed turbines afforded from the scenic route to the south of the site, the turbines are not considered to present in an overbearing manner from this or other scenic designation nor will they block sensitive views or vistas.

In terms of design, as highlighted in ElAR 14.3.2.1, it is considered that the Proposed Gathabawn Windfarm design is largely in accordance with the guidance for this 'Hilly and Flat Farmland' landscape type, as set out in the Department of Environment, Heritage and Local Government Wind Energy Development Guidelines. While the 'height' of turbines "tend not to be tall" for this landscape type, according to those guidelines, "*an exception to this would be where they are on a high ridge or hilltop of relatively large scale.*"

Furthermore, the maximum proposed tip height of the turbines (i.e., 150 m-170 m) is constrained in relation to the range of the latest onshore turbines proposed within for wind energy schemes in Ireland, which range from 185 m to 220 m. In terms of setting, the site is located across a hilltop setting upon which wind energy informs its landscape character and fabric, and in an area of the county that is deemed 'Acceptable in principal' for such wind energy developments.

ElAR 14.4.3.2 Buffering of Residential Receptors

For the Proposed Gathabawn Windfarm, the minimum distance of any turbine from the nearest residential receptor is at least 500m, with at least four times tip height to third party dwellings, which exceeds and fully complies with the setback distance outlined in both the current 2006 Guidelines (i.e. >500m), and in relation to 3rd party dwellings - the Draft Revised Guidelines (2019), which in this instance is 600 m (4 x 150 m tip height) and 680 m (4 x 170 m tip height).

Variation in residential buffer distances within the nearest kilometre has a much more noticeable effect on perceived turbine scale than when it occurs in the context of more distant views. This is due to the law of

perspective, that doubling the distance to an object halves its perceived height. The reduction factor is even more pronounced when considered in the context of the 'swept area' of turbine blades and not just their tip height. This exponential 'scale in relation to distance' scenario is illustrated in Figure 0-17 below.

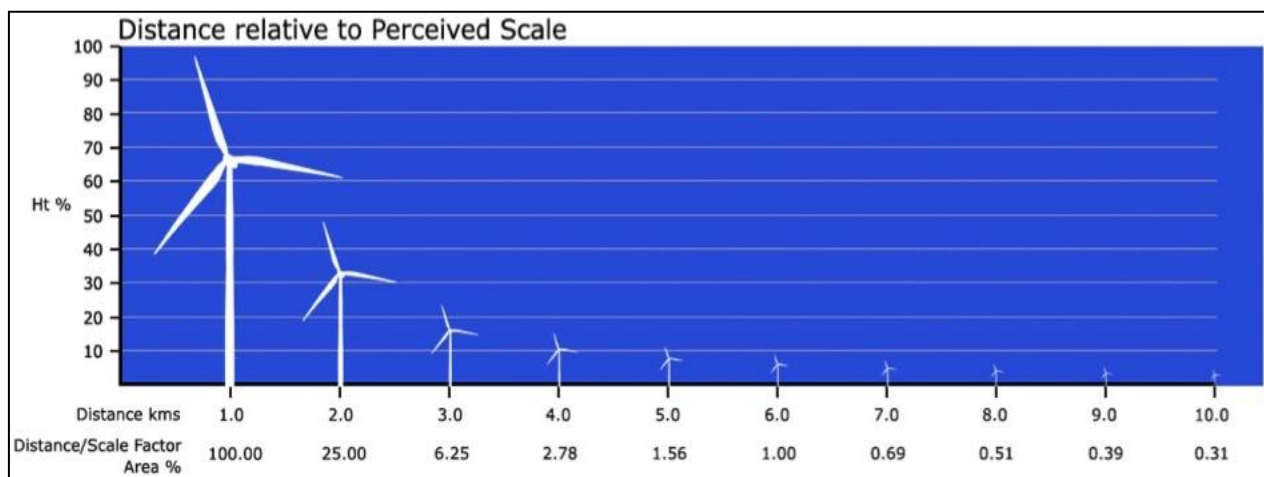


Figure 0-17 - Turbine 'scale in relation to distance' relationship

EIAR 14.4.4 Evaluation of Landscape Effects**EIAR 14.4.4.1 Landscape Character, Value and Sensitivity**

Effects on landscape character will be considered at both the localised scale of the site and its immediate surrounding landscape (<5 km), as well as at the broader scale of the study area (5–20 km). Landscape sensitivity in the context of this project-level LVIA needs to go beyond the generic measures of sensitivity employed in the relevant county Landscape Character Assessments and instead focus on the specific attributes of the receiving landscape and the nature of the Proposed Gathabawn Windfarm.

In terms of sensitivity to the Proposed Gathabawn Windfarm, the most sensitive landscapes and landscape features are likely to be those that exhibit enclosed or intricate patterns of landform and land use and/or a strong sense of heritage or past times that are not strongly influenced by modern development. Areas with a strong sense of naturalness, or with low levels of built development and human influence, are also likely to be more sensitive to the proposed wind farm development.

EIAR 14.4.4.1.1 Central Study Area (< c. 5km from nearest turbines)

The most influential land use in terms of landscape character within the vicinity of the site is the same land use that comprises the site itself: rolling farmland. Although not without aesthetic merit, this land use is anthropocentric and has been highly modified over several centuries. It remains in a continual state of evolution, reflecting productive and evolving agricultural land-use and management systems. In addition to the overwhelmingly agricultural land use, the Central Study Area also contains commercial conifer plantations and existing wind energy development on the same hill range as the Proposed Gathabawn Windfarm, as well as, to a lesser extent, areas of woodland. Overall, the landscape of the Central Study Area is defined by robust and typically intensive land management and tends to relate more strongly to sustaining the rural economy and rural way of life than to scenic or naturalistic values.

With the exception of the River Nore, which fringes the eastern edge of the Central Study Area, natural watercourses within the Central Study Area tend to be small or modest in scale. Although these represent valued and long-established elements of the landscape, they are not particularly prominent landscape features. There are, however, a number of historic and/or archaeological features within the Central Study Area, including some within 1 km of the site, a demesne landscape (Upper Court, near Freshford), located more than 4 km from the site. There are also several NPWS designations in the vicinity of the proposed turbines and throughout the broader Central Study Area.

The nearest designated and/or protected view to the site is located approximately 1 km south of the site and is one of two such scenic designations within the Central Study Area. Nevertheless, whilst the landscape of the Central Study Area contains some aesthetic and naturalistic values, these are generally secondary to its prevailing productive and intensively managed character. The Central Study Area is further influenced by a busy and substantial motorway corridor and several settlements. Combined with the long and established legacy of settlement and land management across this hillscape, these influences engender a particularly anthropocentric sense of place.

In terms of the landscape designations within the Kilkenny County Development Plan, as outlined in EIAR 14.3.4.4, the site is not contained within an area designated as ‘Highly Scenic / Visually Pleasing’, a factor that also informs its identification as ‘Acceptable in Principle’ for wind energy development. Whilst no overall sensitivity rating is ascribed to the Landscape Character Areas of the county, the site of the Proposed Gathabawn Windfarm contains three identified sensitive elements: ‘Altitude above 200 m’, ‘Principal Ridgeline’ and ‘Slopes steeper than 10%’. However, it is important to reiterate that these individual elements

are considered as component parts of the overall landscape character of an area and are not necessarily sensitive in their own right.

Furthermore, as part of a project-specific landscape character assessment such as this, GLVIA3 (2013) advises that existing Landscape Character Assessments should be considered as a “*first step in establishing the landscape baseline*” (p. 77), rather than being applied directly to determine landscape sensitivity within a specific development context. Consistent with established LVIA practice in Ireland, a range of criteria is therefore applied by the assessor to determine the landscape sensitivity of the development site and its surrounding context (refer to Table 14-3).

For these reasons, and on balance, the landscape sensitivity of the Central Study Area is considered to be **Medium-low**.

ElAR 14.4.4.1.2 Wider Study Area (c. 5km – 20km from nearest turbines)

Owing partly to the diversity of landform and drainage patterns across different parts of the wider study area (as outlined in ElAR 14.3.1), the landscape value and character of these receiving environments are informed by differing characteristics, whilst also sharing certain common attributes.

The southern, southwestern and southeastern low rolling hillsides of the wider study area are characterised predominantly by intensive pastoral agriculture, alongside areas of commercial forestry plantation. More than 10 km north and west of the site, areas of exploited bogland become increasingly common, although they remain less prevalent than agricultural land.

In broad terms, the landscape character of the wider study area is that of a highly utilitarian and substantially modified landscape. In addition to agriculture and exploited bogland, sizeable tracts of commercial forestry plantation are evident, alongside smaller areas of deciduous woodland. Wind energy development is present in numerous locations, particularly to the west, south and northeast of the wider study area, whilst quarrying represents a less prominent influence. The wider study area also contains numerous towns, as well as Kilkenny City, and is traversed by several major transport routes, including motorways, national roads, two railway lines and numerous regional roads. Nevertheless, the wider study area also contains numerous recreational trails and routes, heritage amenities and natural heritage designations, including the more naturalistic and picturesque landscape of the River Nore valley.

Overall, however, this is a landscape characterised more strongly by its progressive, productive and intensive land management than by any overriding or internationally recognised scenic or naturalistic qualities, although it is certainly not without aesthetic, ecological and heritage value. The medieval core of Kilkenny City represents a notable exception to the broader landscape character of the study area, although it is located more than 17 km from the site.

Overall, a balance must be struck between the broad range of landscape types within the wider study area and their corresponding range of sensitivities. Taking these varied factors into account, the wider study area is considered, on balance, to be of **Medium-low** landscape sensitivity, albeit containing discrete areas of higher sensitivity.

ElAR 14.4.4.2 Magnitude and Significance of Landscape Impacts

The proposed Gathabawn turbines, as well as the ancillary development such as access and circulation roads and areas for the substation and hard standing for the turbines, are certain to impact the physical landscape of the site, as well as its character. However, the only likely landscape impact upon the wider central study (i.e., outside the Proposed Gathabawn Windfarm site) will be the impact upon landscape character.

EIAR 14.4.4.2.1 Construction-stage Landscape Impacts

The construction stage of the Gathabawn Windfarm Project will result in direct physical effects on the landscape fabric of the Ballylehaun and Ballyring Areas of the Windfarm site, principally arising from the construction of the 12 no. proposed turbines and associated foundations and hardstands, the on-site control buildings, one meteorological mast, new and upgraded access tracks, 2 no. on-site borrow pits, underground electrical infrastructure and the temporary construction compound. These works will necessitate localised excavation, earthworks and vegetation removal and will temporarily increase the intensity of activity across parts of the site. Notwithstanding this, the permanent physical footprint of the Proposed Gathabawn Windfarm will occupy a relatively limited proportion of the overall Gathabawn Windfarm site, and its prevailing topography, agricultural land use and broader land-cover pattern will remain largely intact.

The design of the Proposed Gathabawn Windfarm has sought to minimise direct physical effects on the landscape from the outset. The finalised internal access track layout comprises approximately 1.8 km of upgraded existing tracks and approximately 6.5 km of new access tracks. The utilisation and upgrading of existing tracks, where practicable, has reduced the extent of new land take and associated disturbance. New sections of access track have also been aligned to respond to the natural contours of the landscape, insofar as practicable, thereby limiting the requirement for substantial cut-and-fill operations and reducing unnecessary modification of the existing landform.

Construction of the turbine foundations and associated hardstands will represent the principal areas of localised physical disturbance. Excavations will tie into existing ground levels and will be limited to those necessary to facilitate construction and the safe operation of the Proposed Gathabawn Windfarm. Temporary excavations, stockpiles and other areas of disturbed ground will be regraded to integrate with surrounding ground levels and appropriately reinstated and reseeded following completion of construction, in conjunction with advice from the project ecologist. Although these works will represent an intensive physical intervention at individual turbine locations during construction, they will be geographically dispersed across the Wind Farm Site rather than forming a single extensive area of landscape disturbance.

The Proposed Gathabawn Windfarm includes for two electrical control buildings, one at Ballylehaun and one at Ballyring, and will measure 20 m x 10 m, rising to a height of 7 m. The construction of these buildings will be similar to that of a small dwelling and will involve soil stripping and localised excavations for the incoming foundations. Overall, the construction stage impacts associated with these structures will be limited and localised to their immediate surroundings.

Some minor works will occur along the Turbine Delivery Route (FW8, FW9), however such effects will be highly localised in nature and confined to the immediate environs of the works, and having a very limited influence beyond approximately 200–500 m from the proposed works. The construction activities with these facilitating works will be temporary and of limited spatial extent and no significant landscape effects are likely to arise during the construction, operational, or decommissioning phases of the project.

With regard to the Candidate Gathabawn Grid Connection works, the proposed 110 kV Parksgrove substation will represent another permanent physical intervention within the surrounding landscape located adjacent to the N77 west of the settlement of Ballyragget. The substation compound will measure approximately 111 m in length by 58 m in width and will contain a range of electrical infrastructure, including two single-storey control building measuring approximately 25m in length and 18m in width, with the second IPP control building measuring approximately 20.1 m in length and 10.7 m in width. The compound will be enclosed by an approximately 2.6 m-high security fence. The substation has been located within the more urbanised surrounds of the settlement of Ballyragget and whilst the construction stage activities will result in an increase intensity of construction stage works here, these works will not appear incongruous in the context of the surrounding adjacent settlement.

The proposed underground grid connection will be routed along the public road between the Ballylehaun Area and the Ballyring Area, and will then extend 8.8 km from the Ballyring control buildings to the new Parksgrove Substation and onwards from Parksgrove to the existing EirGrid Ballyragget Substation in Moatpark. Construction will require the excavation of a relatively narrow linear trench, which will be progressively backfilled and reinstated to its pre-existing surface condition following the installation of the underground cable. The majority of the grid connection will be a cross-country route to minimise impacts on the local road network. The construction activities associated with the Underground Cabling routes will be temporary, linear and of limited spatial extent, and will largely utilise existing established corridors and transport routes or be heavily screened by intervening vegetation. Consequently, whilst there will be temporary and localised physical disturbance during installation, there will be little discernible long-term alteration to the landscape fabric along the grid connection route following reinstatement.

In terms of vegetation removal, there will be a requirement for the removal of some 3,700 m of existing hedgerow and 10 existing trees to facilitate bat buffer zones around the turbines, or to facilitate the delivery of the large turbine components. Whilst a notable extent of vegetation removal, this will be dispersed across the site, which limits its potential to be discerned or have any notable impacts on the prevailing character. Furthermore, the offset the removal of vegetation within the site, it is proposed to plant 3,700 linear meters of new hedgerow, whilst a further 1,300 m of existing hedgerow will be supplemented with native planting stock. Further biodiversity enhancements are also proposed and will be discussed in the operation landscape impacts section below.

During the construction stage, the presence of cranes, construction plant and machinery, temporary compounds, stockpiled materials, excavation works and increased vehicular activity will result in a temporary intensification of activity across the site. These elements will contrast with the prevailing agricultural character of the site and will temporarily increase its sense of disturbance. However, such impacts are an inherent and temporary aspect of the construction process and will progressively diminish as individual elements of the Proposed Gathabawn Windfarm are completed and disturbed areas are reinstated. Furthermore, the existing landscape is already a productive and intensively managed rural environment containing agricultural activity, commercial forestry, existing road networks and wind energy development, and therefore has an established capacity to accommodate a degree of physical change and activity, as demonstrated by the 'Acceptable in Principle' wind energy classification that contains the site.

Following construction, temporary working areas and other areas of disturbed ground will be reinstated, whilst the principal operational footprint will be confined to the turbines and associated hardstands, necessary access tracks, meteorological masts and the on-site substation. The wider agricultural use and prevailing land-cover pattern of the Wind Farm Site will continue. At the end of the operational life of the Proposed Gathabawn Windfarm, infrastructure will be decommissioned in accordance with the agreed decommissioning strategy, with areas no longer required for an ongoing use appropriately reinstated. Thus, a substantial proportion of the direct physical landscape effects associated with construction will be temporary and/or reversible.

Notwithstanding the relatively limited proportion of the overall Wind Farm Site that will be permanently altered, the construction stage will involve intensive localised disturbance at multiple locations across the site. This will arise principally from turbine foundation and hardstand construction, access track works, the substation compound, vegetation removal, temporary construction areas and associated excavation and earthworks. The extent and intensity of these works warrant a relatively elevated magnitude of landscape impact during the construction stage. However, this is offset by the retention of the site's prevailing topography and land-use pattern, the utilisation of existing access tracks where practicable, the reinstatement of temporary working areas and the short-term and largely reversible nature of the construction activities.

On balance, the magnitude of construction-stage impact on the physical landscape is considered to be **High-medium**, with a **Negative** quality of effect. As the construction programme for the Windfarm Project is anticipated to extend for approximately 20 months, these effects are considered **short-term** in accordance with EPA Guidance terminology.

As outlined in **Error! Reference source not found.**, the significance of landscape effects is determined by considering the sensitivity of the receiving landscape in conjunction with the magnitude of landscape impact, informed by the significance matrix presented in Table 14-3 and professional judgement. The receiving landscape has been assessed as having a **Medium-low** sensitivity, reflecting its predominantly productive agricultural character, intensive land management, existing commercial forestry and wind energy influences, whilst acknowledging the presence of discrete landscape, ecological and heritage features of greater sensitivity.

When the **High-medium** magnitude of construction-stage landscape impact is considered in conjunction with the **Medium-low** sensitivity of the receiving landscape, the Proposed Gathabawn Windfarm is considered to result in a **Substantial-moderate** significance of effect within and immediately around the proposed site during construction phase, but reducing quickly with distance and broader context. Thus, the construction stage landscape effect is deemed **Not Significant**. The effect will be **Negative** in quality and **Short-term** in duration.

EIAR 14.4.4.2.2 Operational-stage Landscape Impacts

For most commercial wind energy developments, the greatest potential for landscape character effects arises from the introduction of tall vertical structures with moving components into the receiving landscape. Where wind turbines are not already characteristic of an area, they can become a new and potentially defining influence on local landscape character. In this instance, however, wind turbines are not an unfamiliar feature of the wider study area. An existing wind farm is located within approximately 1 km of the site and occupies the northern slopes of the same hill range as the Proposed Gathabawn Windfarm. Whilst there are no other existing wind energy developments within the Central Study Area, there are up to 12 wind energy developments within the wider study area, comprising existing and permitted development and ranging in scale from a single turbine at Gurteen to over 29 turbines at Lisheen I+II Wind Farm. Wind energy therefore already contributes to the landscape character of the study area, albeit the most notable influences from wind farm development is within the wider western and southern extent.

Nevertheless, the Proposed Gathabawn Windfarm will not introduce an entirely new or unfamiliar development type into its landscape setting. Rather, its principal landscape character effect will be to intensify an established land use and increase the influence of wind energy on the character of the hillscape containing the site. This will be particularly apparent within the Central Study Area, where the Proposed Gathabawn Windfarm will represent a substantial increase in the scale and extent of wind energy development and will result in wind turbines becoming a more characteristic feature of the local landscape.

In terms of its scale and function, the Proposed Gathabawn Windfarm is considered to be reasonably well accommodated within the broader context of the Central Study Area, which comprises a range of productive and intensively managed rural land uses. These include pastoral agriculture, commercial forestry, transport infrastructure and existing wind energy development. Although the Proposed Gathabawn Windfarm will introduce a substantially greater vertical built influence than currently occurs across the site, it will not fundamentally alter the underlying productive and utilitarian rural character of the landscape. The existing pattern of farmland, forestry, hedgerows, local roads and dispersed settlement will remain readily discernible and the verdant tone and texture of the landscape still prevails, with the wind farm forming an additional and more prominent layer within this established landscape structure.

The scale of the underlying landform is also relevant to the capacity of the landscape to accommodate the Proposed Gathabawn Windfarm. The 12 no. proposed turbines will be distributed across a broad area extending approximately 6 km in a northwest–southeast direction. Although the turbines will be tall and prominent structures, their distribution across this relatively broad and elevated hillscape will provide a degree of spatial separation and will avoid concentrating the entire development within a confined landscape setting. Indeed, the dispersed layout of the proposed array, comprising two distinct clusters, aids in diminishing the overall perceived scale and extent of the development from the local context. The broad scale of the underlying landform, combined with the predominantly open agricultural and forestry land-use pattern, provides a landscape context capable of accommodating large-scale vertical infrastructure without undue conflict with the fundamental scale or pattern of the receiving landscape.

Nevertheless, within the site itself and its immediate surroundings, the Proposed Gathabawn Windfarm will represent a notable change in landscape character. The turbines will become defining elements of the site and will substantially increase the influence of wind energy on the immediate hillscape. This effect will be strongest within the site and its immediate surrounds, where the scale, movement and vertical expression of the turbines will be readily apparent. The character of the site will consequently change from one principally defined by productive agricultural land uses, with an existing wind energy influence nearby, to one in which wind energy represents a prominent and defining characteristic.

This influence will diminish progressively with increasing distance from the site. Beyond the immediate landscape context, the turbines will increasingly be experienced as one component of a much broader landscape containing extensive areas of farmland and forestry, settlements, transport corridors, existing wind energy development and other forms of rural infrastructure. The underlying landscape character beyond the site will therefore remain principally that of a productive rural landscape, albeit one within which wind energy development has a greater influence than at present. At greater distances across the wider study area, the Proposed Gathabawn Windfarm will occupy a progressively smaller proportion of the overall landscape context and its influence on landscape character will correspondingly reduce.

The Proposed Gathabawn Windfarm will have an operational lifespan of approximately 35 years and is therefore considered a **long-term**, rather than permanent, landscape influence. At the end of its operational life, the wind turbines and associated infrastructure that are no longer required will be dismantled and removed in accordance with an agreed decommissioning strategy. The proposed substation, meteorological mast and certain access tracks may remain in situ where required for an ongoing function or where a beneficial residual use is identified. Areas of hardstanding and other infrastructure that are no longer required will be appropriately reinstated and reseeded to integrate with the prevailing land cover.

Overall, the Proposed Gathabawn Windfarm will result in a clear intensification of wind energy development within the Central Study Area and will become a defining characteristic of the site itself. However, it will not introduce an unfamiliar development type into the receiving landscape, nor will it fundamentally alter the underlying pattern of productive agricultural and forestry land uses that principally define the character of the Central Study Area. Furthermore, the broad scale of the hillscape and the presence of existing wind energy development provide a degree of landscape capacity to accommodate the Proposed Gathabawn Windfarm, further reinforced by the ‘Acceptable in Principal’ classification that contains the site and landscape to the west.

On balance, the magnitude of operational-stage impact on landscape character is considered to be **High-medium** within the Site, reducing to **Medium** within the Central Study Area and then diminishing again at greater distances. This reflects the notable increase in the influence of wind energy and the defining effect of the turbines on the character of the site and its immediate surroundings, balanced against the robust, productive and modified nature of the receiving landscape, its broad-scale landform and the existing influence of wind energy development.

As outlined in **Error! Reference source not found.**, the significance of landscape effects is determined by considering landscape sensitivity in conjunction with the magnitude of landscape impact, informed by the significance matrix presented in Table 14-3 and professional judgement. When the **High-medium and medium** magnitude of operational-stage impact is considered in conjunction with the **Medium-low** sensitivity of the receiving landscape, the Proposed Gathabawn Windfarm is considered to result in a **Substantial-moderate and Moderate** significance of landscape character effect within the Site and Central Study Area, respectively. The effect will be **Negative** in quality and **Long-term** in duration.

Beyond the Central Study Area, the magnitude and corresponding significance of landscape character effects will progressively diminish with increasing distance and the increasing influence of intervening landscape features and broader landscape context. Effects will generally reduce to **Slight** and ultimately **Imperceptible** across the wider study area, as the Proposed Gathabawn Windfarm becomes an increasingly peripheral component of the overall landscape fabric.

In relation to the Candidate Gathabawn Grid Connection, potential impacts are limited to the Parksgrove Substation, as the grid cables will be underground. With regard to the Parksgrove Substation, there will be some localised intensification of development within the immediate surrounds of the substation, most notably when viewed from adjacent sections of the N77. Nonetheless, where visible, the substation will be viewed in the context of the busy N77 major road corridor and will be perceived against the nearby large-scale Tirlán Ballyragget development, in addition to several other highly anthropogenic land uses, including Ballyragget Substation. In this regard, whilst the proposed substation will result in an increased intensity of electrical infrastructure within the local landscape context, it would not represent an inappropriate form of development in this setting.

Overall, the operational phase landscape effects are deemed **Not Significant**.

EIAR 14.4.4.2.3 Decommissioning-stage Landscape Impacts

The decommissioning phase will have similar temporary/short-term impacts as the construction phase with the movement of large turbine components away from the proposed site. There may be a minor loss of roadside and trackside vegetation that has grown during the operation phase of the Proposed Gathabawn Windfarm, but this can be reinstated upon completion of decommissioning.

Works in this phase will primarily involve disassembling the turbines and removing off-site. The proposed site roads, turbine foundations or the grid connection infrastructure will not be removed. The site roads will remain for agricultural access while the hardstand material and turbine foundations will be left to revegetate naturally. The substation and grid connection infrastructure will form part of the permanent national grid network. The decommissioning works and activities are described in chapter 5.11.

Overall, the magnitude of decommissioning stage landscape effects within the site and its immediately surrounding context is deemed to be **High-medium** and of a Negative quality, but of a Short-term duration. Beyond 5 km from the proposed wind farm site, the magnitude of landscape impact is deemed to reduce to Low and Negligible at increasing distances as the decommissioning related activities become a proportionately smaller component of the overall landscape fabric

When the **High-medium** magnitude of decommissioning-stage landscape impact is considered in conjunction with the **Medium-low** sensitivity of the receiving landscape, the Proposed Gathabawn Windfarm is considered to result in a **Substantial-moderate** significance of effect within and immediately around the proposed site during operational phase, but reducing rapidly with distance and broader context. Thus, the decommissioning stage landscape effect is deemed **Not Significant**. The effect will be **Negative** in quality and **Short-term** in duration.

EIAR 14.4.5 Evaluation of Visual Amenity effects (residual impact)**EIAR 14.4.5.1 Sensitivity of Visual Receptors**

The study area encompasses a diverse range of landscape types and visual receptors, extending from extensive areas of robust and modified rural landscape within the Central and Wider Study Areas to areas of higher scenic value and more localised naturalistic character associated with elevated lands and river corridors. The study area also contains a variety of amenity and heritage receptors of differing value and sensitivity.

Scenic designations within the study area tend to be associated with elevated locations that afford broad views across the wider working landscape, although some designated views within the current Laois CDP focus on more specific landscape features and areas. The nearest scenic designation to the site is V14 in the Kilkenny CDP, which relates to a stretch of elevated local road to the southwest of the settlement of Gathabawn. Views from this route are generally afforded to the north across nearby rolling lands and, further in the distance, across the broad working landscape beyond. The scenic qualities of these views principally derive from their elevated position, openness and extensive visual reach. However, it should be noted that these are not views across a pristine or highly naturalistic landscape setting; rather, they encompass typical rural land uses and anthropogenic influences, including existing wind energy development. Nonetheless, the expansive nature of the views affords a high degree of scenic quality and, on balance, receptors associated with this designation (V14) are deemed to be of **High-medium** sensitivity.

Other scenic designations within County Kilkenny and the study area exhibit broadly similar qualities, with their scenic value principally derived from elevated positions and expansive views across the surrounding landscape. Scenic designations V12 and V19, for example, afford broad views across the River Nore valley and towards the surrounding elevated rolling hills. Whilst these views possess notable scenic qualities, they are similarly characterised by a range of productive land uses and existing built features that reinforce the working and modified character of the wider landscape. On balance, receptors associated with these scenic designations are also classified as being of **High-medium** sensitivity.

The current Laois CDP also includes several scenic designations within the Central and Wider Study Areas. Whilst many of the designated scenic views within the Wider Study Area are of limited relevance to the Proposed Gathabawn Windfarm due to their orientation, several scenic designations within and immediately beyond the Central Study Area are relevant to the assessment. Scenic Views 004, 014 and 021 are all located within the Central Study Area, directly to the north/northwest of the wind farm site. Whilst the orientation of Views 014 and 021 is slightly offset from the general direction of the Proposed Gathabawn Windfarm, they nonetheless afford pleasant views across the surrounding landscape. View 004 is oriented more directly towards the Proposed Gathabawn Windfarm and exhibits similar qualities to the scenic views identified within County Kilkenny, comprising elevated and expansive views across the wider working landscape. As with the Kilkenny scenic designations, these views possess notable scenic qualities but are experienced within a productive and modified rural landscape rather than a pristine or highly naturalistic setting. Indeed, the existing Lisdowney turbines are viewed in the direct orientation of this scenic designations. On balance, receptors associated with these scenic designations in County Laois are classified as being of **High-medium** sensitivity.

The study area also encompasses a range of amenity and heritage features throughout the Central and Wider Study Areas. The susceptibility of these receptors to visual change varies considerably, with some deriving a substantial proportion of their amenity value from views across the surrounding landscape, whilst others are

already influenced by various forms of existing development. Heywood Demesne is a notable amenity and heritage feature located within the northern extent of the study area and also encompasses scenic designations identified within the Laois CDP. Pleasant and expansive views are afforded across the wider surrounding landscape from parts of the demesne and, on balance, visual receptors at this location are classified as being of **High-medium** sensitivity.

A relatively high concentration of local heritage receptors is also distributed throughout the study area. Whilst these features may be sensitive in heritage terms, their susceptibility to visual change is generally more limited, particularly where their appreciation is principally related to the feature itself rather than views across the wider landscape. In this regard, local heritage receptors within the study area, such as churches, graveyards and similar features, are generally classified as being of **Medium** visual receptor sensitivity.

With regard to linear amenity features, such as on-road cycling routes, receptor sensitivity varies as these routes pass through different landscape contexts. The sections most susceptible to visual change tend to correspond with elevated and more open locations that afford expansive views across the wider landscape, whilst more enclosed sections have a lower susceptibility to change. Consequently, visual receptor sensitivity along these linear amenity routes generally ranges from **Medium-low** to **High-medium**

Views of the inland working agricultural landscape are generally pleasant in terms of its rolling pastoral aesthetic and 'green', settled working character. The network of hedgerows and vegetation that occur throughout it contributes to some sense of naturalness and, in combination with its undulating topography, generates a high degree of containment in many locations. However, whilst a pleasant pastoral aesthetic is noted throughout some parts of the study area, the wider landscape is also influenced by an array of anthropogenic features such as urban settlements, commercial and industrial development, major route receptors and localised areas of existing wind farm development. Overall, the sensitivity of visual receptors within the more working landscape context, which relates to much of Central Study Area and wider study area, tends to range between Medium and Medium-low, with those of a Medium sensitivity representing more open expansive views across the wider landscape. It is also worth noting that some local amenity and heritage features also occur throughout the study area, which heightens the degree of receptor sensitivity at a local level.

Key differentials in terms of visual receptor sensitivity relate to the occupation of the visual receptor and whether views of the surrounding landscape are an inherent part of the experience. Static residential receptors are considered generally more susceptible to changes in views over those where views are experienced transiently by those travelling through the landscape, particularly on major transport routes where road infrastructure and traffic volume draw from visual amenity. Likewise, receptors located in closer proximity to the Proposed Gathabawn Windfarm are considered more susceptible to changes in views over those where views are experienced at a distance.

On the basis of the site-specific factors outlined above and in accordance with the general visual receptor sensitivity considerations contained in the methodology Error! Reference source not found., visual receptor sensitivity judgements are provided for each representative viewpoint in the Table 14-3 below and within the visual impact appraisal in Appendix 14.1.

ElAR 14.4.5.2 Magnitude and Significance of Visual Effects

ElAR 14.4.5.2.1 Construction Stage Visual Effects

During construction, the main visual impacts will arise from frequent heavy vehicle movements and worker vehicles travelling to and from the proposed wind farm site and using the new site entrances located along the surrounding local road network. There will be construction machinery on site, which may rise above intervening vegetation and buildings. Some of the most notable construction stage visual impacts will result from the erection of the proposed turbines using tower cranes. There will also be stockpiles of stripped topsoil as well as construction materials awaiting use. In addition to construction activities at the proposed wind farm Site, the Project will also generate some localised visual impacts during facilitating works along the Turbine Delivery Route between Ballylehaun and Ballyring, and along Underground Cabling routes and at the offsite Parksgrove substation location. However, a large part of this short-term activity within the proposed wind farm site will remain screened from view by the hedgerows and other mature vegetation that surround the site and its immediate landscape context. Furthermore, construction-related activity is short-term in nature and will cease once the Proposed Gathabawn Windfarm becomes fully operational.

For these reasons, the magnitude of visual impact at the construction stage is deemed to be no greater than High/High-medium at the nearest surrounding receptors, however, this reduces swiftly at greater distances from the proposed wind farm site, especially within the wider study area, where the magnitude of visual impact is considered to be no greater than Low/Low-negligible. Combined with a Medium/Medium-low sensitivity for receptors (refer to Table 14-3 below for sensitivity of receptors at representative viewpoints) within the immediate study area (<1 km from the proposed wind farm site), the significance of visual effect will be not greater than **Substantial-moderate/Moderate** and of a **Negative** quality. Thereafter, the significance of effect will reduce to **Moderate/Moderate-Slight** throughout the Central Study Area and **Slight** and **Imperceptible** at increasing distances within the wider study area as the Proposed Gathabawn Windfarm becomes a progressively smaller component in the afforded view.

ElAR 14.4.5.2.2 Operational Stage Visual Effects

Table 14-3 below summarises the full textual assessment of visual effects for each Viewpoint (VP) contained in See also ZTV Figures in Appendix 14.3 and **LVIA Photomontages Books 1 to 3**. Whilst the full textual assessment for each VP is normally contained within the landscape and visual chapter, in this instance, given the considerable number of VPs, it is considered more prudent to place this material in a separate appendix and focus herein on the significance of the findings. With regard to Table 14-3 below, the left-hand side of the table incorporates data associated with the viewing distance to the nearest turbine, whilst the right-hand side contains professional judgements in respect of the view. It is important to note that the professional judgements are based on the effects experienced in relation to the view and are not directly influenced by the statistical data (i.e. the distance to the nearest turbine). These aspects are only combined within Table 14-3 in order to identify patterns of effect to better inform the conclusions of this assessment.

Visual impacts were assessed across 33 No. Viewpoints (listed in the Table below) on the basis of visual receptor sensitivity versus the magnitude of the visual impact and the full textual assessment of visual impacts at each representative viewpoint is contained in the **LVIA Photomontages Books 1 to 3**.

The key visual impacts and trends from the visual impact assessment are provided after the table.

EIAR 14.4.6 Visual Impact Assessment of Visual Amenity Receptors

Table 0-3 - Summary of Visual Effects at Viewpoints (VP's)

VP No.	VP Name	Distance to nearest turbine (km)	Visual receptor Sensitivity	Visual Impact Magnitude	Significance of impact/ quality of effect
VP1	L1596 overbridge of the M7 motorway	14.0km	Medium-low	Low-negligible	Slight-imperceptible / Negative / Long-term
VP2	Heywood Gardens	14.9km	High-medium	Low-negligible	Slight-imperceptible / Negative / Long-term
VP3	The Harp GAA club north of Durrow	8.7km	Medium-low	Low-negligible	Slight-imperceptible / Negative / Long-term
VP4	R433 at Rathdowney	8.5km	Medium-low	Low-negligible	Slight-imperceptible / Negative/ Long-term
VP5	L5591 overbridge of the M8 motorway	5.0km	Medium-low	Medium-low	Moderate-slight / Negative / Long-term
VP6	Local road at Galesquarter	3.4km	High-medium	Medium-low	Moderate-slight / Negative / Long-term
VP7	N77 at Ballynaslee	5.9km	Medium-low	Low-negligible	Slight-imperceptible / Negative / Long-term
VP8	R694 regional road at Finnan	8.9km	High-medium	Low	Slight / Negative / Long-term
VP9	R639 regional road at Coolnacrutta	918m	Medium-low	High-medium	Moderate / Negative / Long-term
VP10	Galmoy Graveyard	4.3km	Medium-low	Medium	Moderate-slight / Negative / Long-term
VP11	Lisdowney GAA Club	3.0km	Medium	Low	Slight / Negative / Long-term
VP12	L5818 local road at Ballylehaun	796m	Medium	High-medium	Substantial-moderate / Negative / Long-term
VP13	St. Patricks GAA at Ballyragget	6.1km	Medium-low	Low	Slight / Negative / Long-term
VP14	Grangefertagh Round Tower	3.0km	High-medium	Low	Slight / Negative / Long-term
VP15	L3209 north of Templetuohy	14.6km	Medium-low	Negligible	Imperceptible / Neutral / Long-term
VP16	L5821 at Ballygowney	1.4km	Medium-low	High-medium	Moderate / Negative / Long-term
VP17	L1803 at Rathlogan	1.1km	Medium-low	High-medium	Substantial-moderate / Negative / Long-term
VP18	L1808 at Monphole	855m	Medium-low	High-medium	Substantial-moderate / Negative / Long-term
VP19	L5886 at Knockmajor	17.9km	Medium	Low-negligible	Slight-imperceptible / Negative / Long-term
VP20	L1806 at Garrydague	1.1km	Medium-low	High-medium	Substantial-moderate / Negative / Long-term
VP21	L5819 south of Gathabawn	1.3km	High-medium	Medium	Moderate / Negative / Long-term
VP22	L1805 at Frankford	1.4km	High-medium	Medium	Moderate / Negative / Long-term
VP23	R694 at Clone	3.1km	Medium-low	Medium-low	Moderate-slight / Negative / Long-term

VP No.	VP Name	Distance to nearest turbine (km)	Visual receptor Sensitivity	Visual Impact Magnitude	Significance of impact/ quality of effect
VP24	L1804 at Balleen Lower	1.7km	Medium-low	Medium	Moderate / Negative / Long-term
VP25	Johnstown GAA Club	5.6km	High-medium	Low	Slight / Negative / Long-term
VP26	L1818 at Lismaine Bridge	5.8km	Medium-low	Low	Slight / Negative / Long-term
VP27	St. Lachtain's GAA Club at Freshford	4.5km	Medium-low	Medium-low	Moderate-slight / Negative / Long-term
VP28	R639 Regional Road at Urlingford	8.2km	Medium-low	Low	Slight / Negative / Long-term
VP29	L5000 at Kyleballynamoe	5.6km	High-medium	Medium-low	Moderate-slight / Negative / Long-term
VP30	L50104 at Threecastles	8.8km	Medium-low	Low	Slight / Negative / Long-term
VP31	St. Canice's Round Tower	16.6km	High-medium	Negligible	Imperceptible / Neutral / Long-term
VP32	Kilcooley Abbey	13.0km	Medium-low	Negligible	Imperceptible / Neutral / Long-term
VP33	L5753 at Aharney	4.4km	High-medium	Medium-low	Moderate-slight / Negative / Long-term

See **LVIA Photomontages Books 1 to 3**.

EIAR 14.4.6.1 Impacts on Designated Views

Of the three aforementioned relevant scenic designations within County Kilkenny, one is located within the Central Study Area, whilst the remaining two are approximately 9–10 km from the site. With elevated views effectively overlooking the site from approximately 1 km away, and in the direction of the designated view, protected view/route V14 is represented by two viewpoints: VP21 and VP22. These two representative viewpoints illustrate the varied visibility of the proposed turbines afforded from this scenic designation. Indeed, representative viewpoint VP22 represents the western section of this local road, where more elevated views are afforded across the wider working landscape to the north. In contrast, the eastern sections of this scenic designation have the potential to be more enclosed by surrounding roadside vegetation, with views exhibiting a slightly greater degree of containment by the surrounding landform.

In light of the visual sensitivity of this designation, its proximity to the site and the upland terrain it traverses, the potential for notable visual effects is relatively heightened. Overall, both representative viewpoints were classified as having a residual **Moderate** significance of visual effect. Whilst the Ballylehaun turbines present in a more prominent manner in VP22, this is somewhat moderated by the broad, open nature of the view, which aids in assimilating the scale of the proposed turbines. Furthermore, from this western section of the scenic designation, views of the Ballyring turbines are much less prominent and are often screened or partially screened by surrounding roadside vegetation. In contrast, VP21 affords a clear view of both turbine clusters. From VP21, the turbines will present as noticeable built elements, with their presence accentuated by the slightly uphill nature of the view. Nonetheless, from this part of the scenic designation, the surrounding roadside hedgerow vegetation will somewhat diminish the scale and intensity of the Proposed Gathabawn Windfarm, with the depicted view representing one of a number of brief gaps in the surrounding hedgerow vegetation.

Viewpoint VP8 was selected to represent the two other relevant County Kilkenny scenic designations, which relate to protected views/routes V12 and V19, respectively. Whilst the CDP identifies two separate scenic designations at these locations, a single representative viewpoint (VP6) was selected to represent both, as, at a distance of over 9 km, the viewing context afforded from each designation in relation to the Proposed Gathabawn Windfarm is broadly similar. Consequently, the nature and significance of potential visual effects are unlikely to differ materially between the two designations. The residual significance of visual effect was classified as **Slight**, principally due to the considerable viewing distance, whereby the proposed turbines present as distant background features and exert only a limited influence on the broad and open nature of the views afforded from these scenic designations.

Whilst the Proposed Gathabawn Windfarm is fully contained within County Kilkenny, the County Laois boundary is located less than 1 km north of the site and, therefore, consideration of scenic designations within County Laois is important. Indeed, Scenic Views 004, 014 and 021 in the current Laois CDP are all located within the Central Study Area.

Scenic View 004 is of greatest relevance to the Proposed Gathabawn Windfarm, with views from this scenic designation oriented towards the Ballyring turbines, and is represented by VP37. The proposed Ballyring turbines will be clearly visible from this location in combination with the existing Lisdowney turbines, which already form a characteristic feature of views afforded from this scenic designation. Nevertheless, the visible Ballyring turbines will noticeably increase the intensity of wind energy development within the view, although they will not notably block or obstruct the designated “*views of Knockmannon Hill*”. Whilst the proposed Ballyring turbines are notably larger than the existing Lisdowney turbines, they will present at broadly comparable apparent heights due to their greater viewing distance and their position slightly downslope of the existing turbines. Thus, whilst the Proposed Gathabawn Windfarm will notably increase the intensity of wind energy development within the scene, it will not markedly detract from the prevailing landscape

character, of which existing wind turbines are already an established feature. Consequently, the residual significance of visual effect at VP37 was deemed to be no greater than **Moderate-slight**.

Scenic Views 014 and 021 are also located within the Central Study Area, albeit their orientations are slightly offset from the main direction of the Proposed Gathabawn Windfarm. Viewpoint VP6 was selected to represent both scenic designations in this instance. Whilst the proposed turbines will be visible from here, they will present within the more robust aspect of the views afforded from these scenic designations and will not block or notably obstruct views towards any sensitive landscape features or areas. Although the rotating turbine components are likely to draw the eye at VP6, the turbines will not appear over-scaled or out of place within the context of this already modified rural setting. Thus, the residual significance of visual effect was classified as **Moderate-slight**.

Other scenic views including Laois scenic designation V022 and V023 represent Heywood Gardens, which is also a notable heritage and amenity feature within study area. Thus, the summary of visual effects is included in section EIAR 14.4.6.5 below.

In summary, the Proposed Gathabawn Windfarm represents an intensification of an existing land use across this broad hill range and will not notably detract from the most scenic aspects of the designated scenic views and routes within the study area. Thus, whilst the proposed turbines will generate a notable degree of visual change at some of the nearest scenic designations, the residual visual effects at scenic designations throughout the study area are classified as **Not Significant**.

EIAR 14.4.6.2 Impacts on Local Community Views

Local community views are considered to be those experienced by people who live, work and move around the area within approximately 5 km of the site (i.e. the Central Study Area). These receptors are generally those most likely to experience effects on their visual amenity as a result of wind energy development, due to their proximity to the turbines, the greater potential to experience views of the turbines from different directions, and the potential for the turbines to become a familiar feature of their everyday views. Nevertheless, it is important to reiterate that wind turbines are already an established and familiar feature of local community views within the Central Study Area.

In total, of the 37 viewpoints assessed as part of this LVIA, approximately half (VP5, VP6, VP9, VP10, VP11, VP12, VP14, VP16, VP17, VP18, VP20, VP21, VP22, VP23, VP24, VP27, VP33 and VP37) are located within the Central Study Area and are representative of local community receptors.

Representative viewpoints VP12, VP16, VP17, VP18, VP20, VP21, VP22 and VP33 represent some of the closest viewpoints to the Proposed Gathabawn Windfarm and, consequently, some of the local community receptors in closest proximity to the proposed turbines. Due to their proximity to the Proposed Gathabawn Windfarm, these receptors have the potential to experience some of the most notable visual effects generated by the proposed turbines. Of these, four representative viewpoints (VP12, VP17, VP18 and VP20) have been classified as having a residual significance of visual effect of **Substantial-moderate**, as they represent parts of the receiving landscape that will experience a marked degree of visual change and where the proposed turbines have the potential to become defining built features within local views.

VP6, VP21, VP22 and VP37 have already been considered in EIAR 14.4.6.1 above, as they were also selected to represent scenic designations within the study area, whilst also being representative of local community receptors. Of the remaining viewpoints within the Central Study Area, the significance of visual effect ranges from Slight to Moderate. It is worth noting that, in those instances where viewpoints are located between the Ballylehaun and Ballyring turbine clusters, the significance of visual effect is no greater than Moderate/Negative. This is principally a consequence of the degree of existing screening afforded by roadside

vegetation, which substantially diminishes the potential for both turbine clusters to be openly and simultaneously viewed from the same locations.

Furthermore, there are extensive areas within the Central Study Area where there is unlikely to be any visibility of the Proposed Gathabawn Windfarm. The representative viewpoint locations have deliberately been selected to capture a range of receptors and viewing circumstances, including locations where relatively open or 'worst-case' views of the Proposed Gathabawn Windfarm are likely to occur. Consequently, the assessed viewpoint effects should not be interpreted as representing a continuous or uniform level of visual effect throughout the Central Study Area. Rather, they provide a robust representation of the higher levels of visual effect likely to be experienced by local community receptors, alongside more typical viewing circumstances. Indeed, with reference to the ZTV map (Full size in Appendix 14.3), there are clearly identifiable parts of the Central Study Area where there is no potential for visibility as a result of intervening terrain, whilst large parts of the Central Study Area also have the potential to afford more limited views of between three and six turbines.

Despite the perceived scale of the proposed turbines from some of the nearest local community receptors, which is accentuated in certain instances by the uphill nature of views towards the site, the Proposed Gathabawn Windfarm is not considered to result in a strong sense of visual dominance or overbearing and responds well to its underlying landscape context. The turbines will represent prominent features from some locations; however, this will occur within a broad-scale, productive rural landscape where wind energy development is already an established component of the visual context. Furthermore, the combination of rolling landform, vegetation, forestry and other intervening landscape features will result in considerable variation in the degree and extent of turbine visibility throughout the Central Study Area.

On balance, and for the reasons outlined above, residual visual effects on local community receptors are classified as **Not Significant**.

EIAR 14.4.6.3 Impacts on Centres of Population

The principal centres of population within the Central Study Area include the settlements of Freshford and Cullahill, whilst smaller villages and crossroads settlements are also located within the 5 km Central Study Area, including Gathabawn, Lisdowney and Galmoy. Some of these settlements are considered in the preceding sections, such as Gathabawn and Cullohill, as they overlap with other receptor categories, including local community receptors and/or scenic designations.

The largest centre of population within the Central Study Area is Freshford, which is represented by viewpoint VP27. The Ballyring turbines have a greater potential to be visible from this settlement, although it should be noted that, due to the high degree of built development and mature vegetation within and surrounding the settlement, views of the turbines will often be brief, filtered or partially screened. Indeed, the Ballylehaun turbines, where visible, will present as more distant background features. For these reasons, the residual significance of visual effect at this settlement is deemed to be **Moderate-slight**, although many locations within the settlement have the potential to experience more limited visual effects due to intervening screening.

Viewpoint VP11 represents the crossroads settlement of Lisdowney and is located approximately 3 km from the Ballyring turbine array, with the Ballylehaun turbines situated approximately 6 km from this receptor. Nonetheless, the Ballylehaun turbines will be entirely screened by intervening terrain from this visual context, whilst only a heavily screened view of the Ballyring turbines has the potential to be afforded. Similar to Freshford, Lisdowney is surrounded by a high degree of mature vegetation, which substantially limits visibility of the Ballyring turbines. Only partial glimpses of up to two turbine nacelles and the blade sets of a further

five turbines will be afforded from here, rotating above the vegetated skyline. Overall, the residual significance of visual effect is deemed to be **Slight**.

Galmoy is a small settlement within the western extent of the Central Study Area and is represented by viewpoint VP10. In contrast to both Freshford and Lisdowney, there is greater potential for more open views of the Proposed Gathabawn Windfarm to be afforded from this local context. Indeed, relatively clear views of the Ballylehaun turbines will be available from here, where they will be viewed across the rolling hillside at a distance of approximately 4.3 km. Whilst this represents a greater viewing distance than at the aforementioned receptors, the more open nature of the view means that the turbines have the potential to present with a greater visual presence, albeit in a relatively clear and legible manner. Overall, the residual significance of visual effect at VP10 is deemed to be **Moderate-slight**.

Within the Wider Study Area (i.e. beyond approximately 5 km), settlements with no theoretical visibility of the Proposed Gathabawn Windfarm (i.e. located outside the ZTV, as outlined in Section 3.3.3.1) include Castlecomer and the northern suburbs of Kilkenny City. The County Laois town of Abbeyleix is located more than 16 km from the site. No representative viewpoint was selected within the town, as fieldwork confirmed that views of the Proposed Gathabawn Windfarm from publicly accessible locations within Abbeyleix would be highly unlikely, even in the form of glimpsed visibility. This is due to the combined screening effects of intervening built development and vegetation, in addition to the influence of atmospheric perspective at this distance.

Meanwhile, those villages and towns located within the ZTV and assessed in respect of potential visual effects include Ballyragget, (VP13 – **Slight**) Urlingford (VP28 – **Slight**), Templetuohy (VP15 – **Imperceptible**), Rathdowney (VP4 – **Imperceptible**), Durrow (VP3 – **Slight-imperceptible**), Johnstown (VP25 – **Slight**) Three Castles (VP30 – **Slight**) and Kilkenny City centre (VP31 – **Imperceptible**).

For the reasons outlined above, residual visual effects at centres of population within the study area are assessed as **Not Significant**.

EIAR 14.4.6.4 Impacts on Major Routes

The principal transport routes within the study area are the M8 (Dublin–Waterford motorway) and M7 (Dublin–Limerick motorway) corridors. It should be noted that substantial sections of these motorway corridors are contained by mature or semi-mature roadside vegetation and/or cuttings and embankments, which frequently curtail outward views. Furthermore, receptors travelling along motorways are motorists typically moving at relatively high speeds and whose primary focus is on the road and their direction of travel. Consequently, such receptors tend to have a lower visual sensitivity than recreational receptors, whose attention is more likely to be focused on their surroundings and the visual amenity of the landscape. Nonetheless, representative viewpoints from motorway overpasses have been selected in this instance to provide elevated and relatively open viewing positions, thereby representing a reasonable ‘worst-case’ scenario. Such elevated locations generally afford greater potential for visibility of the Proposed Gathabawn Windfarm than is likely to be experienced from the motorway carriageways themselves.

The M8 is represented by both VP5 and VP9. Viewpoint VP5 is located at an overpass in Whiterock townland, approximately 5 km from the nearest proposed turbine. The significance/quality of visual effect at this location is deemed to be **Moderate-slight/Negative**. Viewpoint VP9 is not directly located along the motorway corridor and instead relates to a section of the R639 regional road approximately 100 m east of the motorway. Whilst sections of the motorway corridor adjacent to this visual context are heavily contained, this viewpoint is representative of the potential brief views that could be afforded in the direction of the site. Indeed, from VP9, the proposed turbines within the Ballylehaun array will present as prominent built features, with turbine T2 particularly prominent within the view. The residual significance of visual effect at

VP9 is classified as **Moderate**. However, it is important to reiterate that the visual presence of the proposed turbines is likely to be substantially diminished along adjacent sections of the motorway due to intervening screening.

The M7 remains more than 14 km from the site and is represented by VP1, where the significance/quality of visual effect is deemed to be **Imperceptible/Neutral** due to the limited visual influence of the proposed turbines at this distance.

Outside the Central Study Area, national roads include the N10, N76, N75, N77 and N78. Two representative viewpoints are located along the N77 within the Wider Study Area, comprising VP7 and VP13. Viewpoint VP7 was classified as having a residual **Slight-imperceptible** significance of visual effect, whilst VP13 was classified as having a residual **Slight** significance of visual effect.

In summary, whilst the Proposed Gathabawn Windfarm will be visible from sections of the major and regional road network, the degree of visual effect will vary considerably depending on distance, intervening screening, orientation, and the duration and nature of available views. On balance, residual visual effects at major routes within the study area are classified as **Not Significant** with regard to the Proposed Gathabawn Windfarm.

EIAR 14.4.6.5 Impacts on Tourism, Recreational and Heritage Features

Within the Central Study Area, the nearest such features are the Cullahill/Binnianea Loop Walk and the Gathabawn Loop Walk, which overlap in places. These routes are represented by VP10, with views of the proposed turbines varying considerably in terms of proximity, setting and context, ranging from less than 1 km to more than 4 km from the nearest proposed turbine. VP10 is deemed to experience a **Moderate** significance of visual effect, representing the highest level of effect identified for any tourism, recreational or heritage receptor within the study area. It should be noted that this viewpoint is also representative of a scenic designation and, consequently, the receptor sensitivity at this location is slightly heightened.

The North Kilkenny Cycle Route traverses the site and is represented by a number of viewpoints. VP20 was selected as it provides one of the clearest opportunities to experience views of both the Ballylehaun and Ballyring turbines and is deemed to experience a **Moderate** significance of visual effect. Meanwhile, VP29, also located along the North Kilkenny Cycle Route and just over 5 km from the nearest proposed turbine, is deemed to experience a **Moderate-slight** significance of visual effect.

Also within the Central Study Area, various village GAA club grounds are represented by VP11 (**Slight**), VP25 (**Slight**) and VP27 (**Moderate-slight**). Meanwhile, the round tower, graveyard and ruined abbey at Grangefertagh are represented by VP14, which is deemed to experience a **Slight** significance of visual effect.

Within the Wider Study Area, Ballyragget GAA Club (VP13) is deemed to experience a **Slight** significance of visual effect, representing the highest level of effect identified for a tourism, recreational or heritage receptor within the Wider Study Area, at just over 6 km from the nearest proposed turbine. The Harps GAA Club in Durrow (VP3), located almost 9 km from the nearest proposed turbine, and the renowned historic Heywood Gardens (VP2), approximately 15 km from the Proposed Gathabawn Windfarm, are both deemed to experience a **Slight-imperceptible** significance of visual effect. Lastly, at distances of more than 13 km from the site, both Kilcooley Abbey (VP32) and St Canice's Round Tower (VP31) are deemed to experience an **Imperceptible** significance of visual effect.

In summary, although the Proposed Gathabawn Windfarm will be visible from a number of tourism, recreational and heritage receptors, the degree of visual effect will vary depending on proximity, viewing context, intervening screening and the nature of the receptor. The highest effects are generally associated with recreational routes within or close to the Central Study Area, where the turbines will form more prominent features within available views. Nonetheless, on balance, the residual visual effects of the

Proposed Gathabawn Windfarm at tourism, recreational and heritage receptors within the study area are assessed as **Not Significant**.

EIAR 14.4.6.6 Visual Impacts generated by the Proposed Substation

With regard to visual effects generated by the proposed Parksgrove Substation, the clearest visibility of the proposed development will be afforded from the neighbouring N77 national secondary route, which passes directly east of the substation compound. However, it is important to note that existing boundary vegetation along the roadside and within neighbouring fields will reduce the extent of visibility of the substation and its perceived visual presence. Indeed, the majority of the proposed substation infrastructure, including the proposed control buildings, will not rise more than 9 m above existing ground level and will, therefore, be partially and, in some instances, fully screened by surrounding vegetation.

Furthermore, where visible, the proposed substation will not appear as an incongruous form of built development, with numerous anthropogenic built forms already characterising the local landscape context. These include the existing Tirlán Ballyragget facility, the neighbouring Wastewater Treatment Plant and the existing Ballyragget Substation, located on the opposite side of the River Nore. Overall, the magnitude of visual effect generated by the proposed substation is deemed to be no greater than Medium-low within its immediate surroundings, reducing with increasing distance.

When combined with the Medium and Medium-low visual receptor sensitivities of receptors within the immediate surroundings of the substation site, the residual significance of visual effect generated by the proposed substation is deemed to be no greater than **Moderate-slight** and **Negative** in terms of quality.

As a result, the visual effects generated by the proposed substation are deemed to be **Not Significant** in EIA terms.

See **LVIA Photomontages Books 1 to 3**.

EIAR 14.4.6.7 Summary of Operational Phase Visual Effects

As outlined in Sections EIAR 14.4.6.1- EIAR 14.4.6.5 above, the Proposed Gathabawn Windfarm will generate some higher-ranging visual effects within its immediate surroundings, principally in relation to local community receptors, centres of population and some localised scenic designations. With regard to local community receptors, the nearest receptors to both turbine arrays have the potential to experience residual visual effects classified as Substantial-moderate, representing the highest level of visual effect identified within the assessment, albeit remaining below the Significant threshold. Such higher-ranging effects are principally confined to the nearest visual receptors, where the scale and proximity of the proposed turbines will result in a greater degree of visual change. Whilst the proposed turbines will generate a marked degree of visual change from some locations, they do not strongly conflict with the robust, working landscape characteristics of the Central Study Area. Indeed, the immediate landscape already accommodates existing wind energy development, which represents an established component of the visual context and reinforces the capacity of this landscape to accommodate further wind energy development without fundamentally altering its underlying character.

With regard to scenic designations, the Proposed Gathabawn Windfarm will be clearly visible from some nearby scenic views and routes, most notably from the designated scenic route in County Kilkenny to the south of the site. From this viewing context, the proposed turbines, principally those within the Ballylehaun array, will be viewed in a relatively clear and comprehensible manner. Although the turbines will represent a notable degree of visual change, they will principally be viewed in the context of the underlying working landscape and will not obstruct or block the more sensitive aspects of the designated views. Furthermore, the turbines represent a visually permeable form of development, allowing the underlying landscape and

broader visual context to remain appreciable between and beyond the turbine structures. Whilst there will inevitably be some detracting from the existing scenic amenity, the fundamental characteristics and visual qualities that contribute to the value of these scenic views will remain readily appreciable. This is further reinforced by the presence of existing wind energy development within the surrounding landscape, such that wind turbines are already an established component of the wider visual context.

Overall, the Proposed Gathabawn Windfarm will represent a marked degree of visual change and will considerably increase the scale and intensity of wind energy development from some localised locations within the study area. However, the higher-ranging visual effects are geographically contained and principally associated with the nearest and most openly exposed receptors, rather than being representative of the visual effects experienced throughout the study area as a whole. The degree of visual influence will vary considerably as a consequence of intervening landform, vegetation, forestry, built development and viewing orientation, with extensive areas experiencing substantially lower levels of visual effect or no visibility of the Proposed Gathabawn Windfarm. Furthermore, where the turbines are most prominent, they will generally be viewed within a robust, productive landscape in which wind energy development is already established, and the Proposed Gathabawn Windfarm will not fundamentally alter the underlying visual character or appreciation of the wider landscape. On balance, and having regard to the magnitude, geographical extent and distribution of the identified effects, residual visual effects at surrounding receptors within both the Central and Wider Study Areas are classified as **Not Significant**.

EIAR 14.5 CUMULATIVE EFFECTS WITH OTHER PROJECTS

Other existing and permitted projects, and projects advanced in the planning system were examined for their potential to cumulatively affect Population with the Whole Gathabawn Windfarm Project. These projects are referred to as 'Other Projects' herein. The potential for off-site and secondary consequential development is also considered. Please refer to Section EIAR **Error! Reference source not found.** for the assessment methodology for cumulative effects.

EIAR 14.5.1 Cumulative Impact in relation to DoEHLG guidelines

As set out in Section EIAR 14.2.2.1, the DoEHLG guidelines provide direction on wind farm siting and design criteria for a number of different landscape types. This proposal site is deemed to be contained within a landscape context that is most consistent with the 'Hilly and Flat Farmland' landscape type and the associated guidance is applicable, with respect to cumulative effect in this landscape type:

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

General guidance in relation to cumulative effects is provided in Chapter 6 of the Guidelines - 'Aesthetic Considerations in Siting and Design'. The most relevant aspect of guidance in this instance is contained in the fourth bullet point, which states:

"It is preferable to avoid locating turbines where they can be seen one behind another, when viewed from highly sensitive key viewpoints (for example, viewing points along walking or scenic routes, or from designated views and prospects), as this results in visual stacking and, thus, confusion. This may not be critical, however, where the wind energy development to the rear is in the distant background."

Given the broad, low hilltop layout of the Proposed Gathabawn Windfarm, comprising two distinct turbine arrays, and the presence of the existing four-turbine Lisdowney Wind Farm on the same hill range between the two proposed arrays, the Proposed Gathabawn Windfarm will frequently be viewed in combination with

the existing Lisdowney turbines. This relationship is clearly demonstrated in the visual impact appraisal and accompanying photomontage booklet. Notwithstanding this, the photomontages do not indicate that the combined developments will result in a strong sense of visual dominance over the surrounding landscape or underlying landform. Rather, where viewed together, the existing and proposed turbines generally remain visually legible, with the Proposed Gathabawn Windfarm typically presenting as two distinct turbine arrays within the broader hill range.

Other existing, consented or in-planning wind energy developments within the study area also have the potential to be viewed in combination with the Proposed Gathabawn Windfarm. However, due principally to the separation distances involved, these developments will generally present as more distant background features in views where the Proposed Gathabawn Windfarm is more prominent. Conversely, where these other wind energy developments form more prominent components of the view, the proposed turbines will generally present as more distant background features. Consequently, there is limited potential for the Proposed Gathabawn Windfarm to give rise to a strong sense of cumulative visual clutter, turbine proliferation or undue competition between multiple wind energy developments within the same viewing context.

For these reasons, and having regard to the spatial relationship, separation and visual legibility of the Proposed Gathabawn Windfarm relative to other wind energy developments within the study area, it is considered that the siting and design of the Proposed Gathabawn Windfarm are consistent with the principles of the Wind Energy Development Guidelines in respect of cumulative landscape and visual effects.

EIAR 14.5.2 Cumulative Study Area

A Cumulative Study Area is set out below and Other Projects located within this Study Area were identified and examined for potential for cumulative effects.

- Other wind farm projects within 20km of the Proposed Gathabawn Windfarm turbines.
- Other large construction projects within 1km of the Whole Gathabawn Windfarm Project works.

The Other Projects which occur within the Cumulative Study Areas were subject to a cumulative scoping exercise, see Chapter 5 Description of the Development [Appendix 5.4](#). As a result of this scoping exercise, some of these Other Projects were scoped IN for evaluation of cumulative effects, and these projects are listed below.

EIAR 14.5.3 Evaluation of Cumulative Impacts with Other Projects

EIAR 14.5.3.1 Construction & Decommissioning Phase Cumulative Effects

Other Projects Scoped In: Ballynalacken Windfarm Project, Seskin Wind Farm Project, Killeshulán Wind Farm Project (large construction projects, potential for overlapping construction periods).

In terms of cumulative construction and decommissioning stage effects, it is unlikely that the construction or decommissioning of two wind farm developments within the study area will occur in tandem as the Proposed Gathabawn Windfarm timelines and operational lifespan does not directly align with any other projects within the study area. However, should the construction or decommissioning of the Proposed Gathabawn Windfarm and another consented development occur at the same time, there is the potential for an increase in the intensity of construction/decommissioning activity within the study area. This includes the movement of HGVs along the surrounding road networks, storage of working vehicles and machinery, and the erection of tower cranes to construct/remove the turbine components. However, as the majority of consented and existing developments are well offset from the Proposed Gathabawn Windfarm, it is not considered that

these will generate any notable cumulative effects in the immediate surroundings of the Proposed Gathabawn Windfarm. Nonetheless, the potential future scenario includes for Killoshullan Wind Farm Project located just over 2.5 km south of the site. Should any construction stage works between the Proposed Gathabawn Windfarm and the Killoshullan project occur in tandem, there is likely to be a notable increase in construction stage effects within the central study area.

Overall, with regard to cumulative construction or decommissioning effects with other wind farm developments within the study area, effects are assessed as **Not Significant**.

ElAR 14.5.3.2 Operational Phase Cumulative Effects

There are ten existing/operational wind farms, one consented and four in-planning wind farms contained within the study area. There is also one wind farm at the pre-planning stage located in the wider southern extent of the study area. These are set out in below in Table 14-4.

Table 0-4 - Cumulative Wind Farms within the study area

Wind Farm Name	Number of turbines	Distance to nearest proposed turbine	Status
Lisdowney Wind Farm	4 WTGs	1.25 km	Existing
Seskin Wind Farm	9 WTGs	4.8km	In planning (Under appeal, ACP)
Lisheen III Wind Farm	8 WTGs	8.8 km	Existing
Bruckana Wind Farm	14 WTGs	10.5 km	Existing
Ballynalacken Wind Farm	11 WTGs	10.5 km	Consented
Lisheen I+II Wind Farm	30 WTGs	12.3 km	Existing
Ballybeagh Wind Farm	6 WTGs	12.8 km	Existing
Briskalagh Wind Farm	7 WTGs	13.5 km	Consented
Kyleballyougher Wind Farm	2 WTGs	13.8 km	Existing
Cnoc Wind Farm	5 WTGs	14.2 km	Existing
Foyleatalure Wind Farm	5 WTGs	14.2 km	Existing
Pinewoods Wind Farm	11 WTGs	15.9 km	Under construction
Littleton Wind Farm	11 WTGs	16.5 km	In-planning
Farranrory Wind Farm	9 WTGs	17.6 km	Under construction
Pre-planning wind farms			
Longford Pass Wind Farm	TBC	15.4 km	Pre-planning
Fassa Wind Farm	7 WTGs	13.1 km	Pre-Planning
Killoshullan Wind Farm	8 WTGs	2.5 km	Pre-Planning

The appraisal of cumulative effects with other wind energy developments is based on the cumulative ZTV maps in the **LVA Photomontages Books 1 to 3**, that accompanies this planning application.

A further discussion on potential operational stage cumulative effects is included in the subsequent section. It should be noted that cumulative effects are separated in to (i) current cumulative scenario and (ii) the potential future cumulative scenario. The current cumulative scenario assesses all existing and consented development within the study area, with the potential future cumulative scenario assessing existing, consented, in-planning and pre-planning wind farm development within the study area

Although the photomontages and Cumulative ZTV map in Appendix 14.3 relates principally to cumulative visual effects (i.e. utilising the selected VP set), it also informs the closely related assessment of cumulative landscape effects, particularly those relating to cumulative effects on the overall landscape character of the study area. The assessment below, therefore, relates to both cumulative visual effects and cumulative landscape effects.

EIAR 14.5.3.2.1 Current Cumulative Scenario

In this instance, the study area comprises ten operational wind farm developments and one consented wind farm development, all of which are indicated on the cumulative ZTV map below (Figure 0-18 refers). These tend to be located within the wider study area, with the only wind farm development within the central study area being Lisdowney Wind Farm consisting of four turbines and located 1.25km north to the proposed Ballyring turbines array. All other wind farm developments are contained within the wider study area, with the predominance of these developments located within the wider southern and western half of the study area.

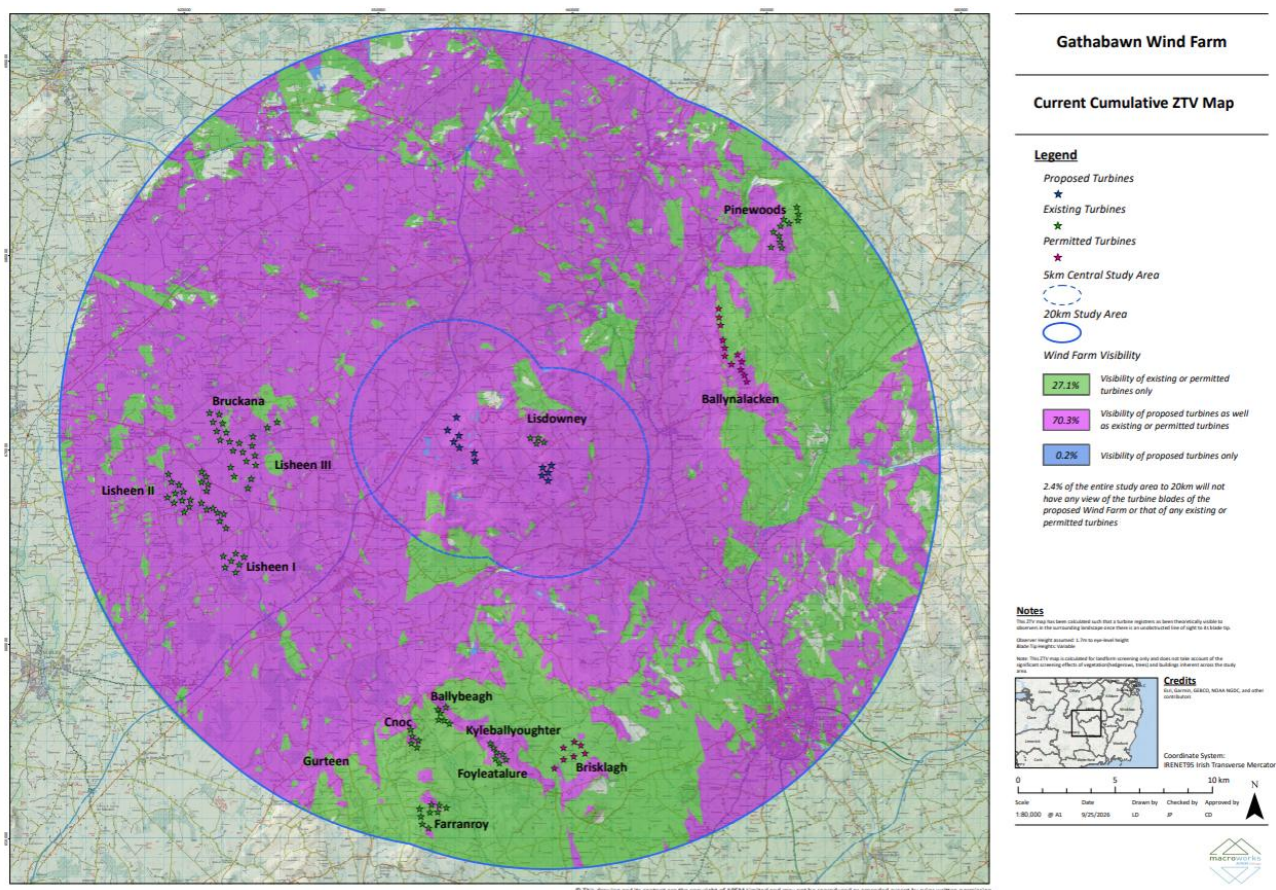


Figure 0-18- Current Cumulative Scenario ZTV Map (Tip Height) for Gathabawn Wind Farm, identifying the potential intervisibility of the proposed Wind Farm and all other existing and permitted wind farms within the study area.

The current cumulative scenario ZTV map (refer to Figure 0-18 above, full size in Appendix 14.3) illustrates the theoretical potential for cumulative visibility between the proposed turbines and all other existing and consented wind energy developments within the 20 km study area. As the ZTV is based on a bare-ground scenario, it does not account for the screening effects of vegetation, forestry or built development and is therefore likely to overestimate the actual extent of cumulative visibility. The established presence of wind energy development within the study area is reflected in the ZTV mapping, which indicates that the Proposed Gathabawn Windfarm has the theoretical potential to be viewed in isolation across only 0.2% of the entire 20 km study area. The key cumulative consideration relates to the close proximity of the existing four-turbine

Lisdowney Wind Farm, which will frequently be viewed in combination with the proposed turbines, particularly the Ballyring turbine array, which is located just over 1 km from the existing turbines. Overall, areas with the theoretical potential for views of the Proposed Gathabawn Windfarm in isolation are relatively limited and scattered throughout the Central and Wider Study Areas, with no clear spatial pattern to their distribution.

With regard to combined visibility, the cumulative ZTV indicates that approximately 70.3% of the Central and Wider Study Areas have the theoretical potential to afford views of the Proposed Gathabawn Windfarm in combination with one or more existing or consented wind energy developments. It is important to emphasise that this represents theoretical bare-ground intervisibility and should not be interpreted as the actual extent from which simultaneous cumulative views will be experienced. The combined ZTV pattern extends across much of the study area, with the lower-lying landscape to the west comprising the highest proportion of this combined visibility pattern (shown in purple). Within the wider eastern and southern extents of the study area, the combined ZTV pattern becomes considerably more sporadic due to the rolling nature of the terrain, particularly in the vicinity of the Castlecomer Plateau and the locally elevated lands along the southern periphery of the study area.

Whilst the cumulative ZTV therefore indicates an extensive theoretical pattern of combined visibility, this is principally attributable to the four existing Lisdowney turbines. Aside from Lisdowney Wind Farm, the nearest other existing wind turbines are located more than 8 km from the Proposed Gathabawn Windfarm, with the majority of other cumulative wind energy developments situated within the wider extents of the study area. At such separation distances, the potential for these developments to interact visually with the Proposed Gathabawn Windfarm in a manner that would generate notable cumulative aesthetic effects is considerably reduced. Where combined visibility does occur, either the Proposed Gathabawn Windfarm or the other wind energy developments will generally present as more distant components of the view, thereby limiting the potential for undue visual competition, scale conflict or cumulative clutter.

With more specific regard to Lisdowney Wind Farm, which represents the principal cumulative relationship and will most frequently be viewed in combination with the Proposed Gathabawn Windfarm, the visual assessment above and that contained within Appendix 14.1 take full account of the potential combined visibility of the existing and proposed turbines. There are some localised instances where the existing and proposed turbines present a degree of visual tension or scale contrast. This is principally due to the considerably larger scale of the proposed turbines relative to the existing Lisdowney turbines. However, these effects are geographically limited and are not representative of the relationship between the developments throughout the study area. In the majority of instances, the existing and proposed turbines remain visually legible as distinct developments, with the proposed turbines frequently viewed marginally downslope of the existing Lisdowney turbines. This relationship assists in moderating the apparent scale differential and limits the potential for undue scale conflict. The Proposed Gathabawn Windfarm will undoubtedly result in a clear increase in the scale and intensity of wind energy development within the Central Study Area; however, the combined developments do not give rise to a strong sense of turbine proliferation or visual clutter, nor do they collectively dominate the underlying landscape and landform.

With regard to sequential visual effects, the principal receptors comprise notable linear routes such as motorways, waymarked walking trails, cycling routes and scenic route designations. The principal sequential effects associated with the Proposed Gathabawn Windfarm relate to views from the designated scenic route to the south of the site and the North Kilkenny Cycle Route. These receptors are fully considered within the visual impact appraisal, where the presence of existing wind energy development and its potential interaction with the Proposed Gathabawn Windfarm form an inherent part of the assessment. The proposed

turbines will markedly increase the scale and intensity of wind energy development experienced along some sections of these routes, although this will be most apparent within the immediate and near surrounds of the site. The degree of cumulative visibility will also vary considerably as receptors move through the landscape due to changes in orientation, landform and the screening effects of roadside vegetation, forestry and built development. Consequently, cumulative effects will not be experienced continuously or at a uniform level along these routes.

With regard to the M8 motorway corridor, there is some potential for sequential views of the Proposed Gathabawn Windfarm in combination with other existing and consented wind energy developments. This is most notable within the southern extent of the study area, where larger clusters of turbines have the potential to be visible to both the east and west of the motorway corridor. However, these developments are located at considerable separation distances from the motorway and from one another, whilst substantial sections of the route are also contained by roadside vegetation, cuttings and embankments. Consequently, opportunities to experience clear and sustained cumulative views are relatively limited, and the various developments will generally remain spatially distinct within the wider landscape.

Overall, the Proposed Gathabawn Windfarm will result in a **Medium** magnitude of cumulative landscape change within the Central Study Area, principally arising from its relationship with the immediately adjacent Lisdowney Wind Farm and the consequent increase in the scale and intensity of wind energy development across this hill range. Cumulative visual effects will be greatest at localised receptors where the existing and proposed turbines are experienced simultaneously and at relatively close proximity. Whilst some localised scale contrast and visual tension will occur, the developments generally remain visually legible and do not combine to create a strong sense of turbine proliferation, visual clutter or dominance over the underlying landscape.

Beyond the Central Study Area, the considerable separation from other wind energy developments, generally in excess of 8 km, substantially reduces their potential to interact with the Proposed Gathabawn Windfarm in a manner that would generate notable cumulative landscape or visual effects. Furthermore, the extensive combined visibility indicated by the cumulative ZTV represents a theoretical bare-ground scenario and should not be interpreted as the actual extent from which simultaneous cumulative views will occur. Having regard to the established wind energy context of the receiving landscape, the geographical concentration of the higher cumulative effects, the separation from other wind energy developments and the generally clear and comprehensible relationship between the proposed and existing turbines, cumulative landscape and visual effects are assessed as **Not Significant**.

EIAR 14.5.3.2.2 Potential Future Cumulative Scenario

With regard to the potential future cumulative scenario, this considers all existing, consented, in-planning and pre-planning wind energy developments within the study area. Under this scenario, the study area has the potential to comprise ten existing operational/under construction wind farms, two consented wind farms, two in-planning developments and three wind farm developments (including the proposed Gathabawn Windfarm Project) at the pre-planning stage (refer to Figure 0-19, below). The principal additions relative to the current cumulative scenario comprise two developments located within the central study area (one in planning and one at pre-planning stage) and two developments in the wider southern periphery of the study area (one in planning and one at pre-planning stage). With regard to the Longford Pass development, which is at pre-planning stage, limited public information is available about this project, and thus, it has been represented by an indicative turbine location on lands identified as its site.

Despite the potential addition of these two in-planning developments and two pre-planning developments, the cumulative ZTV pattern does not change markedly in terms of the potential for additional intervisibility. Indeed, the proportion of the study area with the theoretical potential for isolated views of the Proposed Gathabawn Windfarm reduces by only 0.1%, whilst the area with the theoretical potential for combined visibility remains the same as the current cumulative scenario. The most notable change in the cumulative visibility pattern relates to areas with theoretical visibility of other wind energy developments but not the Proposed Gathabawn Windfarm. The ZTV category 'Visibility of existing, permitted, in-planning or pre-planning turbines only' increases from 27.1% in the current cumulative scenario to 27.5% in the potential future cumulative scenario. Overall, approximately 2.1% of the study area would theoretically remain screened from all wind energy development under the potential future cumulative scenario, compared with approximately 2.4% under the current cumulative scenario. As with the current cumulative assessment, these figures represent theoretical bare-ground visibility and should not be interpreted as the actual extent of cumulative visibility, as they do not account for the additional screening provided by vegetation, forestry or built development. Furthermore, the ZTV does not account for the scale, presence or intensity of cumulative turbine visibility, which is instead informed by the cumulative wireframes and professional judgement.

The relatively limited change in the cumulative ZTV pattern is notable given that the potential future scenario could result in the addition of more than 31+ turbines should all in-planning and pre-planning developments be realised. The principal cumulative effects within the potential future scenario have the potential to be generated by those developments nearest to the proposed Gathabawn Wind Farm Project. In this regard, Killoshullan Wind Farm and Seskin Wind Farm are of most relevance, with both located within, or on the periphery of, the central study area.

Killoshullan is the nearer of the two, located approximately 2.5 km south of the nearest proposed Gathabawn turbine. Despite the relatively close proximity of the two wind farm projects, they are located on relatively distinct areas of rolling terrain, with a broad, low-lying valley separating the two. There will be some clear instances of combined visibility of the two developments; however, these most often occur from locally elevated lands, whilst the more settled, lower-lying areas between these rolling hills benefit from a notable degree of screening provided by the surrounding terrain and intervening vegetation. Similarly, the proposed Seskin turbines are located on locally elevated land just under 5 km from the nearest proposed Gathabawn turbines. These separation distances ensure that the wind farms will generally be perceived as distinctly separate developments. Where combined visibility of the proposed Gathabawn and Seskin turbines occurs within the central study area, the Seskin turbines will clearly present as more modest-scale elements in the distance, or vice versa. Notwithstanding this, the combination of the proposed Killoshullan and Seskin turbines with the proposed Gathabawn Windfarm Project would result in a marked increase in the intensity of wind energy development within the study area. Indeed, should all developments be realised, this would result in an increase of 31 turbines. Whilst this marked increase would contribute to wind energy development becoming one of the more prominent land uses within the surrounding landscape, the rolling nature of the study area, which comprises several distinct hills and ridges, has some capacity to accommodate this increase. In particular, the perceived scale and intensity of the four combined developments within the central study area and its periphery would be noticeably diminished by the rolling nature of the surrounding terrain, which assists in limiting the potential for clear combined visibility of all four developments from any one location.

Other potential future wind energy developments (Littleton Wind Farm and Longford Pass Wind Farm) will generally be experienced at considerably greater separation distances and, where visible in combination with the Proposed Gathabawn Windfarm, are more likely to present as distant background components of the

wider landscape. Conversely, from locations where these other developments are more prominent, the Proposed Gathabawn Windfarm will generally present as a more distant component of the view. This spatial separation substantially limits the potential for the developments to combine in a manner that would generate undue visual competition, scale conflict, turbine proliferation or cumulative visual clutter.

On balance, the potential future cumulative scenario has the potential to result in a notable increase in the scale and intensity of wind farm development within the central study area. Nevertheless, whilst the potential addition of 31 turbines represents a notable increase, the rolling nature of this landscape context has the potential to diminish the perceived intensification of wind farm development. The increased scale and presence of wind energy development will be most notable from the more elevated parts of the central study area, which generally have lower population densities. Overall, the proposed turbines, in combination with other potential future developments, would have the potential to generate a modest sense of wind farm proliferation. On this basis, the magnitude of cumulative effect is deemed **High-medium**. Nonetheless, whilst the increase in the scale and intensity of wind farm development would be notable, it is considered that there is some capacity within this landscape context to accommodate this increase. This is reflected in the wider study area, where similar clusters comprising comparable, and in some instances greater, numbers of turbines are already present. Thus, cumulative landscape and visual effects under the potential future cumulative scenario are classified as **Not Significant**.

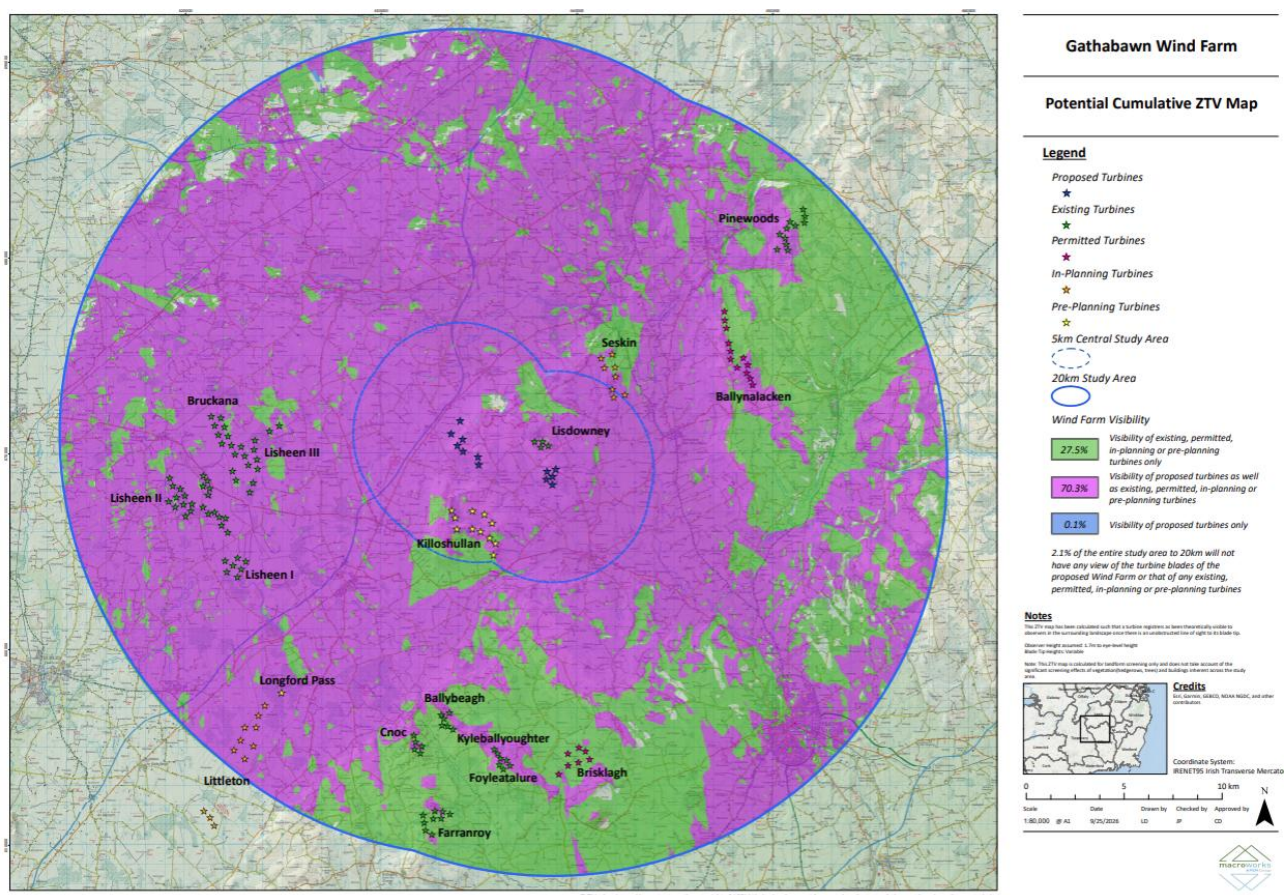


Figure 0-19 – Potential Future Cumulative Scenario ZTV Map (Tip Height) for Gathabawn Wind Farm, identifying the potential intervisibility of the proposed Wind Farm and all other existing, permitted, in-planning and pre-planning wind farms within the study area.

Note: Figure 14-18 full size in Appendix 14.3

ElAR 14.6 Conclusion

This Landscape and Visual Impact Assessment has separately considered landscape effects, visual effects and cumulative landscape and visual effects in the context of relevant planning policy and a comprehensive baseline assessment of the 20 km radius study area. The assessment has been undertaken with reference to the most relevant best-practice guidance for the landscape and visual assessment of onshore wind energy development in Ireland and is supported by a comprehensive suite of representative viewpoints, photomontages and visibility analysis.

The assessment identifies that the proposed Gathabawn Wind Farm will result in a clear and noticeable degree of landscape and visual change, particularly within the Central Study Area and at some of the nearest local community receptors. The highest-ranging visual effects are geographically localised and principally relate to receptors in close proximity to the proposed Ballylehaun and Ballyring turbine arrays, where the turbines will inevitably form prominent new features within available views. Notwithstanding this, the Proposed Gathabawn Windfarm is situated within a broad-scale, robust and productive rural landscape characterised by intensive agricultural land uses, commercial forestry and an established wind energy presence. Consequently, whilst the Proposed Gathabawn Windfarm will increase the scale and intensity of wind energy development within the immediate landscape, it will not fundamentally alter its underlying landscape character.

Visual effects will also vary considerably throughout the study area as a consequence of the rolling landform and the screening provided by mature vegetation, forestry and built development. Extensive areas have no potential for visibility, whilst elsewhere views will frequently be partial, filtered or intermittent. The higher-ranging effects identified at the nearest and most openly exposed receptors are therefore not representative of the visual effects experienced throughout the study area as a whole. Beyond the Central Study Area, the influence of the Proposed Gathabawn Windfarm reduces notably with increasing distance and the broader landscape context within which the turbines are experienced.

In terms of local community receptors, some of the nearest receptors to the Proposed Gathabawn Windfarm will experience higher-ranging visual effects as a consequence of their proximity to the proposed turbines. Nevertheless, the proposed turbine layout has been designed to fully comply with the visual amenity setback requirements set out in the Draft Wind Energy Development Guidelines (WEDGs). Furthermore, where visible, the overall scale and intensity of the Proposed Gathabawn Windfarm within the immediate study area are noticeably moderated by its dispersed layout, which comprises two distinct turbine arrays at Ballylehaun and Ballyring. The rolling nature of the intervening landform, combined with mature vegetation and other intervening landscape features, also substantially limits opportunities to experience clear and prominent views of both turbine arrays simultaneously. Consequently, whilst individual turbines or one of the two arrays may present as prominent features from some of the nearest receptors, there are relatively limited opportunities within the immediate surrounds of the site where the Proposed Gathabawn Windfarm will be experienced in its entirety as a single, expansive wind energy development. On balance, whilst acknowledging the higher-ranging effects identified at some of the nearest and most openly exposed receptors, these effects are geographically localised and the overall visual effects at local community receptors are classified as **Not Significant**.

The assessment has also considered effects on scenic designations, settlements, major transport routes, recreational and tourism receptors and heritage locations. Whilst the Proposed Gathabawn Windfarm will be clearly visible from some of these receptors, including nearby scenic routes and recreational routes, the

turbines generally present in a clear and comprehensible manner and do not obstruct or fundamentally diminish the principal landscape features or scenic qualities that contribute to the value of these views. Overall, residual visual effects across these receptor groups are assessed as **Not Significant**.

Cumulative effects have been considered in detail, with the principal cumulative relationship arising in combination with the existing four-turbine Lisdowney Wind Farm, located on the same broad hill range between the two proposed turbine arrays. The Proposed Gathabawn Windfarm will result in a clear increase in the scale and intensity of wind energy development within this local landscape and some localised scale contrast and visual tension will occur. However, the existing and proposed turbines generally remain visually legible, without giving rise to an undue sense of turbine proliferation, visual clutter or dominance over the underlying landscape and landform. Other existing, consented and potential future wind energy developments are generally located at considerably greater separation distances and within distinct landscape and visual contexts. Consequently, their contribution to cumulative effects associated with the Proposed Gathabawn Windfarm is more limited. Cumulative landscape and visual effects, including under the potential future cumulative scenario, are therefore assessed as **Not Significant**.

Overall, the proposed Gathabawn Wind Farm will result in a marked but geographically contained degree of landscape and visual change, principally within its immediate and near surrounds. The assessment demonstrates that these higher-ranging effects are localised and occur within a robust working landscape in which wind energy development is already an established component. Effects reduce with increasing distance and changing landscape context, whilst the Proposed Gathabawn Windfarm does not fundamentally alter the underlying character of the receiving landscape or materially diminish the key scenic and visual qualities of the wider study area. On balance, and having regard to the nature, magnitude, geographical extent and distribution of the identified effects, the proposed Gathabawn Wind Farm will not give rise to any Significant landscape, visual or cumulative landscape and visual effects.

EIAR 14.7 Glossary, List of Abbreviations

Glossary of Terms

Term	Definition

List of Abbreviations

Abbreviation	Full Term
AH	Tourism, Amenity and Heritage Features
CDP	County Development Plan
CP	Centres of Population
DSR/SV	Designated Scenic Routes and Views
EIA	Environmental Impact Assessment
KV	Key Views
LCA	Landscape Character Area
LCT	Landscape Character Type
LCV	Local Community Views
LIA	Landscape Impact Assessment
LVIA	Landscape and Visual Impact Assessment
MR	Major Route
VIA	Visual Impact Assessment
VP	Viewpoint
ZTV	Zone of Theoretical Visibility

EIAR 14.8 Reference List

- Landscape Institute/IEEMA (2013). *Guidelines for Landscape and Visual Impact Assessment*, Third Edition (GLVIA3). London: Routledge.
- Department of Housing, Local Government and Heritage (2006). *Wind Energy Development Guidelines for Planning Authorities*. [online] Available at: <https://www.gov.ie/en/publication/7a318-wind-energy-development-guidelines-2006/>
- Department of Housing, Local Government and Heritage (2019). *Draft Revised Wind Energy Development Guidelines (December 2019)*. [online] Available at: https://www.housing.gov.ie/sites/default/files/publicconsultation/files/draft_revised_wind_energy_development_guidelines_december_2019.pdf
- Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Statements (2022); and 'Photography and Photomontage in Landscape and Visual Impact Assessment', Landscape Institute Technical Guidance Note 06/2019.

EIAR 14.9 List of Figures

FIGURES (All in the chapter above, none overleaf)

EIAR 14.10 List of Appendices

APPENDICES (overleaf)

Appendix 14.1	Methodology for the evaluation of The Landscape
Appendix 14.2	Visual Impact Assessment
Appendix 14.3	ZTV Figures

Figures

Appendix to Chapter 14: The Landscape

Appendix 17.1: Methodology for the evaluation of The Landscape

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A14.1 Methodology Applied during the Preparation of Chapter 14: Landscape

A14.1.1 Guidelines

The criteria used to describe the baseline environment and to evaluate effects uses methodology as prescribed in the following guidance documents:

- European Union (EU) Guidance on the preparation of the EIA Report (Directive 2011/92/EU as amended by 2014/52/EU) (2017);
- Environmental Protection Agency (EPA) publication Guidelines on the Information to be contained in Environmental Impact Assessment Reports (2022);
- Landscape Institute and the Institute of Environmental Management and Assessment (IEMA) publication entitled Guidelines for Landscape and Visual Impact Assessment – Third Addition (2013) (herein referred to as GLVIA3);
- NatureScot Guidance - Assessing the cumulative landscape and visual impact of onshore wind energy developments (2021) [online];¹
- Department of the Environment, Heritage and Local Government Wind Energy Development Guidelines (2006);
- Scottish Natural Heritage Visual Representation of Wind Farms: Best Practice Guidelines (version 2.2 - 2017).²

A14.1.2 Methodology in the Production of the LVIA

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

A14.1.2.1 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 National and Regional Policies and Designations, County Development Plans, particularly with regard to sensitive landscape and scenic view/route designations and associated policies and objectives.
- Selection of potential Viewpoints (VPs) from key visual receptors to be investigated during fieldwork for actual visibility and sensitivity;

¹ There is no current guidance document in Ireland relating to the assessment of cumulative landscape and visual effects for onshore wind energy development, and thus, it is standard practice to use the NatureScot guidance

² As above.

A14.1.2.2 Fieldwork

- Recording of a description of the landscape elements and characteristics within the Study Area.
- Selection of a refined set of VP's for assessment. This includes the capture of reference images and grid reference coordinates for each VP location for the visualisation specialist to prepare photomontages. See **EIAR Illustration Pack - LVIA Photomontages**.
-

A14.1.2.3 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 effects and the mitigation measures that could be employed to reduce such effects.
- Estimation of the significance of residual landscape effects.
- Estimation of the significance of residual visual effects aided by photomontages prepared at all of the selected VP locations. See **EIAR Illustration Pack - LVIA Photomontages** accompanying the EIAR.
- Estimation of cumulative landscape and visual effects in combination with other surrounding developments that are either existing, permitted or in the planning system and pending a decision from a planning authority. Projects that are at the pre-planning stage where information is available to the public are also be included in the cumulative impact assessment.

A14.1.3 Assessment Criteria for Landscape Impact

The classification system used by Macro Works to determine the significance of landscape and visual impacts is based on the Institute of Environmental Management and Assessment (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; and
- Significance of landscape effects

The sensitivity of the landscape to change is the degree to which a particular landscape receptor (Landscape Character Area (LCA) or feature) can accommodate changes or new features without unacceptable detrimental effects to its essential characteristics. Landscape Value and Sensitivity is classified using the following criteria outlined in Table Error! No text of specified style in document.-1 below;

Table Error! No text of specified style in document.-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 proposal site boundary that may have an effect on the landscape character of the area. Table Error! No text of specified style in document.-2 refers.

Table Error! No text of specified style in document.-2 – Magnitude of Impact

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 set out in Table Error! No text of specified style in document.-3.

Table Error! No text of specified style in document.-3 – Impact Significance Matrix

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

Note: The significance matrix provides an indicative framework from which the significance of impact is derived. The significance judgement is ultimately determined by the assessor using professional judgement. Due to nuances within the constituent sensitivity and magnitude judgements, this may be up to one category higher or lower than indicated by the matrix. **Judgements indicated in orange/yellow are considered to be 'Significant impacts' in EIA terms. All other effects are deemed Not Significant.**

A14.1.4 Assessment Criteria for Visual Impact

As with the landscape impact, the visual impact of the proposed wind farm 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.

A14.1.4.1 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;

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

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

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

Values Associated with the View

- **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;
- **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; and

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.

A14.1.4.2 Visual Impact Magnitude

The magnitude of visual effects is determined on the basis of two factors: the visual presence of the proposal and its effect on visual amenity.

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

For wind energy developments, a strong visual presence is not necessarily synonymous with adverse impact. Instead, the 2012 Fáilte Ireland survey entitled 'Visitor Attitudes On The Environment – Wind Farms' found that *"Compared with other types of development in the Irish landscape, wind farms elicited a positive response when compared to telecommunication masts and steel electricity pylons"....* and that *"most (tourists) felt that their presence did not detract from the quality of their sightseeing, with the largest proportion (45%) saying that the presence of the wind farm had a positive impact on their enjoyment of sightseeing..."*. A further study

by Fáilte Ireland titled ‘Report on Visitor Awareness and Perceptions of the Ireland Landscape’ (2018) found that in relation to views from prominent tourism sites in Ireland “*there is consistent evidence of the majority of visitors not reporting the visibility of large, visually prominent developments that were close and directly in their line of sight*”. Some examples of this were where no visitors reported the visibility of a windfarm or nearby industrial units at Cashel and no visitor noticed the offshore windfarm at Brittas Bay. The purpose here is not to suggest that turbines are either inherently liked or disliked, but rather to highlight that the assessment of visual impact magnitude for wind turbines is more complex than just the degree to which turbines occupy a view. Furthermore, a clear and comprehensive view of a wind farm might be preferable in many instances to a partial, cluttered view of turbine components that are not so noticeable within a view. On the basis of these reasons, the visual amenity aspect of assessing impact magnitude is qualitative and considers such factors as the spatial arrangement of turbines both within the scheme and in relation to surrounding terrain and land cover. It also examines whether the project contributes positively to the existing qualities of the vista or results in distracting visual effects and disharmony.

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

Table Error! No text of specified style in document.-4 – Magnitude of Visual Impact

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

A14.1.4.3 Significance of Visual Effect

As stated above, the significance of visual effects is a function of visual receptor sensitivity and visual impact magnitude. This relationship is expressed in the same significance matrix included for Landscape Effect Significance at Table Error! No text of specified style in document.-3.

A14.1.5 Quality and Duration of Effects

In addition to assessing the significance of landscape effects and visual effects, the EPA EIAR Guidelines (2022) requires that the quality of the effects is also determined. This could be negative/adverse, neutral, or positive/beneficial. In the case of new energy / infrastructure developments within rural and semi-rural settings, the landscape and visual change brought about by an increased scale and intensity of built form is seldom considered to be positive / beneficial.

Landscape and Visual effects are also categorised according to their duration:

- Temporary – Lasting for one year or less;
- Short Term – Lasting one to seven years;
- Medium Term – Lasting seven to fifteen years;
- Long Term – Lasting fifteen years to sixty years;
- Permanent – Lasting over sixty years.

A14.1.6 Assessment Criteria for Cumulative Effects

The NatureScot Guidance relating to ‘Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments (2021)’ identify that cumulative effects on visual amenity consist of combined visibility and sequential effects. The same categories have also been subsequently adopted in the Landscape Institute’s (IEMA) 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 effects with other forms of notable development (existing, permitted or pending a decision from a planning authority), particularly within the central study area.

Cumulative visual effects typically arise in two main ways. Combined visibility occurs when a proposed wind farm project is visible alongside, or in the context of, other existing, consented or proposed wind energy developments, either simultaneously within a single view or in successive views across the landscape. Sequential effects arise where turbines are experienced along prominent linear receptors, such as roads, walking trails, or other movement corridors, where successive views of the turbines are encountered over a distance.

Cumulative effects of wind farms tend to be adverse as they relate to the addition of moving manmade structures into a landscape and viewing context that already contains such development, and thus, result in an intensification of development. Based on guidance contained within the NatureScot Guidelines relating to the Cumulative Effects of Wind Farms (2012) and the DoEHLG Wind Energy Guidelines (2006/2019 Draft), cumulative effects can be experienced in a variety of ways. In terms of landscape character, additional wind energy developments might contribute to an increasing sense of proliferation. A new wind farm might also contribute to a sense of being surrounded by turbines with little relief from the view of them.

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

Table Error! No text of specified style in document.-5 below provides criteria for assessing the magnitude of cumulative effects.

Table Error! No text of specified style in document.-5 – Magnitude of Cumulative Effect Criteria

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

A14.1.7 Assessing Significance

Assessing significance is central to the EIA process and features in all extant legislation in the UK and Europe. Significance can be assessed as a function of both the sensitivity of a receptor and the magnitude of an impact, an approach commonly used to guide significance assessments for other EIA topics. The matrix below is a tool to assist with judgement. Typically, effects assessed as ‘major’ or ‘moderate’ are significant in EIA terms.

Magnitude of Impact	Sensitivity of receptor			
	High	Medium	Low	Negligible
High	Major	Major/Moderate	Moderate/Minor	Minor/Negligible
Medium	Major/Moderate	Moderate	Minor	Minor/Negligible
Low	Moderate/Minor	Minor	Minor	Negligible
Negligible	Minor/Negligible	Minor/Negligible	Negligible	Negligible

There are not clear cut-off points between categories and terminologies, for example, the point at which an impact changes magnitude category is a professional judgement, supported by evidence and justification. The assessment of significance is both context and value dependent. The ISEP guidance sets out the principles that guide the assessment and the contextual factors to be considered.

A14.1.8 Sensitivity Criteria

The sensitivity assessment is informed by a policy review and baseline evidence. The sensitivity of the community or receptor can be indicated by the following factors:

- Its social, economic, or environmental value is recognised in relevant local, regional or national policy.
- Resilience and capacity to absorb change without fundamentally altering its characteristics. A lower capacity to absorb change would result in higher sensitivity. The presence of sensitive and protected characteristics in affected populations should also be considered.
- Its scarcity value, or the availability of alternative resources, where few alternatives available would indicate higher sensitivity.
- Community dependence on a resource, receptor or receiving environment.

Table Error! No text of specified style in document.-6 – Indicators of High Sensitivity

Indicator	Examples of High Sensitivity
Value	- A Sector of the economy deemed important in industrial strategy - A tourism asset highlighted in tourism strategy or promoted in tourism literature - A minority language that is protected or promoted in policy, such as Gaelic, Cornish or Welsh
Capacity	- An area with a limited labour or skills supply to meet workforce demands - A business that is based on the tranquillity or beauty of its environment - A population that includes vulnerable groups or those with sensitive characteristics with high sensitivity to differential effects
Scarcity	- A development site allocated for employment uses in a Local Plan where few alternatives exist - A footpath that provides the only pedestrian route between a residential area and a community facility - A regionally important tourism asset that attracts large number of visitors
Dependency	- Essential social infrastructure such as health, education and public services - Assets which sustain usual daily activities such as recreation or physical activity - A resource which local livelihoods rely upon, for example, agriculture, food, crofting

A14.1.9 Magnitude Criteria

The magnitude of an impact can be determined by the following factors:

- The size of the impact based on anticipated change versus the baseline
- The scale or extent of the impact – the geo-spatial area in which the impact would occur
- The duration of the impact – whether the impact would be short, medium or long term
- The frequency of the impact (if relevant) – how often the impact would occur
- The reversibility of the impact and whether the impact would be temporary or permanent.

Table Error! No text of specified style in document.-7 – Indicators of High Magnitude

Indicator	Examples of High Magnitude
Size	- The number of jobs expected to be created is a large proportion of the existing local labour supply - The project will create employment in sectors which will cause structural economic change in a place - The number of new residents is a large proportion of the baseline population
Scale	- The impact will be experienced across a large geographical area - The impact will affect a large number of receptors
Duration	- The construction period will last several years - The lifetime of the project/asset is 40 years or more
Frequency	- Disruptive maintenance work during operation will occur monthly - Noise and vibration caused by drilling will occur 24 hours per day over seven days per week
Reversibility	- Access to the public right of way cannot be reinstated following construction - Permanent change in status of the land is a loss of agricultural land - New homes are permanent and greenbelt land is lost permanently

A14.1.10 Mitigation

Mitigation should be identified for all significant adverse effects. The ISEP mitigation hierarchy is a framework designed to guide Environmental Impact Assessments and management. It aims to integrate environmental and social considerations into project design and implementation to achieve positive outcomes and minimise negative impacts. The hierarchy is adapted for Social Impact Assessment and consists of four key steps:

1. Avoidance: The first and most preferred step is to avoid adverse impacts altogether. This involves altering the project design or location to prevent environmental harm.
2. Minimisation: if avoidance is not possible, the next step is to minimise the impacts. This can be achieved through measures that reduce the severity or extent of the impact.
3. Restoration: When impacts cannot be avoided or minimised, the next step is to restore the affected environment to its original state or as close to it as possible.
4. Compensation: If the impacts cannot be avoided, minimised, or restored, compensating for the residual impacts by compensating specific organisations/ people or by providing social investments for affected communities.

Appendix to Chapter 14: The Landscape

Appendix 17.2: Visual Impact Assessment

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A14.1 Visual Impact Assessment

A14.1.1 Appraisal of Visual Receptor Sensitivity

The study area encompasses a diverse range of landscape types and visual receptors, extending from extensive areas of robust and modified rural landscape within the Central and Wider Study Areas to areas of higher scenic value and more localised naturalistic character associated with elevated lands and river corridors. The study area also contains a variety of amenity and heritage receptors of differing value and sensitivity.

Scenic designations within the study area tend to be associated with elevated locations that afford broad views across the wider working landscape, although some designated views within the current Laois CDP focus on more specific landscape features and areas. The nearest scenic designation to the site is V14 in the Kilkenny CDP, which relates to a stretch of elevated local road to the south of the settlement of Gathabawn. Views from this route are generally afforded to the north across nearby rolling lands and, further in the distance, across the broad working landscape beyond. The scenic qualities of these views principally derive from their elevated position, openness and extensive visual reach. However, it should be noted that these are not views across a pristine or highly naturalistic landscape setting; rather, they encompass typical rural land uses and anthropogenic influences, including existing wind energy development. Nonetheless, the expansive nature of the views affords a high degree of scenic quality and, on balance, receptors associated with this designation are deemed to be of High-medium sensitivity.

Other scenic designations within County Kilkenny and the study area exhibit broadly similar qualities, with their scenic value principally derived from elevated positions and expansive views across the surrounding landscape. Scenic designations V12 and V19, for example, afford broad views across the River Nore valley and towards the surrounding elevated rolling hills. Whilst these views possess notable scenic qualities, they are similarly characterised by a range of productive land uses and existing built features that reinforce the working and modified character of the wider landscape. On balance, receptors associated with these scenic designations are also classified as being of High-medium sensitivity.

The current Laois CDP also includes several scenic designations within the Central and Wider Study Areas. Whilst many of the designated scenic views within the Wider Study Area are of limited relevance to the Proposed Development due to their orientation, several scenic designations within and immediately beyond the Central Study Area are relevant to the assessment. Scenic Views 004, 014 and 021 are all located within the Central Study Area, directly to the north/northwest of the site. Whilst Views 014 and 021 are oriented offset from the general direction of the Proposed Development, they nonetheless afford pleasant views across the surrounding landscape. View 004 is oriented more directly towards the Proposed Development and exhibits similar qualities to the scenic views identified within County Kilkenny, comprising elevated and expansive views across the wider working landscape. As with the Kilkenny scenic designations, these views possess notable scenic qualities but are experienced within a productive and modified rural landscape rather than a pristine or highly naturalistic setting. Indeed, the existing Lisdowney turbines are viewed in the direct orientation of this scenic designations. On balance, receptors associated with these scenic designations in County Laois are classified as being of High-medium sensitivity.

The study area also encompasses a range of amenity and heritage features throughout the Central and Wider Study Areas. The susceptibility of these receptors to visual change varies considerably, with some deriving a substantial proportion of their amenity value from views across the surrounding landscape, whilst others are already influenced by various forms of existing development. Heywood Demesne is a notable amenity and heritage feature located within the northern extent of the study area and also encompasses scenic

designations identified within the Laois CDP. Pleasant and expansive views are afforded across the wider surrounding landscape from parts of the demesne and, on balance, visual receptors at this location are classified as being of High-medium sensitivity.

A relatively high concentration of local heritage receptors is also distributed throughout the study area. Whilst these features may be sensitive in heritage terms, their susceptibility to visual change is generally more limited, particularly where their appreciation is principally related to the feature itself rather than views across the wider landscape. In this regard, local heritage receptors within the study area, such as churches, graveyards and similar features, are generally classified as being of Medium visual receptor sensitivity.

With regard to linear amenity features, such as on-road cycling routes, receptor sensitivity varies as these routes pass through different landscape contexts. The sections most susceptible to visual change tend to correspond with elevated and more open locations that afford expansive views across the wider landscape, whilst more enclosed sections have a lower susceptibility to change. Consequently, visual receptor sensitivity along these linear amenity routes generally ranges from Medium-low to High-medium

Views of the inland working agricultural landscape are generally pleasant in terms of its rolling pastoral aesthetic and 'green', settled working character. The network of hedgerows and vegetation that occur throughout it contributes to some sense of naturalness and, in combination with its undulating topography, generates a high degree of containment in many locations. However, whilst a pleasant pastoral aesthetic is noted throughout some parts of the study area, the wider landscape is also influenced by an array of anthropogenic features such urban settlements, commercial and industrial development, major route receptors and localised areas of existing wind farm development. Overall, the sensitivity of visual receptors within the more working landscape context, which relates to much of Central Study Area and wider study area, tends to range between Medium and Medium-low, with those of a Medium sensitivity representing more open expansive views across the wider landscape. It is also worth noting that some local amenity and heritage features also occur throughout the study area, which heightens the degree of receptor sensitivity at a local level.

Key differentials in terms of visual receptor sensitivity relate to the occupation of the visual receptor and whether views of the surrounding landscape are an inherent part of the experience. Static residential receptors are considered generally more susceptible to changes in views over those where views are experienced transiently by those travelling through the landscape, particularly on major transport routes where road infrastructure and traffic volume draw from visual amenity. Likewise, receptors located in closer proximity to the Proposed Development are considered more susceptible to changes in views over those where views are experienced at a distance.

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
VP1	L1596 overbridge of the M7 motorway This view is taken from the elevated overpass across the M7 Dublin–Limerick motorway corridor. Its elevated position affords the most distant views towards the site from this section of the motorway. It is important to note that these elevated views are confined to the overpass itself before the motorway descends to a substantially lower ground level on either side. As such, this viewpoint is primarily representative of motorists travelling along the motorway, rather than residents or recreational receptors within the surrounding landscape. Within this scene, a series of layered tree belts rises towards the horizon, largely obscuring the more distant landform and limiting longer-range views towards the site	Medium-low	At least 14 km away to the southeast, the faint outline of up to seven of the proposed turbine blade sets may be discernible in the distance, although they are highly unlikely to be readily noticed. In light of the much more immediate influence of the motorway corridor in the foreground, as well as the presence of larger wind farms considerably closer to this location (i.e. to the northwest, outside the study area, and less affected by atmospheric perspective), the Proposed Development, even if discerned, is unlikely to detract from the inherent visual amenity of this expansive scene. Furthermore, the proposed turbines will be well accommodated in a thematic sense, given the established presence of wind energy development within the wider visual context. Overall, the magnitude of visual impact is deemed to be Low-negligible.	Slight-imperceptible/ Negative/ Long-term
VP2	Heywood Gardens By way of context, the original eighteenth-century landscape at Heywood Gardens, near Ballinakill, comprises gardens, lakes, woodland and a number of notable architectural features. In the early twentieth century, the formal gardens were subsequently designed by the renowned architect Sir Edwin Lutyens. This viewpoint is located on an embankment above the formal gardens and affords mid-distance views across the parkland woodland, as well as more distant views to the south and southwest. This is a scenic setting, with much of its inherent visual amenity derived from the foreground and mid-ground views, whilst the distant low hills play a lesser role in the overall composition. Across these distant hills to the southwest, the faint outlines of numerous wind turbines	High-medium	Approximately 15 km to the southwest, the Proposed Development will be discernible in two clusters, albeit heavily screened by intervening vegetation in the depicted view. Numerous blade sets will be faintly visible, with up to 10 turbines potentially discernible. Whilst the proposed turbines are likely to be clearer and more perceptible than the aforementioned existing turbines within the scene, owing principally to their closer proximity, their overall visual presence is likely to remain minimal, even accounting for the movement of turbine blades along the distant skyline. Whilst the Proposed Development will be discernible within this broad and scenic vista, it is unlikely to have a palpable effect on its inherent visual amenity, which is principally derived from the more immediate foreground and mid-ground elements of Heywood Gardens and its parkland setting. Thus, the magnitude of visual impact is deemed to be Low-negligible.	Slight-imperceptible/ Negative/ Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
	can be discerned along the skyline, although these have a negligible influence on the visual amenity of the vista			
VP3	The Harp GAA club north of Durrow Whilst there are no known clear views from Durrow village in the direction of the site, The Harps GAA Club, on the northern outskirts of the village, affords some of the most accessible views towards the site from within the vicinity. The mid-ground of this scene comprises development associated with the large village, interspersed amongst intervening vegetation. To the southwest, the hillscape of the Central Study Area is apparent, whilst the roofline of the stately Castle Durrow (hotel) is visible further to the west.	Medium-low	The Proposed Development will take the form of up to six distant turbine blade sets extending above the intervening ridgeline, albeit heavily filtered by nearby mature vegetation. At a distance of almost 9 km, the turbines will have a limited visual presence and, where viewed against the sky, will generate a relatively low degree of visual contrast. If discerned, the turbines may generate a small degree of visual tension owing to their limited contextual relationship with the surrounding landscape, as only the blade sets, rather than the turbine towers and bases, will be visible above the intervening ridgeline. Nevertheless, even where visible, the Proposed Development will not markedly detract from the inherently anthropocentric visual amenity of this setting. Thus, the magnitude of visual impact is deemed to be Low-negligible.	Slight-imperceptible/ Negative/ Long-term
VP4	R433 at Rathdowney This location is within the school grounds on the eastern outskirts of Rathdowney and represents one of the least impeded views from the town in the direction of the site. Beyond the school's playing fields is a series of stacked treelines, beyond which no other landscape elements are visible. The mid-distance also contains tall lighting columns, utility poles, football posts and ball-stop netting.	Medium-low	Beyond the playing fields and above the intervening treelines, the Proposed Development, located more than 8 km away, will take the form of two partially visible turbine blade sets. Owing to the considerable viewing distance and limited extent of visibility, these are unlikely to be readily noticed. Nevertheless, the presence of rotating blade elements intermittently 'cutting' above the distant treeline has the potential to attract marginally greater attention. Even if noticed, however, the proposed turbines will represent minor and distant features and are unlikely to detract from the inherent visual amenity of this largely urban and contained setting. Thus, the magnitude of visual impact is deemed to be Low-negligible.	Slight-imperceptible/ Negative/ Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
VP5	L5591 overbridge of the M8 motorway This view is taken from an overpass across the busy M8 Cork–Dublin motorway corridor, approximately 5 km north of the site. The foreground is dominated by the substantial motorway corridor, along which outward views are frequently curtailed by roadside embankments and/or vegetation. Further south, the low hillscape of the Central Study Area has a relatively even profile and is cloaked in a combination of commercial forestry and pastoral farmland. Along the distant ridgeline to the southeast, the four existing Lisdowney turbines are faintly discernible to varying degrees, whilst a communications tower and mast are also visible to the southwest	Medium-low	From this elevated position above the motorway corridor, approximately 5 km from the nearest proposed turbine, all seven of the Ballylehaun turbines will be visible to varying degrees, ranging from fully revealed turbines to partial views of blade sets. In compositional terms, the turbines will form a somewhat disjointed array within the view. Nonetheless, the underlying landscape fabric of the site will remain relatively clear and legible from this location, reducing the potential for visual confusion or ambiguity. The Proposed Development will result in a noticeable increase in the scale and vertical extent of built development within the scene. However, this will occur within a productive and continually evolving rural landscape whose existing character and visual context are already influenced by wind energy development. Overall, the magnitude of visual impact is deemed to be Medium-low.	Moderate-slight/ Negative/ Long-term
VP6	R639 near Cullahill, Co. Laois As previously outlined in Section 14.3.4.4.1 of the LVIA, of the designated amenity views and prospects identified in the Laois County Development Plan, this is the only one considered to be of potential relevance to the Proposed Development. It is located northeast of the village of Cullahill along the R639 and affords views to the southeast. The view is dominated by the strong arterial character of the foreground setting, comprising the former national road and principal route between Cork and Dublin until relatively recently, together with associated utility poles and roadside vegetation. The outskirts of Cullahill are visible beyond. The hill range to the south straddles the Laois–Kilkenny border and forms a defining element of the	High-medium	Up to five of the Ballylehaun turbines will be visible or partially visible from this location, above and between intervening vegetation, with the nearest proposed turbine located approximately 3.5 km away. The proposed turbines, most notably those viewed against the lower slopes of the distant hillside, will form noticeable built features within the view, although they are considered to have a sub-dominant visual presence along this section of the regional road. Whilst the composition of the scheme is not particularly complementary from this location, the proposed turbines will be viewed beyond a former national road and within a largely peripheral portion of the vista that is not critical to its visual amenity, where forested slopes descend towards lowland farmland. The turbines will be perceived at a modest scale but will nonetheless contribute to an increased intensity and diversity of built form	Moderate-slight/ Negative/ Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
	Central Study Area. From this orientation, these low hills are predominantly cloaked in commercial forestry, with areas of pastoral farmland extending across the lower slopes.		within the view. Overall, the magnitude of visual impact is deemed to be Medium-low .	
VP7	N77 at Ballynaslee By way of context, this viewpoint is located along the busy N77 national road, approximately 3 km north of Ballyragget. Set within an intensively managed agricultural valley, the viewpoint takes advantage of a localised break in the roadside treeline at and near a field entrance. Elsewhere along this section of the N77, the dense roadside vegetation generally precludes views in the direction of the site. The view, which is experienced at an acute angle to the direction of travel for road users, comprises gently sloping pastoral fields that rise towards a low skyline defined by field boundaries, hedgerows and mature trees.	Medium-low	Above the treeline defining the skyline, up to five proposed turbine blade sets will be visible rotating above the intervening vegetation, albeit at a distance of almost 6 km or more. Whilst potentially discernible, the proposed turbines are highly unlikely to be readily noticed by road users, and there are few residential receptors in the immediate vicinity of this location. The particular viewing context further limits the potential for visual effects, with the turbines appearing at an acute angle to the direction of travel along this busy national road, where mature roadside vegetation generally precludes views towards the site. Consequently, even where the turbine blade sets are discerned, they will have little discernible influence on the visual amenity of the scene. Overall, the magnitude of visual impact is deemed to be Low-negligible.	Slight-imperceptible/ Negative/ Long-term
VP8	R694 regional road at Finnan By way of context, this viewpoint is located along Kilkenny protected view V12, which is designated for “<i>Views overlooking Castlecomer and Ballyragget on the Castlecomer/Ballyragget Road.</i>” At this location, expansive views are afforded across a productive agricultural valley, with the more distant hills of the Central Study Area forming the backdrop. Whilst this is a broadly picturesque setting, it is also highly utilitarian and productive in character, forming part of an intensively managed agricultural landscape. Along the distant ridgeline, the four	High-medium	Located more than 8.9 km away, the Proposed Development will principally present as the five Ballyring turbines, which will form a cluster downslope of the existing Lisdowney turbines. The blade tips of some of the remaining proposed turbines may also be discernible along the distant ridgeline. The five Ballyring turbines will be broadly aligned with the direction of travel for road users at this location, with much of their blade sets rotating free of the intervening skyline. The proposed substation compound also has the potential to be briefly viewed here in the lower parts of the valley, however from this distance, it is likely to go unnoticed by the casual observer.	Slight/ Negative/ Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
	existing Lisdowney wind turbines are clearly visible and, being broadly aligned with the direction of travel for road users at this location, are likely to form a noticeable component of the existing view.		The Proposed Development will result in a clear and relatively coherent extension of wind energy development across this hillscape. The larger proposed turbines will be positioned downslope of the smaller existing Lisdowney turbines, thereby reducing the potential for scale confusion between the two developments. Whilst there will be some instances of turbine blade overlap, the overall composition is unlikely to generate a notable degree of visual clutter. Nonetheless, the Proposed Development will result in a perceptible increase in the scale and intensity of wind energy development within this part of the view. On balance, the magnitude of visual impact is deemed to be Low.	
VP9	R639 between Cullahill and Johnstown Located approximately 100 m southeast of the M8 corridor at this location, this regional road is a former, now downgraded, national road connecting the villages of Cullahill and Johnstown. Owing to the limited presence of mature roadside vegetation on either side of the road at this point, relatively open views are afforded towards the hill range in the centre of the study area.	Medium-low	Six of the seven Ballylehaun turbines will be visible from this location to varying degrees, ranging from partial views of blade tips to fully revealed turbines that will present as prominent features within the view. Whilst the proposed turbines will present in a relatively clear and unambiguous manner, turbine T1 will appear as a slight outlier from the principal turbine array. Nonetheless, the perceived variation in the scale of the proposed turbines creates a strong sense of layering and depth as the turbines extend across and ascend the ridgeline to either side. Whilst there will be a readily apparent degree of visual change and a strong visual presence associated with the Proposed Development, this will not translate into a commensurate degree of adverse effect on the inherent visual amenity of the scene. On balance, the magnitude of visual impact is deemed to be High-medium.	Moderate/Negative / Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
VP10	Galmoy Graveyard By way of context, the church and graveyard at Galmoy village, in the west of the Central Study Area, are situated on slightly elevated ground above the village, affording relatively open views to the east in the direction of the site. Beyond the low-level development of the village and an expanse of pastoral fields, the hillscape within and surrounding the site is visible at distances of approximately 4–6 km. The scene is notably modified, well settled and strongly utilitarian in character. Approximately 8 km to the east, the four existing Lisdowney turbines can be discerned along the ridgeline, whilst further to the southeast, a communications mast is also visible along the skyline.	Medium-low	All seven of the proposed Ballylehaun turbines will present clearly within the distant hillscape context. The turbines will form noticeable built features within the view, although their scale and function can be reasonably accommodated within this broad and productive landscape setting. Partly owing to the presence of the more distant existing Lisdowney turbines amongst the proposed turbine array, there is likely to be some conflict of scale and associated distance confusion between the existing and proposed developments. Furthermore, turbine T1 will present as a slight outlier from the remainder of the proposed array. Whilst the visual presence of the Proposed Development will be readily apparent, the somewhat discordant composition of the turbine layout from this location may draw additional attention to the scheme. Nevertheless, this effect will be moderated by the viewing distance of more than 4 km and the broad scale and modified character of the receiving landscape. On balance, the magnitude of visual impact is deemed to be Medium.	Moderate-slight/ Negative/ Long-term
VP11	Lisdowney GAA Club The small hamlet of Lisdowney, within the Central Study Area, is situated to the northeast of the site. In this scene, beyond the foreground GAA club grounds, development associated with the village can be seen to the southwest (i.e. to the right of the view). Beyond the gently sloping pastoral fields, the four existing Lisdowney turbines are clearly evident along the elevated skyline.	Medium	As illustrated by the wireframe view, there is potential for visibility of all five Ballyring turbines, although the towers of all five turbines will be largely screened by intervening terrain. Furthermore, from this viewing context, dense intervening vegetation in the direction of the site will substantially diminish the perceived scale and intensity of the Proposed Development, with the blade sets of up to three or four turbines likely to be partially visible. Whilst the partial rotation of turbine blades above the intervening treetops will generate a degree of visual ambiguity within the scene, the established presence of the Lisdowney turbines provides a clear precedent for wind energy development within this landscape. This will assist receptors in visually interpreting the Proposed Development as an intensification of an existing and familiar form	Slight / Negative / Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
			of renewable energy infrastructure within the surrounding landscape. Overall, the magnitude of visual impact is deemed to be Low .	
VP12	L5818 local road at Ballylehaun This is a locally elevated and open view afforded across rolling pastoral lands in the townland of Ballylehaun. A notable sense of openness is afforded to the west, where the rolling landscape is cloaked in broad pastoral fields interspersed with hedgerow vegetation. To the south, a stronger sense of containment is generated by the nearby sloping landform, although a strong pastoral aesthetic continues to prevail. To the east, views are generally well contained by surrounding roadside vegetation, with only brief windows of visibility afforded through gaps in the vegetation.	Medium	Six of the Ballylehaun turbines will be visible in this view and will present in a prominent, but not overbearing, manner. The majority of the turbine towers will rise beyond the nearby ridgeline, providing a degree of visual separation between the turbines and receptors within the immediate surrounding landscape. Whilst brief views of the Ballyring turbines will also be afforded through gaps in vegetation to the east, these will have a more limited visual presence due to their distance of over 3.4 km and the intermittent nature of their visibility. The Ballylehaun turbines will have a dominant visual presence, with the nearest proposed turbine located approximately 796 m from this viewpoint. Nonetheless, the turbines will present in a highly legible manner and generate a degree of visual rhythm owing to their relatively even spacing. Overall, the Proposed Development will generate a marked degree of visual change at this location but will not unduly conflict with the overriding robust and productive working character of the receiving landscape. Thus, the magnitude of visual impact is deemed to be High-medium.	Substantial-moderate/ Negative / Long-term
VP13	St. Patricks GAA at Ballyragget This GAA club is located to the south of Ballyragget village, with residential development present in the vicinity of the club grounds. Owing to vegetation within and surrounding the grounds, clear and unimpeded views in the direction of the site are relatively limited, although they are more readily attainable here than from most other locations within Ballyragget. In this scene, between and beyond the	Medium-low	Behind the aforementioned foreground vertical elements, most of the proposed Ballyring turbines will be theoretically visible at a distance of just over 6 km. Nonetheless, layers of intervening mature vegetation will heavily obscure views of the proposed turbines. In the context of the settlement setting and the visually busy foreground, the Proposed Development will have a sub-dominant visual presence. The Ballyring turbines will present as a relatively clear and coherent layout, albeit with some instances of	Slight/ Negative/ Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
	strong vertical influence of the foreground floodlights, ball-stop netting and goalposts, the low hill range within the Central Study Area is visible. Land use across the ridgeline comprises a mix of pastoral farmland, commercial forestry and existing wind energy development, in the form of the four Lisdowney turbines.		turbine overlap. The larger proposed turbines will be positioned downslope of the smaller existing Lisdowney turbines, thereby reducing the potential for scale confusion between the two developments. In addition, the blade sets of up to three of the more distant Ballylehaun turbines will extend above the ridgeline at a distance of more than 10 km. Collectively, the Ballyring and Ballylehaun turbine clusters, in combination with the existing Lisdowney turbines, will result in a notable increase in the extent and intensity of wind energy development within the scene. However, this will occur within a topographic and thematic context where wind energy development is already an established feature and where the Proposed Development can be reasonably well assimilated. Overall, the magnitude of visual impact is deemed to be Low.	
VP14	Grangefertagh Round Tower Grangefertagh Abbey was founded in the 6th century AD, with the 31 m-high round tower added several centuries later. The tower remains largely intact, whilst the former abbey now survives as ruins. The site has also served as a burial ground for local parishioners for centuries, as is evident within this view. Although located within the Central Study Area, views in the direction of the site are largely curtailed by tall, mature vegetation within and surrounding the graveyard. However, above a lower section of hedgerow, intermittent views are afforded towards the hillside on which the Proposed Development is located. To represent the greatest potential for visibility of the Proposed Development, this viewpoint was captured near the southern end of the graveyard. It should be noted that this	High-medium	Whilst the graveyard and round tower are located approximately 3 km from the nearest proposed turbine, the aforementioned vegetation will screen the vast majority of views of the Proposed Development from almost all areas of the graveyard, including locations at and around the round tower and ruined abbey. From this particular location within the graveyard, one proposed turbine will be clearly visible above the distant ridgeline, in contrast to up to five additional turbine blade sets that are likely to be viewed 'cutting' across the intervening ridgeline. This has the potential to generate a degree of visual ambiguity within this part of the view. However, the context of the view remains important. The principal source of visual amenity within the graveyard is derived from the impressive round tower and associated ruined abbey at its western end, where views in the direction of the Proposed Development are almost entirely screened. In this regard, whilst the proposed turbines will be visible from some limited sections of the graveyard,	Slight/ Negative/ Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
	location does not lie along any formal route or pathway used to access or exit the graveyard.		they are unlikely to draw particular attention or materially detract from the principal visual amenity and appreciation of this heritage setting. Overall, the magnitude of visual impact is deemed to be Low .	
VP15	L3209 north of Templetuohy This viewpoint is located on the northern outskirts of the Tipperary village of Templetuohy, where a break in roadside vegetation affords views in the direction of the site. Whilst the direction of view is relatively acute for road users, it is more representative of the visual amenity experienced from a number of residences at and near this location. Beyond a small number of arable fields and successive layers of hedgerow vegetation, the most notable features within the wider view are the numerous existing turbines that are visible or partially visible. These comprise the Bruckana and Lisheen III wind farms, which are located within approximately 5 km to the east of Templetuohy and collectively comprise 24 turbines.	Medium-low	At a distance of almost 15 km, the proposed turbines are unlikely to be readily noticed, partly due to the considerable viewing distance and associated atmospheric perspective, but also as a consequence of the strong visual presence of the closer existing wind farms. If discerned, the proposed turbines may be distinguishable due to the scale disparity and spatial separation between them and the existing turbines. However, as the Proposed Development will effectively be viewed 'through' two existing large-scale wind farms from this location, it is highly unlikely to exert any appreciable influence on the inherent visual amenity of the scene. Thus, the magnitude of visual impact is deemed to be Negligible	Imperceptible/ Neutral/ Long-term
VP16	L5821 at Ballygowney By way of context, this viewpoint is located along a quiet local road between the Ballyring and Ballylehaun turbine sites and at a marginally lower elevation. A small number of residences are situated along this road, whilst roadside hedgerows are variable in height and density and generally restrict outward views from many locations. Where more distant views are afforded, these tend to be directed uphill, broadly to the east and northeast, where the four existing Lisdowney turbines are visible, or towards the more distant lowland landscape to the southwest and west.	Medium-low	Owing to the aforementioned context along this local road, views of either the proposed Ballyring turbines or the Ballylehaun turbines are likely to open up intermittently as one travels through the area. However, both turbine clusters are less likely to be simultaneously visible to road users or nearby residents. At this location, the existing Lisdowney turbines will remain visible to the northeast, whilst the proposed Ballyring turbines will be difficult to discern. To the west and northwest, at a distance of less than 2 km and broadly in the line of sight of road users, the blade sets of up to five proposed Ballylehaun turbines will be partially visible, albeit through a veil of intervening roadside vegetation. The presence of	Moderate / Negative / Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
			these rotating elements above intervening rooftops and vegetation will increase their visual prominence relative to stationary elements of a similar scale and proximity. Furthermore, the partial and fragmented nature of the turbine visibility will generate a degree of visual tension and ambiguity, which will do little to aid the overall legibility of the Proposed Development within this view. Overall, the magnitude of visual impact is deemed to be High-medium	
VP17	L1803 at Rathlogan By way of context, this is a quiet local road that serves the community within a shallow valley that arcs to the south of the mid-ground hills. This viewpoint is located at a T-junction, in the vicinity of a small number of residences set within a pastoral valley in the Central Study Area. The rolling hills within which the Proposed Development is located rise to the north and northeast. Overall, the surrounding land use and landscape fabric are highly utilitarian and productive, whilst the area is also relatively well settled. Although less apparent, the blade tips of three of the existing Lisdowney turbines are visible above the ridgeline to the northeast.	Medium-low	This is a clear and readily comprehensible view of the proposed turbines, which will rise at a prominent but assimilative scale from the upper contours of the mid-ground hill range within which the Ballylehaun turbines will be located. Several of the turbines will stand clearly above the ridgeline, whilst others will be partially screened by intervening landform, with only the blade tips of one turbine theoretically visible. Due to the uphill nature of this view, the perceived scale of the proposed turbines is marginally heightened here. The Proposed Development will result in a marked increase in the scale and intensity of built development within this vista, with wind energy development becoming one of the dominant features of the view. The proposed Ballyring turbines will also be visible to the east as more distant and modest-scale features, presenting as a distinctly separate turbine cluster from the Ballylehaun turbines. Nonetheless, the clear and legible presentation of the turbines, coupled with their association with the underlying rolling hillscape, will assist in their visual assimilation. On balance, the magnitude of visual impact is deemed to be High-medium.	Substantial-moderate/ Negative / Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
VP18	L1808 at Monphole This is an uphill view afforded in a westerly direction from a local road in the townland of Monphole. The view to the west is partially contained by roadside vegetation along large stretches of this local road corridor, with views over the roadside vegetation afforded across sloping terrain cloaked in pastoral lands and further layers of intervening hedgerow vegetation and mature trees. The view is truncated at a short distance to the west by the combination of sloping terrain and dense vegetation.	Medium-low	A partial but prominent view of the Ballyring turbines will be afforded in this uphill view, with the rising nature of the terrain accentuating the apparent scale and prominence of the proposed turbines. All five turbines will be visible, with T9 presenting as the most visually prominent, at a distance of approximately 855 m. Despite their apparent scale, the turbines will not generate any strong sense of overbearing, nor will they appear out of place within this modified rural context. Indeed, whilst the rotating turbine components will draw the eye and represent a marked degree of visual change along this vegetated ridgeline, the five turbines will present as a well-spaced and legible cluster. Furthermore, their varying perceived scales will generate a sense of perspective and depth, reinforcing their spatial relationship across the underlying landscape. Overall, the magnitude of visual effect is deemed to be High-medium.	Substantial-moderate/ Negative/ Long-term
VP19	L5886 at Knockmajor This viewpoint is broadly representative of receptors within the eastern section of the wider study area and was selected owing to its elevated position, which affords views in the direction of the site. The scene is strongly characterised by agricultural land use, interspersed with occasional areas of coniferous forestry. To the west, at a distance of over 15 km, the low hillscape of the Central Study Area is visible, along the ridgeline of which the existing Lisdowney turbines can be faintly discerned, although they are unlikely to be readily noticed.	Medium	At a distance of almost 18 km, the Proposed Development will be faintly discernible as a well-spaced, moderate-sized wind farm extending along the descending ridgeline of one of several hills within the wider landscape. At this distance, and subject to considerable atmospheric perspective, the proposed turbines will occupy a relatively contained visual envelope within the broader vista and are more likely to be noticed by residents during clear weather conditions than by passing road users. Aesthetically, the linear arrangement of turbines across the ridgeline presents as a clear and readily comprehensible layout, with little potential for visual clutter or disharmony. Importantly, there will be limited potential for scale confusion between the existing and proposed turbines, as the larger proposed turbines will extend downslope from the smaller existing Lisdowney turbines. This	Slight-imperceptible/ Negative/ Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
			arrangement lends the impression of the developments forming part of a broader, visually coherent wind energy cluster. Overall, the magnitude of visual impact is deemed to be Low-negligible	
VP20	L1806 at Garrydague This viewpoint is located in the vicinity of several residences along a steeply sloping local road between the Ballyring and Ballylehaun turbine areas. The road also forms part of the North Kilkenny Cycle Route. Roadside hedgerows generally restrict outward views to either side of the road at any one location. To the east and northeast, a garden hedge restricts more distant views, other than towards the upper floor of a nearby dormer residence, and tends to funnel views along the road corridor. To the northwest, a front garden and bungalow largely preclude more distant visibility. However, to the west, more distant downhill views are afforded to the south of this residence, extending across a pastoral landscape with a strong rural aesthetic.	Medium-low	In light of the aforementioned context, views of either the proposed Ballyring turbines or the Ballylehaun turbines are likely to open up intermittently as one travels along this local road. However, there will be relatively few locations where both turbine clusters are simultaneously visible to road users or nearby residents. To the west, up to six of the proposed Ballylehaun turbines have the potential to be visible above the roadside vegetation and will present as notable built features, with some instances of turbine overlap. To the east, the Ballyring turbines will have a notably more prominent visual presence, although the nearby dwelling will truncate views of some of the turbines. Nonetheless, residents on either side of the local road are likely to experience prominent views of the proposed turbines from their respective front and rear gardens. In combination with the surrounding residential development, the proximity and scale of the proposed turbines have the potential to increase the perceived sense of enclosure at this location, whilst also introducing a considerably greater intensity of built development than currently occurs. Furthermore, the particular viewing context, whereby the turbines will appear relatively visually 'unanchored' from their underlying landscape setting due to intervening vegetation and built form, has the potential to generate a degree of visual ambiguity and confusion within the scene. On balance, the magnitude of visual impact is deemed to be High-medium	Substantial-moderate / Negative / Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
VP21	L5819 south of Gathabawn This viewpoint is located along a local upland road within the Central Study Area, which forms part of designated scenic route V14, as identified in the current Kilkenny CDP, with protected views directed towards the “<i>north and east</i>”. It is worth noting that views to the south are generally directed uphill and are therefore more contained and less panoramic in nature. Towards the northeastern end of the scenic route, near Gathabawn crossroads, views to the north and east are generally curtailed by roadside vegetation. However, at this location, where another local road adjoins the scenic route, more distant views to the north and northeast are afforded above lower roadside vegetation and through an agricultural field entrance. This provides an attractive, albeit relatively framed, view across a lowland agricultural valley to the north, where the four existing Lisdowney turbines are clearly visible along the distant skyline.	High-medium	The Proposed Development will present in two distinct turbine clusters from this location, with the Ballylehaun turbines appearing at a more prominent scale to the northwest through the neighbouring field entrance. These turbines will present in a legible manner, with a staggered layout, and will not appear out of place in terms of their scale or function within this working rural landscape. Along the lower ridgeline of the distant hill to the northeast, the five proposed Ballyring turbines will also be clearly visible and broadly within the line of sight of road users. The Ballyring turbines will be perceived at a more modest scale and will present as a clean and coherent layout, extending along the ridgeline downslope from the existing Lisdowney turbines. The larger proposed turbines will be positioned downslope of the smaller existing Lisdowney turbines, thereby reducing the potential for scale confusion between the two developments. Overall, the proposed turbines will result in a marked increase in the scale and intensity of wind energy development within this view. Nevertheless, the two turbine clusters will present in a relatively legible and coherent manner and will not notably detract from the prevailing rural character or visual amenity of the scene. Overall, the magnitude of visual impact is deemed to be Medium.	Moderate/ Negative / Long-term
VP22	L1805 at Frankford As with VP21, this viewpoint is located along a local upland road within the Central Study Area that forms part of designated scenic route V14, as identified in the current	High-medium	The proposed turbines will form an overt feature of the view from this location, with the seven proposed Ballylehaun turbines situated from approximately 1.5 km to the north and northwest. The visual presence of this clear and readily comprehensible turbine cluster	Moderate / Negative / Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
	Kilkenny CDP, with protected views directed towards the “north and east”. Again, it is worth noting that views to the south are generally directed uphill and are therefore more contained and less panoramic in nature. This location represents one of the most elevated stretches of the scenic route and affords commanding views across the lower-lying terrain to the west, northwest and north. The picturesque quality of this scene is principally derived from the elevated nature of the viewpoint, which affords expansive and sweeping views across the surrounding landscape. The landscape itself is highly utilitarian and productive, comprising predominantly pastoral farmland, interspersed with areas of commercial forestry and existing wind energy development. As the hillscape within the Central Study Area is generally lower than this location, more distant views to the west and northwest are also attainable. In this regard, the principal source of visual amenity is derived from the scale, openness and extent of the views available, rather than from the presence of any particularly distinctive or unique landscape elements. Overall, whilst the scene is strongly pastoral and anthropocentric in character, it nonetheless possesses an unmistakable scenic quality.		will be somewhat tempered by the turbines being viewed downhill from this elevated scenic route and by the broad, open nature of the views afforded. Consequently, the Proposed Development will not appear excessive in scale, although it will notably increase the intensity and scale of built development within the scene, resulting in a co-dominant visual presence. In contrast, the Ballyring turbines will be largely screened by roadside vegetation from this location, although partial visibility of these turbines is likely to be afforded further east along this stretch of the local road. Aesthetically, the proposed turbines will not noticeably obscure the more distant scenic views to the north, whilst the more appealing and expansive views to the northwest will remain largely unimpeded. There will be some visual ambiguity associated with partial views of the more northerly Ballylehaun turbines, particularly in terms of their relationship with the underlying landscape. However, any notable adverse aesthetic effects arising from this will be moderated by the clearer and more legible presentation of the nearer, more prominent turbines. Furthermore, the elevated nature of this viewpoint allows the overall arrangement of the Proposed Development to be readily understood within a broad landscape context where wind energy development is already an established feature. Overall, the magnitude of visual impact is deemed to be Medium	
VP23	R694 at Clone This viewpoint is located along a regional road to the southeast of the hillscape, within a strongly agricultural landscape context. The view is afforded above a low, scrubby roadside hedgerow and extends across a flat pastoral field, beyond which a large detached residence is situated against the backdrop of the more elevated hills.	Medium-low	All five of the proposed Ballyring turbines will be visible across the hillscape, presenting as a clear and coherent wind energy development. Whilst only a minority of the proposed blade sets will rotate entirely above the skyline, the turbine cluster will nonetheless read as a comprehensible and well-presented scheme. The scale disparity between the proposed turbines and the smaller existing Lisdowney turbines will generate a degree of visual tension	Moderate-slight/ Negative / Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
	Pastoral farmland and tall, tree-lined field boundaries strongly characterise the scene, whilst the four existing Lisdowney turbines are clearly visible along the more distant ridgeline..		and potential scale confusion, although this will occur within a landscape setting where wind energy development has long formed an established component of the prevailing character. Overall, whilst the Proposed Development will have a distinct visual presence and will notably increase the scale and intensity of built development within the scene, this will be moderated to some degree by the coherent layout and overall aesthetic presentation of the turbines from this location. On balance, the magnitude of visual impact is deemed to be Medium-low.	
VP24	L1804 at Balleen Lower This is a locally elevated view from the townland of Balleen Lower that is representative of surrounding local community receptors, particularly those that afford views across the broad valley to the north and northeast. The principal source of visual amenity at this location relates to these expansive cross-valley views towards the distant rolling terrain, which is cloaked in a patchwork of pastoral farmland interspersed with hedgerow vegetation. The existing Lisdowney turbines are visible along the rolling ridgeline to the northeast. To the northwest, views are channelled along the local road corridor, which is contained on both sides by scrubby hedgerows and mature trees.	Medium	Both the Ballyring and Ballylehaun turbines will be visible in this view, with a more ambiguous and partially contained view of the Ballylehaun turbines channelled along the local road corridor to the northwest. To the northeast, the Ballyring turbines will present prominently, crowning the rolling hill on the opposite side of the river valley. The turbines will present in a highly legible manner, albeit at a notably greater scale than the neighbouring Lisdowney turbines visible further to the north. In this regard, a degree of scale conflict and visual tension is likely to arise between the two developments and, owing to their scale differential, they will be readily perceived as separate wind energy developments. To the northwest, the partially visible Ballylehaun turbines will present in a more condensed and visually cluttered manner, with a notable degree of turbine overlap. Whilst this clustered presentation will generate some visual disharmony, its influence on the overall composition will be moderated by the clearer and more comprehensible presentation of the Ballyring turbines to the northeast.	Moderate/ Negative / Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
			Overall, the Proposed Development will generate a marked degree of visual change at this location and will notably increase the intensity and scale of built development within the local landscape context. Thus, the magnitude of visual impact is deemed to be Medium	
VP25	Johnstown GAA Club The small village of Johnstown is located just outside the Central Study Area to the southwest. On the outskirts of the village, The Fenians GAA Club affords some of the clearest and most open views from the settlement in the direction of the site. In this scene, beyond the foreground playing pitches and intervening village development, the low and relatively even hillscape forming the western part of the Central Study Area is visible. Land use across these low hills is predominantly characterised by pastoral farmland, interspersed with areas of commercial forestry, whilst a communications tower and two slender masts are also visible along the skyline.	Medium-low	At a distance of more than 5 km to the northeast, the blade sets and tips of all seven proposed Ballylehaun turbines have the potential to be visible or partially visible above intervening rooftops and treelines. In terms of their overall visual presence, the number, apparent scale and distance of the turbines will result in a relatively modest presence within the broader vista across this strongly anthropocentric landscape. However, the Proposed Development is likely to draw some attention through the movement of turbine blades above the intervening rooflines and treelines. As the blades will not rotate entirely 'clean' above these intervening features, a small degree of visual tension and ambiguity may arise. Nonetheless, within the broader landscape context, rotating wind turbines are already a well-established component of the prevailing character. Overall, the Proposed Development is unlikely to have a marked effect on the visual amenity of this highly modified and developed setting. Thus, the magnitude of visual impact is deemed to be Low .	Slight/ Negative/ Long-term
VP26	L1818 at Lismaine Bridge By way of context, this viewpoint is located to the southeast of the Central Study Area, within the low-lying alluvial basin of the River Nore. The relatively flat terrain in this area results in a general absence of elevated locations from which clear views towards the hillscape of the Central Study Area can be attained. However, the slightly elevated position of this bridge over the River Nore affords	Medium-low	All five of the Ballyring turbines have the potential to be visible from this location, although a nearby area of mature vegetation will veil views of two of the turbines. The proposed Ballylehaun turbines will also have the potential to be visible in the distance, albeit at a comparatively smaller apparent scale, with views of these turbines also partially screened by the aforementioned mature vegetation. Indeed, as road users travel along this road in the direction of the	Slight/ Negative/ Long-term

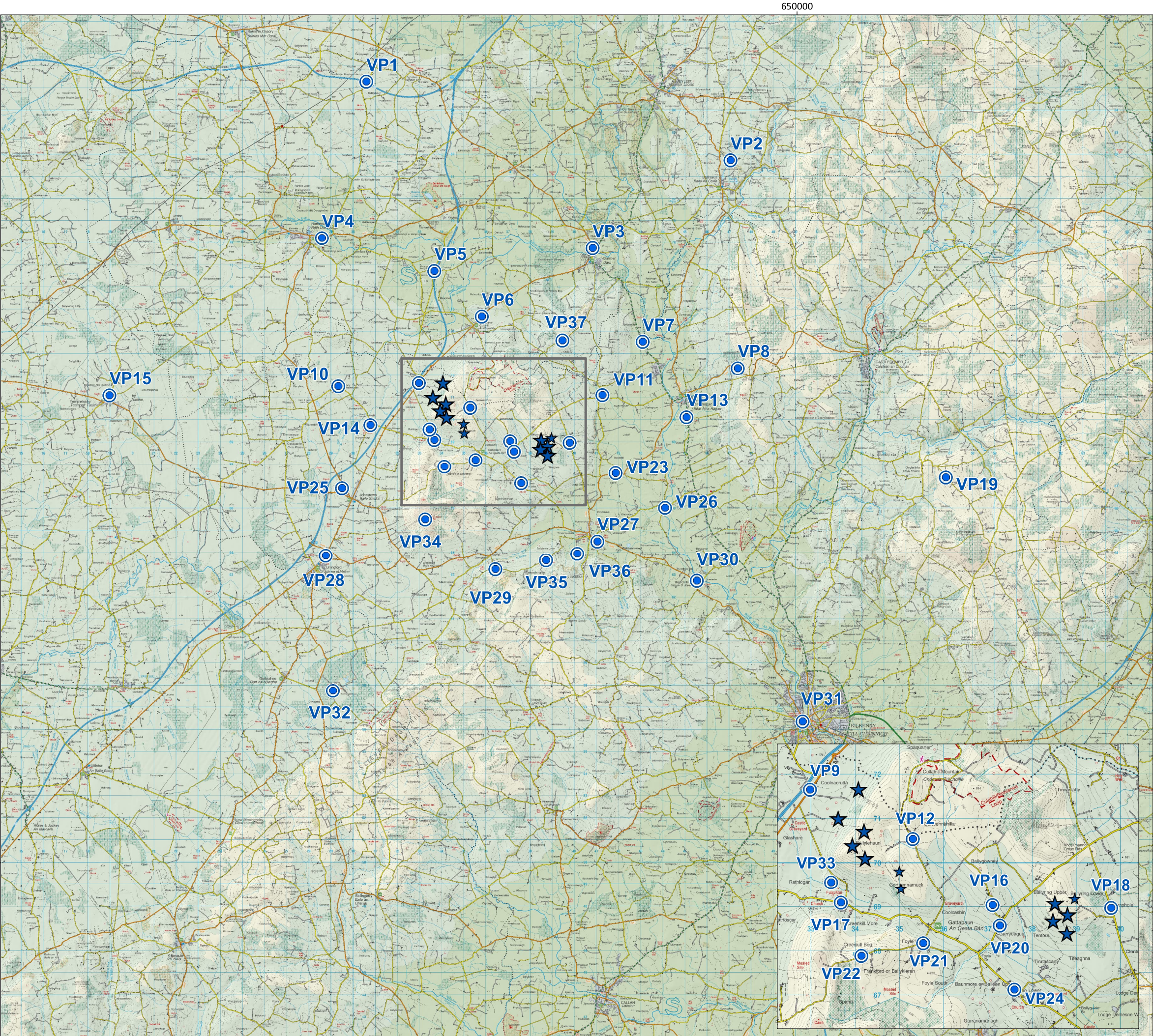
VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
	greater visibility in this direction. Views towards the site are nonetheless somewhat fragmented by roadside trees within the foreground and mid-ground. To the northeast, the existing Lisdowney turbines are visible along the distant ridgeline.		site, the degree of turbine visibility will vary considerably due to the influence of intervening vegetation. As the larger proposed turbines will be positioned marginally downslope of the smaller existing Lisdowney turbines, this arrangement will assist in reducing the potential for scale confusion between the developments. Overall, the Proposed Development will result in an increase in the scale and intensity of wind energy development across the distant rolling landscape but will not markedly alter or detract from the prevailing working character of this landscape setting. Thus, the magnitude of visual impact is deemed to be Low	
VP27	St. Lachtains GAA Club, Freshford By way of context, aside from club members and spectators, this GAA club is used widely by local residents for walking/jogging during daylight hours. Set on the southern edge of the village of Freshford, this scene provides glimpses of the village's development, intermixed with large, robust vegetation. A break in the mid-distance treeline reveals the low hillscape on which the site is set, across which four wind turbines of the Lisdowney wind farm are visible/partially visible.	Medium-low	The five proposed turbines in the Ballyring area will be partially visible across the hillside, set in front of the aforementioned existing Lisdowney turbines. Whilst this will represent a somewhat ambiguous view of the Proposed Development owing to intervening vegetation, the turbines will appear relatively evenly spaced and coherent in the wireframe. The proposed turbines will present at a notably greater scale than the existing turbines; however, any strong sense of scale conflict will be substantially moderated by their partial visibility and the degree to which they are visually contained by surrounding built development and intervening mature treelines. Further to the west, the blade sets of some of the proposed Ballylehaun turbines will rotate above the intervening treeline, generating a small degree of visual tension and ambiguity. Nonetheless, the fragmented nature of visibility and the strong degree of containment provided by intervening vegetation and built development will limit the overall visual presence of the Proposed	Moderate-slight / Negative / Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
			Development. Overall, the magnitude of visual impact is deemed to be Medium-low .	
VP28	R639 Regional Road at Urlingford Located approximately 8 km southwest of the site, the small town of Urlingford lies close to the Kilkenny–Tipperary border and was formerly situated along the main national Dublin–Cork road. This viewpoint is located on the northeastern outskirts of the town, along a route connecting Urlingford with the nearby M8 and with several roads approaching from County Kilkenny. In this view, beyond the foreground regional road and pastoral fields, a low hillscape is visible to the east. To the northeast, broadly in the line of sight of road users, the scene is characterised by residential development and multiple layers of intervening treelines. Street lighting, utility poles and a more distant water tower are also visible against the horizon, reinforcing the settled and modified character of the view.	Medium-low	At a distance of more than 8 km to the northeast, up to five of the proposed Ballylehaun turbines have the potential to be visible. However, owing to intervening vegetation, views of only three turbines will be afforded from this location, appearing along the distant rolling and vegetated skyline. Whilst distant features and only some of the numerous tall, man-made elements already present within the scene, the visual presence of the turbines will be increased by the movement of their rotating blades and their position broadly within the line of sight of road users. Nonetheless, the proposed turbines will not be conspicuous within this settled and modified visual context. If noticed, their partial visibility may generate a minor degree of visual ambiguity and clutter as the blade sets rotate against the distant skyline. Such effects will be substantially moderated by the viewing distance of over 8 km, at which the turbines will generally be perceived at a modest scale and with relatively low contrast against the sky. Overall, the magnitude of visual impact is deemed to be Low.	Slight/ Negative/ Long-term
VP29	L5000 at Kyleballynamoe Set at a T-junction along a marginally elevated local road that forms part of the North Kilkenny Cycle Route, this viewpoint affords relatively clear views towards the hill range within the Central Study Area. Whilst not without scenic merit, the scene is characterised by intensive and productive land management practices, predominantly in the form of pastoral agriculture, with areas of commercial forestry occupying some of the more elevated hilltops. Furthermore, the character of the landscape is already	Medium	Five of the proposed turbines in the Ballyring area have the potential to be visible to the south of the existing Lisdowney turbines, albeit partially screened by a nearby section of hedgerow vegetation. Nonetheless, where visible, the proposed turbines will present as noticeable but relatively modest-scale features along the distant skyline. Indeed, the turbines will contribute to a clear and coherent pattern of broader wind energy development across these hills, with the larger proposed turbines positioned marginally downslope of the smaller existing turbines, thereby reducing the potential for scale confusion.	Moderate-slight / Negative / Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
	influenced by existing wind energy development across the hillscape of the Central Study Area, approximately 6–7 km to the northeast.		Whilst there will be one instance of turbine overlap, overall, there will be limited visual clutter associated with the Proposed Development. The turbines will, however, result in a noticeable increase in the scale and intensity of wind energy development within the wider landscape setting. To the northwest, the blade tips of up to three turbines in the Ballylehaun area also have the potential to be visible rotating above the vegetated skyline, although these will have a relatively limited visual presence. Overall, the magnitude of visual impact is deemed to be Medium-low .	
VP30	L50104 at Threecastles This locality is known as Three Castles and comprises a small hamlet of residences situated between the R639 and the River Nore. Up to seven residences are located along this short cul-de-sac road overlooking the River Nore corridor. The principal aspect from these residences is generally directed to the northeast, whereas the Proposed Development is located to the northwest, where the low hillscape is characterised in part by the presence of the existing Lisdowney turbines.	Medium-low	At a distance of more than 8.3 km, the proposed Ballyring turbines will be clearly visible along the ridgeline, with their blade sets rotating cleanly above the skyline. Within the broader vista, and in light of the considerable viewing distance, their visual presence will remain sub-dominant. Aesthetically, there will be two distinct instances of turbine overlap, although the associated visual effects will be moderated by the limited potential for scale confusion between the existing and proposed turbines. The larger proposed turbines will be positioned downslope and in front of the smaller existing Lisdowney turbines, helping to establish a clear sense of spatial separation and perspective between the developments. Whilst the Proposed Development will notably increase the scale and intensity of wind energy development across these hills, it will remain broadly compatible with the underlying terrain, sense of place and prevailing landscape character. Importantly, the principal source of visual amenity at this location, comprising views across the River Nore valley, will remain largely unaffected. Overall, the magnitude of visual impact is deemed to be Low.	Slight/ Negative/ Long-term

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
VP31	St. Canice's Round Tower St Canice's Cathedral dates from the 13th century, although the religious origins of the site extend back to the 6th century. Adjacent to the cathedral stands a well-preserved, approximately 30 m-high, 9th-century Celtic Christian round tower. It is one of only a small number of round towers in Ireland that can still be climbed to the top. As a popular visitor attraction, the elevated viewing platform affords expansive panoramic views across Kilkenny City and represents one of the most elevated and open publicly accessible locations within the city from which views in the direction of the site can be attained.	High-medium	Located more than 16 km away, only the blade tips of the proposed turbines have the potential to be visible above the distant vegetated skyline. At this distance, they are unlikely to be readily discernible. Even if noticed, the limited and partial visibility of the turbine blade tips will have no notable influence on the visual amenity afforded by this expansive 360-degree panorama. Thus, the magnitude of visual impact is deemed to be Negligible .	Imperceptible/ Neutral/ Long-term
VP32	Kilcooley Abbey Kilcooley Abbey is located within the extensive walled Kilcooley Estate and is regularly used by the local community, including residents of nearby Urlingford, for walking and running through its woodlands and along its wooded avenue, as well as by visitors and tourists. This viewpoint is situated adjacent to the substantial ruins of the Cistercian abbey, which are set within an agricultural field. Elsewhere within the publicly accessible parts of the estate, more distant views in the direction of the site are generally precluded by the dense screening effect of mature woodland vegetation in the foreground.	High-medium	The Proposed Development will not be visible from this viewpoint, as it will be entirely screened by intervening landform and existing vegetation. Consequently, there will be no discernible change to the existing view or its visual amenity. Thus, the magnitude of visual impact is deemed to be Negligible .	Imperceptible/ Neutral/ Long-term
VP33- VP36	Heritage Views VPs 33-36 are all heritage views where the photomontages have been requested by the project Heritage Specialist to aid the impact assessment on heritage setting of particular protected structures / features. These do not fall within the public domain and are not regularly visited by members of the public. Thus, these four views will not form part of the visual impact assessment, as there would be a risk of non-expert assessment.			

VP No.	Existing View	VP Sensitivity	Visual Impact Magnitude	Significance / quality / duration of Impact
VP37	L5753 at Aharney – This is a pleasant view from a scenic designation that takes in a rolling pastoral landscape. Oriented to the south from the local road corridor, it is representative of views experienced from both the scenic designation and by surrounding local community receptors. The view is contained in the distance by rolling terrain at Cullahill and its surrounds, which is cloaked in a combination of pastoral farmland and blocks of coniferous woodland. The existing Lisdowney turbines are also visible, with their rotating blades viewed along the skyline ridge.	High-medium	All five of the proposed Ballyring turbines will be visible from this location at distances of over 4.4 km, whilst partial views of two of the Ballylehaun turbines have the potential to be afforded, with their blades rotating above the vegetated ridgeline and offset from the principal direction of view. Despite being larger than the existing Lisdowney turbines, the Ballyring turbines appear at a broadly similar scale from this location, where they are situated downslope of the existing turbine array. They present with a sub-dominant visual presence, viewed against the sky and generating a relatively low degree of visual contrast. Aesthetically, the proposed turbines will result in an extension to the vertical extent of wind farm development visible within this visual envelope. Nevertheless, the proposed turbines do not appear out of place in terms of their scale or function and are likely to be perceived as an extension to the existing turbine array. Overall, whilst the proposed turbines will result in an intensification of wind farm development, they do not notably detract from the scenic amenity afforded from this location, which is principally associated with views towards Cullahill. Thus, the magnitude of visual effect is deemed Medium-low	Moderate-slight/ Negative/ Long-term



Viewpoint Map

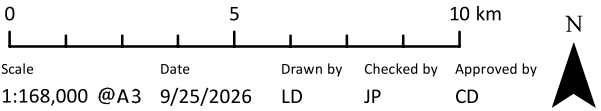
Legend

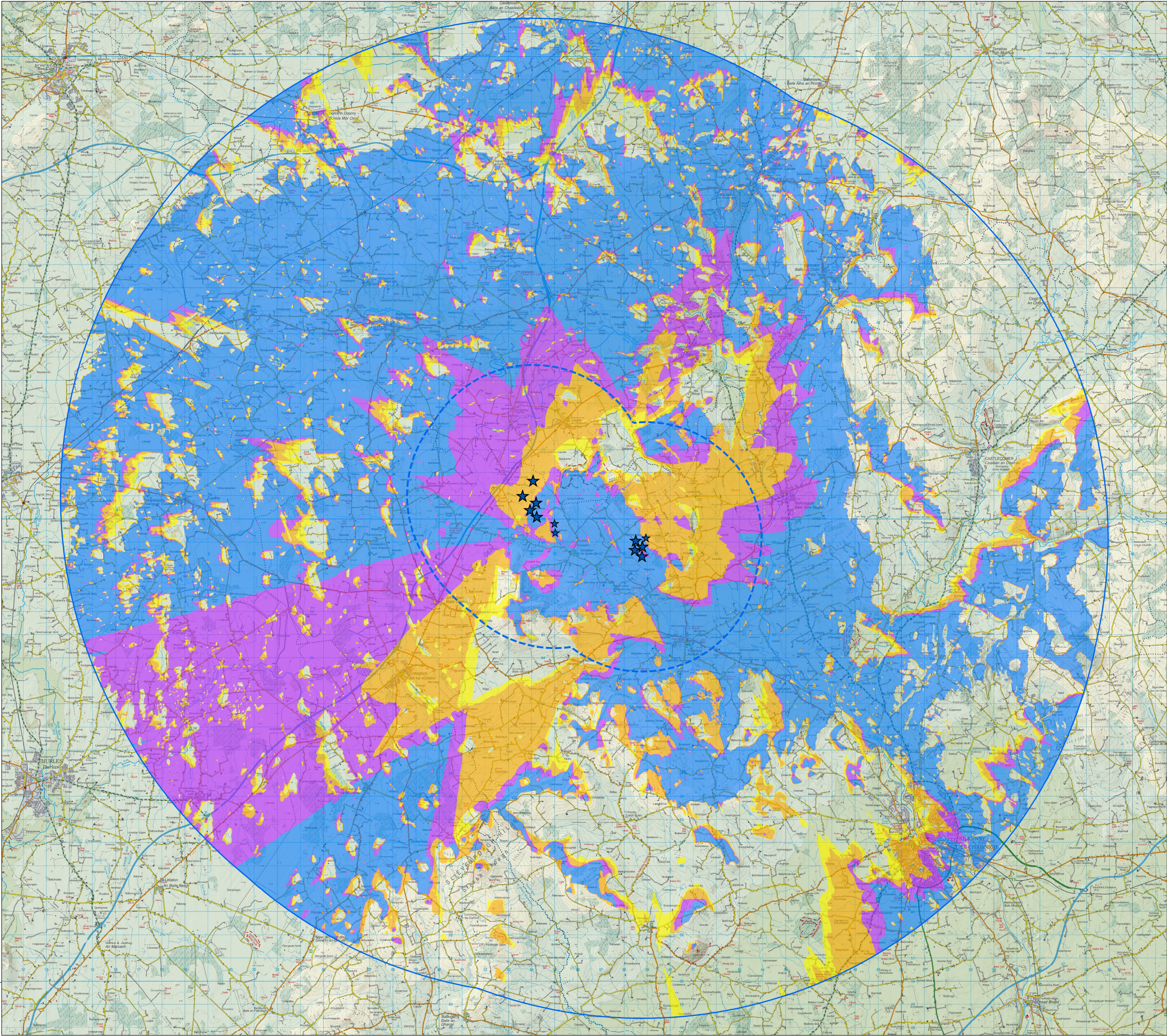
- Viewpoints
- Turbines
 - 150m
 - 170m



Credits
CYAL50467712 © Tailte Éireann – Surveying
Esri, Garmin, GEBCO, NOAA
NGDC, and other contributors

Coordinate System:
IRENET95 Irish Transverse Mercator





Gathabawn Wind Farm

Tip Height ZTV Map (150m - 170m)

Legend

Proposed Turbines

★ 150m

★ 170m

5km Central Study Area



20km Study Area



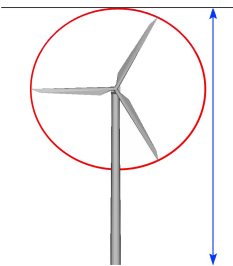
No. Turbines Visible

1 - 3

4 - 6

7 - 9

10 - 12



Notes

This ZTV map is based on the potential to see any part of the proposed turbine/s from the tip to base in a theoretical bare-ground scenario i.e. without accounting for screening by vegetation and/or buildings.

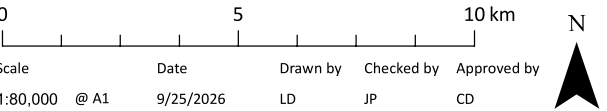
Observer Height assumed: 1.7m to eye-level height
Tip Height: 150m-170m



Credits

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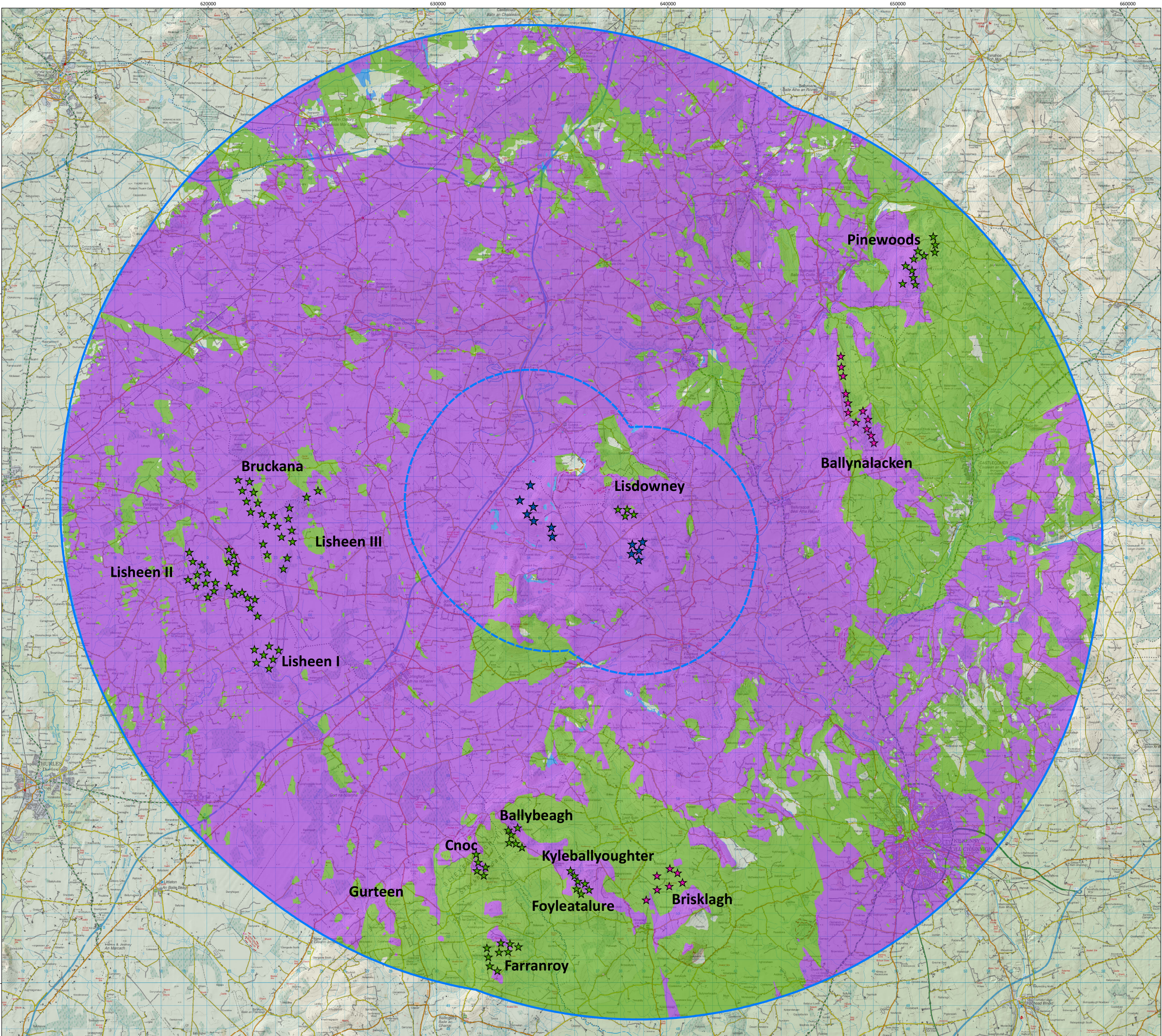
Coordinate System:
IRENET95 Irish Transverse Mercator



Scale	Date	Drawn by	Checked by	Approved by
1:80,000 @ A1	9/25/2026	LD	JP	CD



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Gathabawn Wind Farm

Current Cumulative ZTV Map

Legend

- Proposed Turbines
- Existing Turbines
- Permitted Turbines
- 5km Central Study Area
- 20km Study Area
- Wind Farm Visibility
 - 27.1% Visibility of existing or permitted turbines only
 - 70.3% Visibility of proposed turbines as well as existing or permitted turbines
 - 0.2% Visibility of proposed turbines only

2.4% of the entire study area to 20km will not have any view of the turbine blades of the proposed Wind Farm or that of any existing or permitted turbines

Notes

This ZTV map has been calculated such that a turbine registers as been theoretically visible to observers in the surrounding landscape once there is an unobstructed line of sight to its blade tip.

Observer Height assumed: 1.7m to eye-level height
Blade Tip Heights: Variable

Note: This ZTV map is calculated for landform screening only and does not take account of the significant screening effects of vegetation(hedgerows, trees) and buildings inherent across the study area.



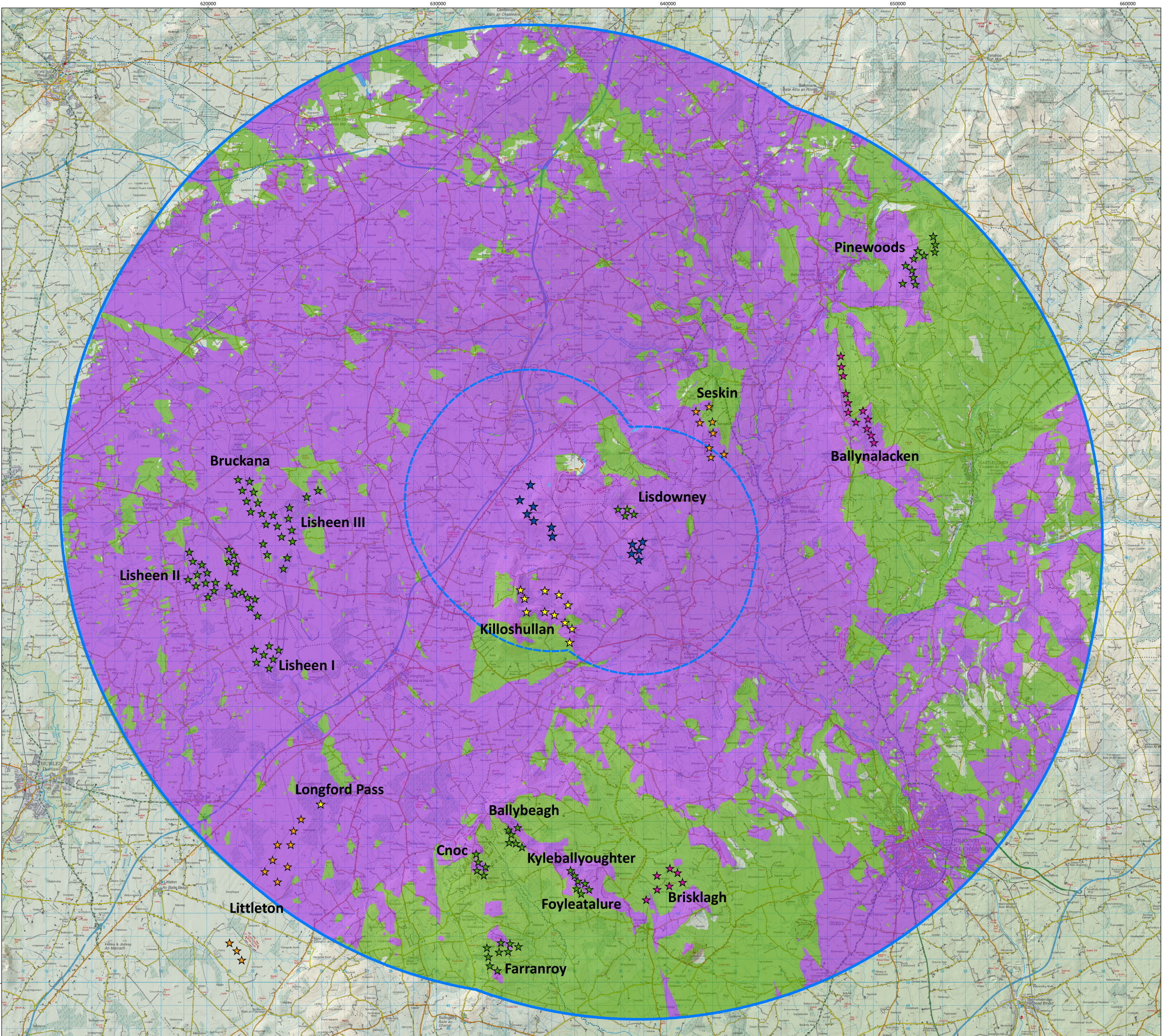
Credits

Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Coordinate System:
IRENET95 Irish Transverse Mercator

				
Scale	Date	Drawn by	Checked by	Approved by
1:80,000 @ A1	9/25/2026	LD	JP	CD





Gathabawn Wind Farm

Potential Cumulative ZTV Map

Legend

Proposed Turbines



Existing Turbines



Permitted Turbines



In-Planning Turbines



Pre-Planning Turbines



5km Central Study Area



20km Study Area



Wind Farm Visibility

27.5%

Visibility of existing, permitted, in-planning or pre-planning turbines only

70.3%

Visibility of proposed turbines as well as existing, permitted, in-planning or pre-planning turbines

0.1%

Visibility of proposed turbines only

2.1% of the entire study area to 20km will not have any view of the turbine blades of the proposed Wind Farm or that of any existing, permitted, in-planning or pre-planning turbines

Notes

This ZTV map has been calculated such that a turbine registers as been theoretically visible to observers in the surrounding landscape once there is an unobstructed line of sight to its blade tip.

Observer Height assumed: 1.7m to eye-level height
Blade Tip Heights: Variable

Note: This ZTV map is calculated for landform screening only and does not take account of the significant screening effects of vegetation(hedgerows, trees) and buildings inherent across the study area.



Credits

Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Coordinate System:
IRENET95 Irish Transverse Mercator

