Planning and Environmental Consultants

Environmental Impact Assessment Report

Carrig Renewables Wind Farm

Chapter 14 – Landscape and Visual

DOCUMENT DETAILS

Client:	**Carrig Renewable Energy Ltd**
Project Title:	**Carrig Renewables Wind Farm**
Project Number:	**211016**
Document Title:	**Environmental Impact Assessment Report (EIAR)**
Document File Name:	**Ch 14 Landscape and Visual**
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Planning and Environmental Consultants

Rev	Status	Date	Author(s)	Approved By
01	Final	21/09/2023	JS	JW

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14. LANDSCAPE AND VISUAL

14.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) addresses the potential landscape and visual impacts of the Proposed Development. The emphasis in this chapter is on the likely significant direct and indirect effects of the Proposed Development. It covers the assessment methodology, a description of the Proposed Development and the existing landscape based on relevant guidance. It includes a description of the landscape policy of County Tipperary with specific reference to wind energy and the LVIA Study Area in which the Proposed Development is located, as well as relevant landscape policy for County Galway and County Offaly where some visibility of the Proposed Development may occur.

The landscape of the area is described in terms of its existing character, which includes a description of landscape values and the landscape's sensitivity to change. The landscape and visual impact assessment of the Proposed Development uses visibility mapping, representative viewpoints, and photomontages. The potential impacts in both landscape and visual terms are then assessed, including cumulative impacts.

15 No. A3 scale figures are referred to throughout this chapter. There are a number of other figures included in-text where appropriate. The figures included in Appendix 14-6 are as follows:

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14.1.1 Statement of Authority

MKO has developed extensive expertise and experience over the last 15 years in the Landscape and Visual Impact Assessment of a range of projects, including multiple large scale wind energy developments.

This EIAR chapter was written by Jack Smith, MSc., PIEMA, a Landscape and Visual Impact Professional. Jack is a Project Environmental Scientist and Landscape and Visual Impact Assessment (LVIA) specialist with MKO. Jack is an Affiliate member of the British Landscape Institute and holds membership with the Landscape Research Group. Jack's primary role at MKO is producing the LVIA chapter of EIA reports. Jack specialises in preparing Landscape and Visual Impact Assessment Reports for large-scale renewable energy projects including wind farms, solar farms, quarry extraction and strategic housing schemes. Jack has additional experience in preparing landscape feasibility reports for large wind farm projects.

Jack Smith was also aided by Jack Workman MSc, TMLI. Jack is a chartered member of the British Landscape Institute as a Technician Member (TMLI) and he is the Landscape & Visual Project Director at MKO. He is an Environmental Scientist and Landscape and Visual Impact Assessment (LVIA) specialist. Jack Workman's primary role at MKO is producing the LVIA chapter of EIA reports for large infrastructure developments. Jack holds an MSc. in Coastal and Marine Environments and a BSc. in Psychology, he is a member of the Landscape Research Group, as well as holding a membership with the Chartered Institute of Water and Environmental Management.

14.1.2 'Do-Nothing' Scenario

If the Proposed Development were not to proceed, no changes would be made to the current land-use practice of low intensity agriculture and commercial forestry. Should this occur the landscape and visual impact would be neutral in the context of this EIAR.

14.1.3 Proposed Development Description

A full and detailed description of the Proposed Development can be found in Chapter 4 of this EIAR. Section 4.1 describes the development and its component parts (the 'Proposed Development') including the works subject of a proposed application for planning permission to An Bord Pleanála.

The Proposed Development will consist of the provision of the following:

i. *7 No. wind turbines with an overall ground-to-blade tip height ranging from 179.5 metres (m) to 185 m; a rotor blade diameter ranging from 149m to 163 metres; and hub height ranging from 103.5m to 110.5m, and associated foundations and hard-standing areas;*
ii. *1 no. 38kV permanent electrical substation including a control building with welfare facilities, all associated electrical plant and equipment, battery energy storage system, security fencing, all associated underground cabling, wastewater holding tank and all ancillary works;*
iii. *1 no. meteorological mast with a height of 107 metres, and associated foundation and hard-standing area;*
iv. *All associated underground electrical and communications cabling connecting the turbines to the proposed wind farm substation;*
v. *All works associated with the connection of the proposed wind farm to the national electricity grid, via underground cabling to the existing Dallow substation;*
vi. *Upgrade of existing tracks and roads, provision of new site access roads and hardstand areas;*
vii. *All works associated with the provision of a new site entrance off the L5040 local road;*
viii. *4 no. peat repository areas*
ix. *3 no. spoil repository areas*
x. *2 no. temporary construction compounds;*
xi. *Junction accommodation works to facilitate turbine delivery ;*
xii. *Spoil Management;*
xiii. *Site Drainage;*
xiv. *Tree Felling;*
xv. *Operational stage site signage; and*
xvi. *All ancillary works and apparatus.*

This application is seeking a ten-year permission and 35 year operational life from the date of commissioning of the wind farm development.

Range of Turbine Dimensions Assessed

The dimensions presented below are the range of hub height, blade length and overall tip height assessed within differing chapters of this EIAR:

- Turbine Tip Height – Maximum Height 185m, Minimum Height 179.5m
- Hub Height – Maximum height 110.5m, Minimum height 105m
- Rotor Diameter – Maximum length 163m, Minimum length 149m

As outlined further below, the entire range of turbines was fully assessed using a number of photomontages comparing an alternative turbine configuration. A rotor diameter of 149m and a hub height of 110.5m is considered throughout the EIAR assessment and is a representative illustration of the Proposed Development on the basis of professional judgement and on consideration of the range of turbines which could be installed. This combination of rotor diameter and hub height (Maximum Hub Height and Minimum Rotor Diameter, 185m Tip Height) has been identified as the most representative for assessment, on the basis that the greatest extent of the entire turbine structure (blades and tower) would potentially be visible from the viewpoints assessed in the EIAR. This turbine configuration (rotor diameter of 149m and a hub height of 110.5m) of the range is termed as the 'Highest Hub and Shortest Blade':

- Highest Hub and Shortest Blade – All 18 No. Viewpoints.
  - Maximum Tip Height – 185 metres
  - Maximum Hub Height – 110.5 metres
  - Minimum Rotor Diameter – 149 metres

Irrespective of which combination of hub height and blade length within the range outlined above is installed on site, the significance of residual landscape and visual effects will not be altered. However, for the avoidance of doubt, two alternative turbine configurations are presented for four selected viewpoints included in the photomontage booklet accompanying this document, these configurations are termed 'Lowest Hub and Longest Blade', and 'Minimum Tip Height and Shortest Blade'. The viewpoints selected are representative of short-range views (VP17 <1 km from the proposed turbines, and VP16 <2.5km from the proposed turbines), medium range views (VP18 <3km from the proposed turbines, and VP15 <10km from the proposed turbines). The photomontage assessment tables for these viewpoints contained in Volume 2 Photomontage Booklet include a comment addressing the alternative turbine configurations and confirm that the turbine configuration ultimately installed on site will not alter the assessment of residual visual effects. The following summarises the 'Lowest Hub and Longest Blade Possible with Maximum Tip Height of 185m', and 'Minimum Tip Height and Shortest Blade' configurations that are presented:

- Lowest Hub and Longest Blade Possible with Maximum Tip Height of 185m – 4 Photomontage Viewpoints
  - Maximum Tip Height – 185 meters
  - Minimum Hub Height – 103.5 metres
  - Rotor Diameter – 163 metres

- Minimum Tip Height and Shortest Blade – 4 Photomontage Viewpoints
  - Minimum Tip Height – 179.5 meters
  - Minimum Hub Height – 105 metres
  - Minimum Rotor Diameter – 149 metres

As demonstrated by the turbine ranges presented in the Photomontage Booklet, irrespective of which combination of hub height and blade length within the range outlined in this application is installed on site, the significance of residual landscape and visual effects will not be altered as set out in Table 14-22 of this EIAR.

Essential Aspects of the Proposed Development from an LVIA Perspective

Guidance for the LVIA (GLVIA 3, 2013) states that

> *"It is important to make sure that the project description provides all the information needed to identify its effect on particular aspects of the environment. For LVIA, it is important to understand, from the project description, the essential aspects of the scheme that will potentially give rise to its effect on the landscape and visual amenity."*

The tall, vertical nature of the proposed turbines make them the most prominent elements of the Proposed Development from a landscape and visual perspective and have the most potential to give rise to significant landscape and visual effects. In this regard, the proposed turbines are deemed to be the 'essential aspect' of the Proposed Development which will give rise to effects on the landscape and visual amenity and therefore a primary focus of the LVIA conducted in this chapter.

Other components of the Proposed Development are not deemed to be as visually prominent as the proposed turbines, however, they have the potential to give rise to localised landscape and visual effects. Although not the primary focus of the LVIA, these elements are given due consideration throughout this chapter.

14.1.4 Mitigation by Design

Through the iterative project design process, informed by early-stage impact assessment work, landscape modelling, ZTV mapping and photomontage preparation, every effort has been made to bring forward the optimum design for the Proposed Development with respect to landscape and visual factors. The Proposed Development layout that is the subject of this LVIA, already incorporates the following landscape and visual design considerations for good wind farm design, with a particular focus on site selection:

- The turbine layout has been designed to create a coherent cluster of turbines, contiguous and connected to each other visually and with consistent spacing in line with the guidance for design and siting of wind farms within Hilly and Flat Farmland Landscape Types in the Wind Energy Development Guidelines (hereafter referred to as the WEDGs) for Planning Authorities (Department of the Environment, Heritage and Local Government (DoEHLG), 2006).
- The turbine layout has been designed so as to decrease the horizontal extent of the turbines when viewed within the landscape. This has resulted from early stage landscape feasibility design input, which resulted in the removal of another cluster of four turbines to the north of the current proposed cluster. See Chapter 3 for further details of this.
- Strategic siting of the proposed turbines on a flat site, reducing their visual prominence and visual effects in this relatively flat and heavily vegetated landscape, the proposed turbines are strategically sited within a modified working landscape where there is limited visibility (or large set back distances) from large population centres and designated landscape and visual receptors of high sensitivity.
- Siting of proposed turbines adheres to the minimum 500 metre set back distance in the Guidelines (DoEHLG, 2006) and also the 4 times tip height set-back distance explicitly set out for residential visual amenity prescribed by the Draft Revised Wind Energy Development Guidelines (hereafter referred to as the draft WEDGs) (Department of Housing, Planning and Local Government (DoHPLG, 2019)).
- The intended connection to the national electricity grid is underground thereby eliminating potential landscape and visual effects during the operational phase.
- The proposed 38kV substation is sited within the deciduous forestry on site and will be entirely screened from view outside of the immediate proximity to the site.

- The internal site road layout makes use of the existing tracks wherever possible (to be upgraded for construction and the delivery of wind turbine components), to minimise the requirement for new tracks within the site.

During the initial site selection process, landscape sensitivity was identified as a key constraint and hence, landscapes considered to be less sensitive are preferred over sites with higher sensitivity to change. The area in which the proposed turbines are located is not classified as either 'vulnerable', or 'transitional vulnerable', or classed as an area 'Least Compatible' for Wind Energy Development (further discussed in *Section 14.4.1*). The Proposed Development Site location and current layout minimises the theoretical potential for visibility and the site visits and assessment tools show that the actual visibility is far less than the theorised visibility. Where visibility does occur, the design is in accordance with the best practise and a coherent project nearly assimilates within the receiving landscape.

14.1.5 Assessment of Alternative Turbine Designs and Layout

The potential landscape and visual impacts of the Proposed Development were considered as part of the early-stage design process. Alternative turbine envelope specifications were generated for a series of preliminary ZTVs and photomontages in order to assess the extent to which alternative turbine designs and layouts may give rise to visual effects. These early-stage assessments enabled the choice of suitable and appropriately scaled turbines and turbine layout for the Proposed Development in mind of mitigating landscape and visual effects. For more information on alternative designs, please see Chapter 3 of this EIAR – *Consideration of Reasonable Alternatives.*

14.1.6 Scoping Replies / Pre-Planning Meeting

A scoping and consultation exercise has been carried out by MKO, as detailed in Chapter 2 of this EIAR. A pre-planning consultation meeting took place with Tipperary County Council (TCC) on the 29th November 2022, no topics specifically related to landscape or visual concerns were raised by the council. A second pre planning consultation meeting took place with Tipperary County Council on the 7th June 2023, with TCC recommending that the Landscape Character Assessment for the area where the Proposed Development is located be noted, with the Landscape Character Area within which the proposed turbines are located given a sensitivity rating of Class 2 (discussed in some detail below in Section 14.4.1.1.3). It was also noted by TCC that the Planning Rationale Report should demonstrate how the landscape can accommodate the Proposed Development. A pre-planning consultation meeting was conducted with Offaly County Council on the 13th April 2023 in which it was noted by a representative of the council that views from Birr Town and Birr Castle should be included in the landscape and visual impact assessment.

All feedback and communications have been taken on board when compiling the chapter and assessment. Section 2.7.1 of this EIAR (Chapter 2) summarises the pre-planning meetings with Tipperary and Offaly County Councils in greater detail.

14.2 Brief Methodology and Assessment Criteria

This section broadly outlines the methodology and the guidance used to undertake the landscape and visual impact assessment of the Proposed Development; a more detailed description of the methodology is outlined in Appendix 14-1 – *LVIA Methodology*. There are five main sections to this assessment:

- Visibility of the Proposed Development
- Landscape Baseline
- Visual Baseline

- Cumulative Context
- Representative Viewpoints and Photomontage Locations
- Likely and Significant Effects – outlining the assessment of landscape, visual and cumulative effects.

14.2.1 Scope and Definition of the Landscape and Visual Impact Assessment (LVIA) Study Area

For the purposes of this chapter, where the 'Proposed Development Site' or 'the site' is referred to, this relates to the immediate environment in which the Proposed Development is located. The Proposed Development Site is delineated by a green line labelled as the 'EIAR Site Boundary' in the A0 LVIA Baseline Map (Appendix 14-4) as well as other mapping figures shown in Appendix 14-6.

The Guidelines for Landscape and Visual Impact Assessment 3rd Edition – (GLVIA 3, 2013) guidance refers to the identification of the area of landscape that is to be covered while assessing landscape and visual effects. The guidelines state:

> *"The study areas should include the site itself and the full extent of the wider landscape around it which the Proposed Development may influence in a significant manner."*

Landscape and visual baseline mapping and viewpoint selection are based on a wider study area referred to as the 'LVIA Study Area'. The geographical parameters for this LVIA were determined by desktop studies, survey work undertaken, the professional judgement of the assessment team, experience from other relevant projects and policy guidance or standards, such as:

- *Appendix 3*, WEDGs– DoEHLG, 2006 (including reference to the draft WEDGs DoHPLG, 2019)
- The Guidelines for Landscape and Visual Impact Assessment 3rd Edition – (GLVIA 3, 2013)

The distance at which a ZTV is set from a proposed wind farm development usually defines the parameters of the LVIA Study Area. The LVIA Study Area was chosen as 20 kilometres for landscape and visual effects as is suggested by guidance;

> *'For blade tips in excess of 100m, a Zone of Theoretical Visibility radius of 20km would be adequate' (WEDGs Page 94, DoEHLG, 2006; Page 152, DoHPLG, 2019).*

Through experience conducting LVIA for other wind energy development projects, the assessment team determined that no significant effects on landscape character are likely to arise beyond distances of 15km from the proposed turbines. Therefore, a LVIA Study Area of 15km is deemed appropriate for effects on landscape character in relation to the assessment of effects upon designated Landscape Character Areas.

Furthermore, as prescribed by best practice guidance, the professional judgement of the assessment team, the following topic areas have been screened out of the assessment:

- Effects on landscape and visual receptors that have minimal or no theoretical visibility (as predicted by the ZTV) and/or very distant visibility, and are therefore unlikely to be subject to significant effects;
- Effects on designated landscape receptors beyond a 20 km radius from the proposed turbines, from where it is judged that potential significant effects on key characteristics and/or special qualities, or views are judged unlikely to occur;

- Effects on landscape character and designated Landscape Character Areas beyond a 15 km radius from the proposed turbines, where it is judged that potential significant effects on landscape character are unlikely to occur;
- Effects on visual receptors beyond a 20 km radius from the proposed turbines, where it is judged that potential significant effects are unlikely to occur;
- Cumulative landscape and visual effects beyond a 20 km radius from the proposed turbines, where it is judged that potential significant cumulative effects are unlikely to occur;

The tall, vertical nature of the proposed turbines make them the most prominent elements of the Proposed Development from a landscape and visual perspective and have the most potential to give rise to significant landscape and visual effects. The landscape and visual impact of ancillary elements such as the proposed roads, substation, met mast and grid connection are addressed within this chapter, however, the proposed turbines are of primary focus in this LVIA.

14.2.2 Guidelines

The legislation and general guidance on Environmental Impact Assessment is set out in Chapter 1 of this EIAR. The LVIA Reported in this chapter was guided and informed by guidance documentation specifically pertaining to the Landscape and Visual Impact Assessment. Details of the guidance used to conduct this LVIA are outlined in the LVIA Methodology Appendix – *Appendix 14-1*.

14.2.3 Baseline Landscape and Visual Information

In order to carry out this assessment, an initial desk study of baseline information was undertaken that has informed the LVIA, and this included the following:

Landscape

- Policies and objectives contained in the relevant county development plan pertaining to landscape and wind energy
- Landscape designations in the LVIA Study Area (Amenity Areas; Views and Prospects; Landscape Character Areas)
- Landscape character of the LVIA Study Area
- Landscape character of the Proposed Development Site based on
  - Site Surveys undertaken in 2022 and 2023
  - Landscape Character Types identified in *'Landscape Character Types as a basis for Guidelines*: Wind Energy Development Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government, 2006) and also the Draft Revised Wind Energy Development Guidelines (2019)

Visual

- Identification of Visual Receptors in the LVIA Study Area;
- Preliminary assessments of visibility of the Proposed Development from visual receptors using ZTV mapping and on-site appraisals.
- Route Screening Analysis

14.2.4 Assessment of Potential Impacts

The landscape and visual assessment methodology used in this chapter (outlined in Appendix 14-1) includes clearly documented methods based on the GLVIA guidelines (GLVIA 3, 2013). This includes consideration of landscape and visual sensitivity balanced with the magnitude of the effect to determine the significance of effects. Mitigating factors are then taken into consideration to arrive at residual

landscape and visual effects. Residual landscape and visual effects are graded upon an 'impact assessment classification of significance' scale, as defined by the Environmental Protection Agency of Ireland (EPA, 2022), included in Section 1.7.2 of Chapter 1 of this EIAR.

Photomontages are used to assess potential impacts, whereby the potential effects arising as a result of the Proposed Development are assessed from viewpoint locations representative of prominent landscape and visual receptors located within the LVIA Study Area. Throughout this chapter 'theoretical visibility', is referred to, this is based on Zone of Theoretical Visibility (ZTV) mapping which is addressed in the following section of this chapter. Further details of the methods used to produce ZTVs and Photomontages, as well as the landscape and visual impact assessment process are presented in the methodology appendix – *Appendix 14-1*.

14.3 Visibility of the Proposed Development

14.3.1 ZTV Mapping: Theoretical Visibility of the Proposed Turbines

Zone of Theoretical Visibility (ZTV) mapping is an important step in the LVIA process, in that it clearly shows which areas will have theoretical visibility of the proposed turbines and which areas will have no theoretical visibility.

The ZTV mapping methodology outlined in Section 1.3 of Appendix 14-1 was used to examine the theoretical visibility of the 7 no. proposed turbines from all landscape and visual receptors within the LVIA Study Area, using the half blade height of the wind turbines as points of reference. As noted in Appendix 14-1, actual visibility on the ground is significantly less than predicted by the ZTV mapping due to intervening factors such as: on site screening from natural and man-made features, atmospheric weather and/or localised topography.

Generation of the ZTV utilises large scale topographical data (interpolation across 10 m OSi contour data) and does not account for topographical variation of smaller scale (e.g. < 10 metre). Therefore, in reality, small, localised undulations in topography are likely to further inhibit visibility of the Proposed Development that may not be represented in the ZTV map. Other features of the landscape such as vegetation and man-made elements are also likely to obscure the proposed turbines from view from many areas where the ZTV indicates there is full visibility. In this regard, the ZTV is a useful tool to indicate where there is definitely no visibility of the Proposed Development, therefore receptors located in these areas can be screened out from further assessment.

14.3.2 Half Blade ZTV of the Proposed Turbines

The Half Blade ZTV map of the Proposed Development and LVIA Study Area is shown in Figure 14-1. The ZTV map is used within several mapping figures included in this chapter to enable assessment of theoretical visibility from landscape and visual receptors (See Appendix 14-4 – *LVIA Baseline Map*; Figure 14-12 – *Landscape Character Areas & ZTV*; Figure 14-14 – *Visual Baseline & ZTV*). Separate colour bands are used on each ZTV map to indicate the number of turbines of which the half blade will potentially be visible. The legend on each map shows the number of visible turbines for each corresponding colour, which are as follows:

- Orange: 1-2 turbines visible
- Teal: 3-4 turbines visible
- Yellow: 5-6 turbines visible
- Navy: 7 turbines visible

Figure 14-2 shows the topographical features and elevation gradients existent within the receiving landscape of the LVIA Study Area, the geography of these topographical features defines the distribution of theoretical visibility illustrated in Figure 14-1.

The topographical characteristics of the Proposed Development Site and surrounding landscape setting is broadly represented of a flat midlands landscape. The site is very low lying, there is only approximately 30 metres difference in elevation from the lowest point (Lough Derg in the southwest ~ 30m AOD) to the approximate height of the site (60m AOD). This minor difference in elevation between the lake and landform prevails across large swathes (particularly to the west, south and north) of the LVIA Study Area, which comprises a total area of approximately 1,326 km^2. Topographical features provide a relatively pronounced screening effect in flat landscapes. The following discussion considers various topographical characteristics of the LVIA Study Area as they relate to theoretical visibility as output by the ZTV map above.

Description of Theoretical Visibility within 5km of the Proposed Turbines

As shown in the topographical features map (Figure 14-2), the Proposed Development Site is located within a relatively flat area of land with only minor undulations in the topography within 5km of the Proposed Development shown. As a result, theoretical visibility of all turbines is mostly full within 5km of the proposed turbines. There is an area of elevation approximately 4.5km to the southeast of the site (defined by the hill of Knockshigowna), rising to form a ridgeline that creates a large area of no theoretical visibility (see Figure 14-1). Some smaller patches of no theoretical visibility also exist towards 5km from the site as a result of small undulations in topography.

Description of Theoretical Visibility beyond 5km of the Proposed Turbines

As shown in Figure 14-1 and Figure 14-2, the ridgeline located approximately 5km southeast of the site extends in a south-westerly direction to the edge of the LVIA Study Area, creating large areas of no theoretical visibility in the south, along the border with County Offaly. West of this ridgeline smaller undulations, seen on Figure 14-2, have a greater screening effect further from the site, with noticeably large areas of no theoretical visibility beyond 10km from the proposed turbines to the south-southwest.

To the southwest, near the shores of Lough Derg, a number of small hills can be seen between 10-15km from the site, which create large areas of no theoretical visibility to the south-west, along the shores of Lough Derg and on the lake itself.

To the northwest of the site, between 5-10km, a series of small hills to the north of the R489 borders very flat parcel of land adjacent to the River Shannon. The topography crates a large are of no theoretical visibility here, extending for the most part to the Shannon itself and beyond. Beyond 15km

in this direction (northwest) there is primarily full theoretical visibility in the lands within County Galway.

To the north, a number of small undulations in topography provide some areas of no theoretical visibility, particularly beyond 15km from the site. However, there is primarily full theoretical visibility in this direction. This pattern continues to the northeast, where there are intermittent patches of no theoretical visibility but primarily areas of full theoretical visibility predominate.

To the east of the proposed turbines, the landscape begins to undulate more dramatically towards the foothills of the Slieve Bloom Mountains, creating large areas of no theoretical visibility beyond 10km from the proposed turbines, extending to the edge of the LVIA Study Area.

14.3.3 ZTV Versus Actual Visibility

As mentioned previously, the ZTV map is a useful tool to indicate areas where there will be no visibility of the proposed turbines. In practice, vast areas of the LVIA Study Area which have an indication of full theoretical visibility by the ZTV map (Figure 14-1) are likely to have no visibility of the proposed turbines due to other screening factors existent within the landscape.

Multiple field surveys were conducted during 2022 and 2023 to determine the actual visibility from locations where the ZTV has indicated full theoretical visibility. These surveys determined that screening from localised undulations in topography, vegetation and man-made elements significantly reduce the likelihood of viewing turbines in vast areas of the LVIA Study Area, in particular areas beyond 5 km from the proposed turbines to the north-east, north, north-west, west and south-west.

In most instances, screening existent in the gently undulating and highly vegetated landscape beyond 5 km from the proposed turbines did not permit open views in the direction of the proposed turbines. Visibility is only likely to occur in isolated, elevated vantage points where open, long-ranging landscape views were found or near specific locations on the shore of Lough Derg, where the large body of water permits open long-range views in the direction of the proposed turbines. Representative photomontages were captured from elevated locations where open views towards the proposed turbines were found. Visual effects arising from such locations are assessed in Section 14.7 - *Likely Significant Landscape and Visual Effects.*

Figure 14-2 shows the elevation gradients existent within the LVIA Study Area. In a general sense, the landscape of the LVIA Study Area is flat to the north, south and west. On-site appraisals of visibility in the LVIA Study Area determined that long range views are very limited in this part of the LVIA Study Area, particularly when the viewer is at the same base elevation as the proposed turbines. The low base elevation of the turbines relative to the surrounding landscape causes a 'disproportionate screening effect' (see example/definition below), further reducing visibility of the proposed turbines in large areas of the LVIA Study Area where the ZTV indicates full visibility.

Disproportionate Screening Effect

Any landscape feature that blocks a view and prevents a clear onward view has a visual screening effect, whether it is a one-metre-tall wall, a two-metre-high roadside hedgerow, a five-metre-high building, or a 15-metre tall tree. As a full visual screen, such features only allow a person to see over them, thereby pushing the person's line of sight higher into the sky rather than along the level of the ground.

The impact of screening elements such as vegetation (forestry, road-side hedgerows and trees) and buildings (particularly within towns and villages) on long range visibility are accentuated in flat lowland landscapes, this is called a disproportionate screening effect. The graphic in Figure 14-3 below best explains this 'disproportionate screening effect'. A ZTV may indicate full theoretical visibility of the proposed turbines from an open field or roadway. However, when a receptor is located at the same

base elevation as a turbine, a feature such as a distant treeline has the capacity to greatly restrict or completely obscure visibility of the proposed wind turbine. Distance becomes a substantial factor determining visibility of proposed turbines as it is difficult to see beyond a few kilometres above screening within a flat landscape.

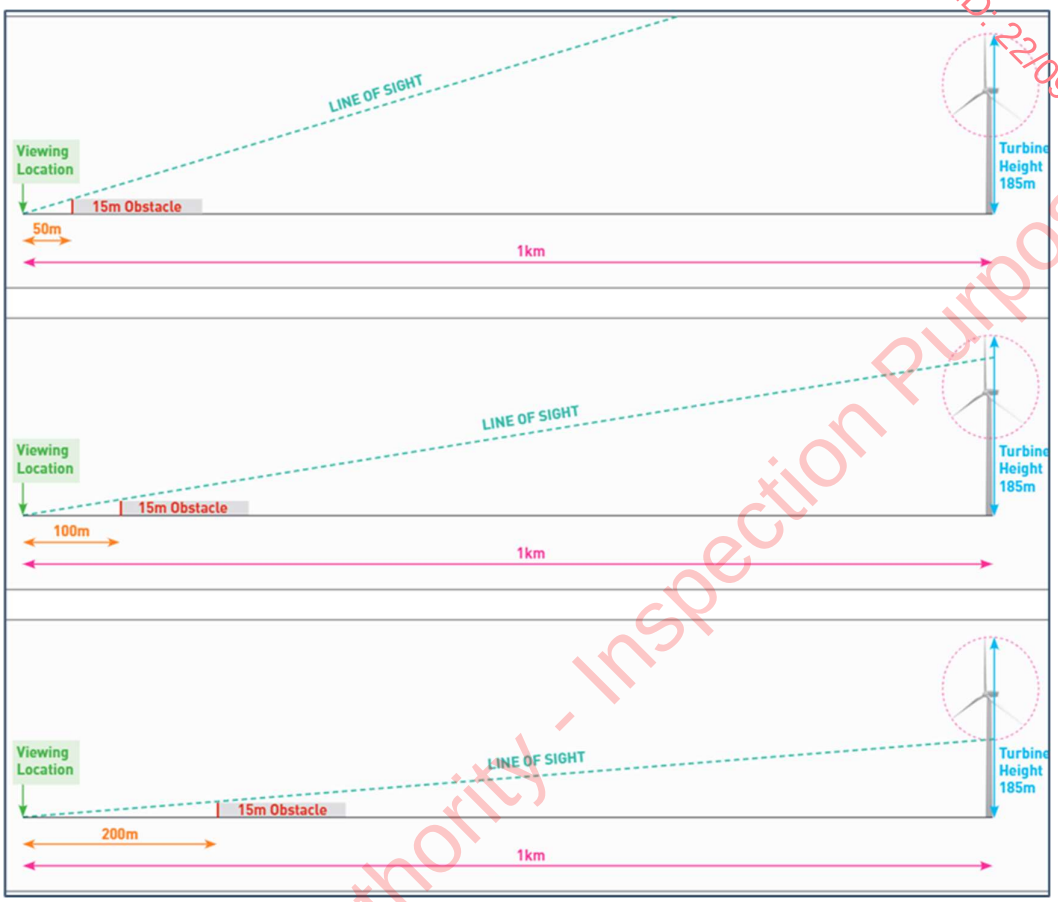

Figure 14-3 Disproportionate Screening Effect

The image above illustrates the disproportionate screening effect that small features in the landscape can have on screening a proposed wind turbine from view. Figure 14-3 shows a 185-metre-tall wind turbine located one kilometre from a viewing location. The illustration in Figure 14-3 is modelled proportionally to ensure measurement accuracy and scaled to fit this report. A 15-metre-tall obstacle, such as a treeline is used as the landscape feature giving rise to the screening effect. In the three examples shown, the 15-metre obstacle is shown at 50 metres, 100 metres and 200 metres from the viewing location, and the resultant line of sight is shown as a blue line running from the viewing location upwards over the top of the obstacle.

14.3.4 Visibility in Close Proximity to the Proposed Development Site – Route Screening Analysis

In order to comprehensively demonstrate the varying characteristics of the roads and to record the actual visibility in comparison to the theoretical visibility, a methodology was employed termed Route Screening Analysis (RSA), and this was undertaken from all roads within a three-kilometre radius of the proposed turbines. The full methodology is outlined in Section 1.3.3 of Appendix 14-1 and the categories recorded were as follows:

- Little/No Screening – mainly open and with some very light vegetation (see Plate 13-1)
- Intermittent/Partial Screening – light deciduous roadside vegetation and vegetation with short gaps which would allow intermittent or partial views (see Plate 13-2)
- Full Screening – vegetation which is dense enough to block views e.g. coniferous forestry (see Plate 13-3)

The results of the route screening survey are mapped in Figure 14-4, this figure shows the extent at which each screening classification is present on all public roads within 3 km of the proposed turbines. Where roads continued beyond 3 km from the proposed turbines, the RSA survey continued to record the screening until an appropriate termination point or junction. Screening along the N52 national road, and the R489 and R438 regional roads were recorded to a distance of 5 km as these are considered relatively prominent and well trafficked transport routes in close proximity to the site.

Plate 14-1 Example of 'Little/No Screening' in the townland of Lismacrory

Plate 14-2 Example of 'Intermittent/Partial Screening' in the townland of Walshpark

Plate 14-3 Example of 'Full Screening' in the townland of Coolderry

N52 National Road

The N52 national road passes within 1.8km of the nearest proposed turbine at its closest location, running from northeast to southwest, with an approximately 4km stretch of the road located within 3km of the nearest proposed turbine. Within 3km Little/No Screening was the dominant category recorded, with large stretches of the route also classified as having Intermittent/Partial Screening in the direction of the proposed turbines, in particular through the village of Carrig. There are also some small stretches of Full Screening along this section of the road. Between 3-5km from the nearest proposed turbine, the road is primarily classified as having Little/No Screening.

R348 Regional Road

The R438 regional road is located to the northwest of the Proposed Development and passes within 3km of the nearest proposed turbine for an approximately 2km stretch of road. Within 3km, Little/No Screening was the dominant category recorded, with some smaller patches of Intermittent/Partial Screening along this stretch also. Between 3-5km from the nearest proposed turbine, the road is primarily classified as having Intermittent/Partial Screening with longer stretches of Full Screening.

R489 Regional Road

The R489 regional road is located north of the Proposed Development, and runs in an east-west orientation, passing within 3-5km of the nearest proposed turbine. The road is classified as having a mix of roadside screening, with a large stretch of Little/No Screening along the western part of this section. Further east along the road the screening becomes a mixture of Full Screening, Intermittent/Partial Screening, and Little/No Screening, with varying screening levels as the road travels east.

Inner Perimeter Roads

There are three local roads located within 1km of the nearest proposed turbine. The first, the L5040 connects a row of residential houses located to the southwest of the site, the screening along this stretch of road is primarily classed as Little/No Screening with some small patches of Full Screening and Intermittent/Partial Screening. The second local road, the L5041, cuts through the site itself, with one large stretch of Full Screening near the eastern entrance to the site, and a mixture of Little/No Screening and Intermittent/Partial Screening along the remainder of this road. The third local road located within 1km of the nearest proposed turbine is a small local road leading to Sharragh Pig Farm, with primarily Little/No Screening along this route.

Outer Perimeter Roads

Between 1-3km from the nearest proposed turbine, the local roads to the east have a mixed class of screening, with limited instances of long stretches of Little/No Screening, meaning that views of turbines from these roads will in general be intermittent. To the south, the local road network has less screening, with two large stretches of Little/No Screening apparent. To the west, the local road network is primarily classed as having Full Screening.

Table 14-1 Distribution of Screening Recorded during Route Screening Analysis

Screening Class	Length of Road Mapped in Figure 14-4	Percentage Distribution of Screening on the Surveyed Roads
Little/No Screening	36.3 km	60%
Partial/Intermittent Screening	15.2 km	25%
Full Screening	8.5 km	15%

'Little/No Screening' was recorded for 60% of the surveyed roads and was the most common class recorded, followed by 'Partial/Intermittent' screening at 25%. The mosaic pattern of screening evident along most roads, seen in Figure 14-4, suggests that there will be intermittent visibility along most of the roads, with visibility varying along any route, offering glimpses and areas where there is open visibility, but which quickly transition into 'Partial/Intermittent' or 'Full Screening' (15%). Given that there is at least some level of screening (either 'Partial/Intermittent' or 'Full Screening') present on along the 40% of the roads that were route screened, this suggests that the widespread full theoretical visibility indicated on the ZTV is not fully representative of the actual on-the-ground visibility of the Proposed Development, given the flat nature of the LVIA Study Area.

14.4 Landscape Baseline

The Landscape Baseline reports relevant policy pertinent to the LVIA, as well a description of the receiving landscape of the Proposed Development Site and its wider setting. This is broken down into the following sections:

- **Landscape Designations and Policy Context** - Policy setting pertaining to the location and nature of the Proposed Development Site from a landscape perspective based on:
  - Tipperary County Development Plan 2022-2028
  - Galway County Development Plan 2022-2028
  - Offaly County Development Plan 2021-2027
- **Landscape Character of the Proposed Development Site** – A description of the physical landscape and characteristics of the Proposed Development Site and its immediate setting, this includes the following considerations:
  - Landscape characteristics based upon findings from site visits conducted in 2022 and 2023.
  - An appraisal of landscape value and the susceptibility of the landscape to change, and a determination of landscape sensitivity.
- **Landscape Characterisation in The Wind Energy Development Guidelines (WEDGs) for Planning Authorities** – A review of the WEDGs (DoEHLG, 2006; DoHPLG, 2019) and siting guidance relating to the landscape characteristics of the Proposed Development Site.
- **Landscape Character of the Wider Landscape Setting** – A description of the wider landscape setting, including the identification of designated Landscape Character Areas (LCAs) located within 15 km of the proposed turbines and a preliminary analysis using ZTV mapping.

14.4.1 Landscape Designations and Policy Context

This sub-section reviews the policies and objectives of various planning policy documents relating to landscape, planning and the locational siting of wind farms, as they relate to the site of the Proposed Development.

The Proposed Development is located in County Tipperary, therefore, the Tipperary County Development Plan 2022-2028 (hereafter referred to as the TCDP) was consulted to identify landscape designations existent in the LVIA Study Area. Additionally, general landscape policy and landscape policy pertaining to wind energy development are also included in this section of the LVIA, providing context for the selection of the Proposed Development Site as a landscape suitable for a wind energy development.

As demonstrated by ZTV mapping (Figure 14-1), two other counties are located in the LVIA Study Area and comprise areas with theoretical visibility of the proposed turbines. Consequently, the county development plans of Counties Galway and Offaly were also consulted to identify relevant landscape designations within the LVIA Study Area.

14.4.1.1 County Tipperary

Section 11.7 of the TCDP outlines the policy related to landscape and visual amenity within County Tipperary. The TCDP references the Landscape Character Assessment that *"has been prepared to describe, map and classify landscapes and support an understanding of their value and importance, and their capacity for change."* The Landscape Character Assessment is contained in *Volume 3* of the TCDP and identifies designated Landscape Character Areas (LCAs) as well as designated Landscape Character Types. Those which are located within the LVIA Study Area are outlined below. The TCDP contains the following relevant planning policy related to landscape:

> *"**11 - 16** Facilitate new development which integrates and respects the character, sensitivity and value of the landscape in accordance with the designations of the Landscape Character Assessment, and the schedule of Views and Scenic Routes (or any review thereof). Developments which would have a significant adverse material impact on visual amenities will not be supported.*
>
> ***11 - 17** Ensure the protection of the visual amenity, landscape quality and character of designated 'Primary' and 'Secondary' amenity areas. Developments which would have a significant adverse material impact on the visual amenities of the area will not be supported. New development shall have regard to the following:*
>
> *a) Developments should avoid visually prominent locations and be designed to use existing topography to minimise adverse visual impact on the character of primary and secondary amenity areas.*
>
> *b) Buildings and structures shall integrate with the landscape through careful use of scale, form and finishes.*
>
> *c) Existing landscape features, including trees, hedgerows and distinctive boundary treatment shall be protected and integrated into the design proposal."*

The following sub-sections address the specific elements covered by this planning policy including the designations of the landscape character assessment, the designated Views and Scenic Routes, and the Primary and Secondary Amenity Areas. *Section 11.7* of the TCDP also notes that *"certain landscapes may be significant as a result of their associations with archaeology and human influence"*, these 'archaeological landscapes' in Tipperary are further addressed below in Section 14.4.1.1.6.

14.4.1.1.1 Primary and Secondary Amenity Areas

Section 11.7.1 of the TCDP states the following in relation to Primary and Secondary Amenity Areas:

> *"Having consideration to the LCA and the overriding objectives of the Plan, the Council has designated 'Primary' and 'Secondary' amenity areas (Figure 11.1), which include, amongst others, Lough Derg and the Glen of Aherlow/Galtee Mountains. These areas are particularly notable by virtue of their scenic and visual quality and offer significant opportunities for tourism development and rural recreational activities. The Council will seek to ensure that a balance is achieved between the protection of sensitive landscapes and the appropriate socio-economic development of these areas. In this respect, development proposals will be required to demonstrate that they integrate and respect the visual quality of the amenity area."*

There is only one Primary Amenity Area within the LVIA Study Areas as shown on Figure 14-4 – *Landscape Baseline*, surrounding the shores of Lough Derg. There are no Secondary Amenity Areas within the LVIA Study Area.

14.4.1.1.2 Scenic Routes and Views

Section 11.7.2 of the TCDP states the following in relation to Scenic Routes and Views:

> *"In assessing new development, consideration will be given to ensuring that views are not obstructed or significantly altered, and that the visual impact of new development be minimised by careful design and siting. Views and routes are outlined in the LCA, Volume 3 and illustrated in Figure 11.1."*

There are no Tipperary designated scenic viewpoints located within the LVIA Study Area. The designated Scenic Routes located within the LVIA Study Area are listed below in Table 14-2 and shown on Figure 14-4 Landscape Baseline.[1]

Table 14-2 Scenic Routes in the TCDP within the LVIA Study Area

Reference (TCDP)	Description (TCDP)
V48	West of R493 Puckane to Ballinderry
V49	West of L5080 north of Ballinderry
V50	Views west of the L1091 south west of Terryglass
V51	West of the R493 north of Terryglass
V52	South on the R489 east of Lorrha
V53	Views east on the R491 Cloughjordan to Nenagh

[1] *For purposes of clarity, continuity and reference to mapping figures in this chapter; designated scenic views are labelled 'V' and scenic routes 'SR', each is prefixed by the first letter of the county in which it is located e.g., 'G' for Galway and 'O' for Offaly. The last number in each label corresponds to the label or number assigned to each designation in the respective county development plans (e.g., G-V9 = Galway - Protected View No. 9).*

14.4.1.1.3 Landscape Character Assessment

The *Landscape Character Assessment for County Tipperary* (LCAT) (Volume 3, Appendix 3 of the TCDP) identifies areas of County Tipperary within three landscape designations:

- Landscape Archetypes – Termed 'Generalised Landscape Character Areas' includes four High level landscape classifications across the county, See *Map 3.2*;
- Landscape Character Types – This designation includes seven different landscape type classifications.
- Landscape Character Areas (LCAs) – 23 No. designated LCAs defined in mind of the specific landscape characteristics which give each area a unique identity.

Landscape Archetypes and Landscape Character Types

The Proposed Development is located within the generalised landscape designation '*Landscape Archetype A – The Plains'*, which is defined as follows:

> *"These are working landscapes containing most settlements and services as well as large continuous areas used for pasture, tillage and peat harvesting. This landscape also contains major rivers and many historic sites"*

'*The Plains'* are the most common Landscape Archetype, accounting for approximately 61% of County Tipperary as shown in *Map 3.2.* of the LCAT. The landscape of '*A - the Plains'* are generally representative of the rural landscape of the Irish Midlands. *Table 5.2* of the LCAT shows that the *'The Plains'* is generally the lowest sensitivity landscape type in County Tipperary, whereas other landscape types such as the Lakelands (B), Foothills (C) and Uplands (D) are generally rated to be landscape types of much higher sensitivity. It is noted that there are no Primary Special Amenity Areas in the landscape of the Plains.

The LCAT then subdivides the landscape of The Plains into two Landscape Character Type designations:

- A1 Lowland Pasture & Arable
- A2 Peatlands & Wet Mixed Farmland

The Proposed Development is sited within lands designated as Landscape Character Type '*A2 Peatlands and Wet Mixed Farmland'* (note the compatibility of these types of land uses discussed below). In relation to this landscape character type the LCAT states:

> *"The plains also contain large areas where impeded drainage and peat formation give rise to less densely inhabited areas and more marginal agriculture..."*

These landscape characteristics were at the forefront of the site selection process for the Proposed Development. For instance, the cutover peatlands of the site are not inhabited and the marginal farmland in the wider landscape setting are less densely inhabited areas enabling adequate set back distances and less potential impacts on residential receptors compared with other more densely populated landscape types. The Landscape sensitivity classifications in *Table 5.2* generally deem the A2 Peatlands & Wet Mixed Farmland to be one of the lowest sensitivity landscape types, only more sensitive than Landscape Type A1 Lowland Pasture and Arable. It is noted that there are no Primary or Secondary Amenity Areas in the A2 Landscape Character Type.

Designated Landscape Character Areas

In line with Planning Policy 11-16 quoted above, the *Landscape Character Assessment for County Tipperary* (LCAT) designates 23 No. Landscape Character Areas (LCAs) within County Tipperary.

Three of these are located within the LVIA Study Area for the assessment of effects on landscape character (15km from the nearest proposed turbines, see Section 14.2.1 above), these are:

- LCA 7 – Borrisokane Lowlands
- LCA 10 – Upper Lough Derg
- LCA 11 – Shannon Callows

These LCAs can be seen on Figure 14-11. The Proposed Development itself is located within LCA 7 – Borrisokane Lowlands. *Table 4.1* describes this LCA as:

> *"This large, generally low lying area contains good quality pasture though there are also quite extensive pockets of tillage, largely in the southern part of this LCA. Towards the north, the landcover starts to share characteristics with the Shannon Callows LCA as well as a number of raised bogs."*

A full description of the key characteristics of LCA 7, LCA 10 and LCA 11 are included in the LCA impact assessment tables comprising Appendix 14-2.

These LCAs, and the others described in the LCAT contain a mixture of sensitivities, which are outlined in *Section 5* of that document. The LCAT reports the following:

> *"guidelines for the protection of the landscape that may be applied in the development management process. It is expected that the guidance set out in relation to landscape will assist in the assessment of planning applications and should be read in conjunction with the relevant policy and development management standards as set out in the County Development Plan (as varied)."*

14.4.1.1.4 Landscape Sensitivity Designations

Section 5.2 of the LCAT establishes six sensitivity classifications, these are reported below:

- *"Class Zero – Could be improved by change*
- *Class One – Low Sensitivity to change*
- *Class Two – Moderate Sensitivity to change*
- *Class Three – High Sensitivity to change*
- *Class Four – Special Landscape – Very low capacity for change*
- *Class Five – Unique – Change would alter the character of the landscape"*

These six sensitivity classes are assigned to each LCA in *Table 5.2* of the LCAT. In most instances, more than one sensitivity Class is assigned to each LCA, although a singular 'Dominant Sensitivity Rating' is assigned to each LCA. The Proposed Development is located in LCA 7, as shown in Figure 14-7 below, *Table 5.2* of the LCAT assigns LCA 7 as being both Class One – Low sensitivity, as well asClass Two – Moderate Sensitivity. The dominant sensitivity rating is Class 2 – which is also labelled as 'Transitional Sensitivity' in the LCAT.

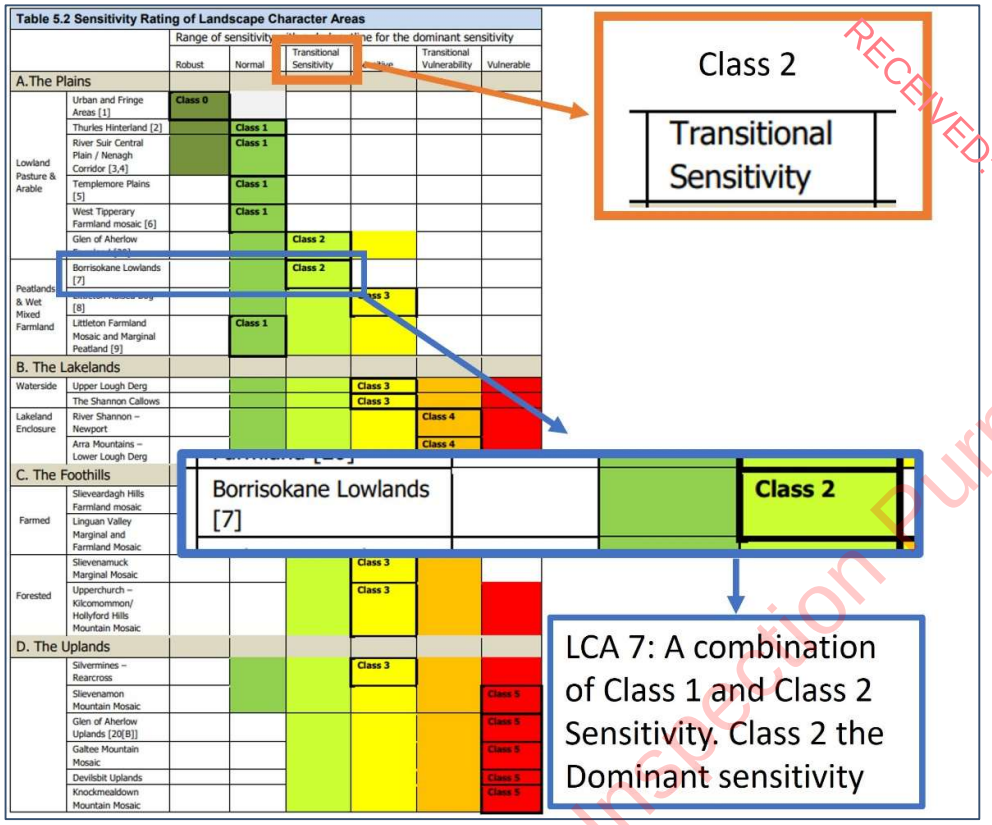

Figure 14-7 Sensitivity of LCA 7 Borrisokane Lowlands Extracted from Table 5.2 of Volume 3 of the TCDP 2022-2028.

The sensitivity classes and dominant ratings in *Table 5.2* of the LCAT show that LCA 7 is of relatively low sensitivity when compared with the other 23 No. LCAs in County Tipperary. *Table 5.2* indicates that there are 6 No. LCAs in the county with lower sensitivity ratings; 2 No. LCAs of equivalent sensitivity ratings; and, 14 LCAs of higher sensitivity rating. This landscape policy in the LCAT therefore suggests that LCA 7 is in the lowest 30%-40% percentiles of LCA sensitivity rating in the county.

In mind of this relatively low sensitivity rating for LCA 7, selection of the site as a suitable landscape for the development of wind energy was also guided by landscape policy in relation to sensitivity and Land Use. *Table 6.2* of the LCAT, which is reproduced below in Figure 14-8, shows the land-use compatibility between LCAs and land-use types. This provides generalised guidance on the likely compatibility, based on landscape sensitivity, between the LCAs and the common types of land-uses. The LCAT states, in relation to this table:

> *"'Compatibility' refers to the likelihood that a particular development has the potential to give rise to significant visual effects on the landscape [Least Compatible] versus developments that have a low potential [Most Compatible]."*

Compatibility Key	
	Most
	High
	Medium
	Low
	Least

Landscape Character Areas	Sensitivity Class	AGRICULTURE AND FORESRTY: Agriculture	Forestry	HOUSING: Rural Housing	URBANISATION: Urban Expansion	Industrial Projects	Tourism Projects	INFRASTRUCTURE: Major Powerlines	EXTRACTION: Sand & Gravel	Rock	ENERGY: Windfarm²	Solar
1.Urban and Fringe Areas	0											
2. Thurles Hinterland	1											
3. Nenagh Corridor	1											
4.River Suir Central Plain / Nenagh Corridor	1											
5. Templemore Plains	1											
6. West Tipperary Farmland mosaic	1											
7. Borrisokane Lowlands	2											
8. Littleton Raised Bog	3											
9. Littleton Farmland Mosaic and Marginal Peatland	1											
10. Upper Lough Derg	3											
11. The Shannon Callows	3											
12. River Shannon – Newport	4											
13. Arra Mountains – Lower Lough Derg	4											
14. Slieveardagh Hills Farmland mosaic	2											
15.Linguan Valley Marginal and Farmland Mosaic	2											
16. Slievenamuck Marginal Mosaic	3											
17. Upperchurch – Kilcomommon/ Hollyford Hills Mountain Mosaic	3											
18. Silvermines – Rearcross	3											
19. Slievenamon Mountain Mosaic	5											
20. Glen of Aherlow Uplands [20[B]]	5											
21. Galtee Mountain Mosaic	5											
22. Devilsbit Uplands	5											
23. Knockmealdown Mountain Mosaic	5											

Figure 14-8 Land-Use Compatibility between LCAs and Land-Use Types – Table 6.2 extracted from Volume 3, Appendix 3 of the TCDP 2022-2028

Figure 14-8 above shows there are not many LCAs in County Tipperary designated with land use compatible for wind energy development and LCA 7 is deemed to have 'Low' compatibility. *Table 6.2* of the LCAT (below) indicates that of the 23 No. LCAs in the county, only four other LCAs (8, 9, 17, 18) have a higher compatibility for wind. It is noted that these other four LCAs have higher dominant sensitivity ratings than LCA 7 (where Proposed Development is sited) in *Table 5.2*, presented in Figure 14-7 above. A spatial analysis determined that these four LCAs comprise a small portion of County Tipperary, approximately 16% of the total area. LCA 8 and LCA 9 have medium compatibility for wind energy comprise landscapes and land use types (peatlands and agriculture) very similar to that of LCA 7.

Table 6.3 of the LCAT, which is reproduced below in Figure 14-9, "*provides guidance on the likely compatibility between the Principle Landscape Sensitivity Factors and the Principle Land use types that*

are likely to occur." The figure below indicates the following compatibility of landuse types in relation to Windfarm Development:

- *"Agricultural Land with Natural Vegetation = 4 – Likely to be compatible with reasonable care;*
- *Peat Bogs = 3. Likely to be compatible if sited and designed with great care"*

The two landuse types identified above are the **most** compatible land use types for the development of wind energy as per *Table 6.3* of the LCAT. As detailed in Section 14.4.2 of this Chapter – *Landscape Character of the Proposed Development Site,* the Landuse of the site and its immediate environs is best represented by vegetated agricultural land and peat bogs. In this regard, it is considered that the development of a windfarm on the landscape of the site is aligned with the landscape policy relating to landuse in *Volume 3* of the TCDP.

KEY	LANDUSE TYPES										
5 – likely to be very compatible in most circumstances	AGRICULTURE AND FORESRTY		HOUSING	URBANISATION			INFRASTRUCTURE	EXTRACTION		ENERGY	
4 – likely to be compatible with reasonable care											
3 – likely to be compatible if sited and designed with great care											
2 – compatible only in certain circumstances											
1 – compatible only in exceptional circumstances											
0 – very unlikely to be compatible											
Proximity within 300m of Principle Landscape Sensitivity Factors	**Agriculture**	**Forestry**	**Rural Housing**	**Urban Expansion**	**Industrial Projects**	**Tourism Projects**	**Major Powerlines**	**Sand & Gravel**	**Rock**	**Windfarm**	**Solar Farm**
Major Rivers and Water bodies	5	5	2	2	2	3	2	1	0	1	0
Ridgelines	5	5	1	1	1	1	1	0	0	2	0
Broad Leaved Foresty	3	5	2	2	2	4	3	2	3	1	2
Mixed Forestry	3	5	2	2	2	4	3	2	3	1	2
Natural Grasslands	5	2	2	1	1	4	2	1	1	2	2
Moors and Heathlands	2	2	1	0	0	1	2	1	0	2	1
Agricultural Land with Natural Vegetation	5	5	2	2	2	3	3	3	3	4	2
Peat Bogs	1	1	0	0	2	3	2	2	0	3	1
Scenic View	5	5	2	1	1	5	1	3	0	0	2
Scenic Route	5	5	2	1	1	5	1	3	0	0	2

Figure 14-9 Principle Landscape Sensitivity Factors compatibility with Principle Land Use Types

Summary of Landscape Sensitivity

Review of the landscape policy reported above concludes that the Proposed Development is sited in a Landscape Archetype, Landscape Character Type and an LCA of relatively low sensitivity, particularly when compared with other types and LCAs in County Tipperary. Whilst the compatibility of LCA 7 for Windfarm development in relation to land use in *Table 6.2* is deemed to be 'low', it is considered that there are only a very small proportion of the county (LCAs comprising 16% of the area of the county) with any higher compatibility, and these areas are deemed to be of higher sensitivity in the planning policy, as outlined above. At a site level, land use of the site can be best described as a combination of

agricultural land and peat bogs, which are deemed to be the most compatible landuse types for the development of wind energy.

The WEDGs state that landscape sensitivity is the key consideration in the evaluation of areas suitable for wind energy development, and this is noted in *Section 5.2* of *Appendix 1* of the TRES (discussed further below). In general, it is preferable to site commercial wind energy developments in landscapes of lower sensitivity, as the change arising will ultimately result in a lower impact upon the landscape when appropriate siting and design are followed. Considering all of the factors summarised above, particularly the relatively low sensitivity designations of the LCA; the prevalent nature of this landscape type and landscape archetype in County Tipperary; and, the very high compatibility of the existing land use on the site to wind energy as prescribed in the policy; it is considered that selection of the Proposed Development Site as a suitable landscape for the development of wind energy is entirely appropriate in the context of the landscape policy in the LCAT.

The factors outlined in the tables and discussion above are included in the comprehensive description and assessment of LCA 7 and other LCAs screened in for assessment (see Section 14.4.4.2.1 below) in the wider landscape surrounding the proposed turbines (up to 15km), which is included in Appendix 14-2.

14.4.1.1.5 Wind Energy Strategy

Volume 3 Appendix 2 of the TCDP contains the Tipperary Renewable Energy Strategy (TRES), dated 2016. *Section 10.4* of the TCDP states that the

> *"The Renewable Energy Strategy for Tipperary will be reviewed by the Council, in collaboration with stakeholders, over the lifetime of the Plan, and will incorporate the provisions of national government as they relate to renewable energy and climate action, the Tipperary Climate Action Plan (when complete) and the Wind Energy Development Guidelines (when available)."*

Therefore, while the TRES is used in the assessment conducted in this chapter of the EIAR, it is noted that it is intended that this will be reviewed under the lifetime of the plan, although this process has not yet occurred. The TRES designates two types of areas within County Tipperary:

- Areas Unsuitable for New Wind Energy Development
- Areas Open for Consideration for New Wind Energy Development

The allocation of these designations to areas of Tipperary were developed for the North Tipperary County Development Plan 2010 and remain in place under *Map 11* of *Appendix 2* of the TRES (TCDP 2022-2028). As evidenced by *Map 11* (produced in 2010) these designations have not changed since 2010. These designations are shown in Figure 14-10 – *Wind Energy Strategy (see also Map 11* of *Appendix 2* of the TRES*)*. The Proposed Development is located within an area designated as 'Areas Unsuitable for New Wind Energy Development' which is defined as follows in the TRES:

> *"Areas 'Unsuitable for Further Development' – new wind energy development in these areas is not permitted. These areas have a special or unique landscape character where the main objective is conservation. Where there are existing wind energy developments in these areas, their repowering may be considered appropriate. Any impact on the environment must be low and subject to proper planning and sustainable development, and the guidelines set out in this strategy."*

Section 5.2 of *Appendix 1* of the TRES outlines the incorporation of landscape sensitivity as within the wind energy strategy map and notes that areas identified as 'vulnerable', 'transitional vulnerable' and 'least compatible' in the Landscape Character Assessment are automatically considered unsuitable for new wind energy development. No areas classified as 'vulnerable', 'transitional vulnerable' are located within the EIAR Site Boundary, and the Proposed Development Site is not located within an area

classed as 'Least Compatible' in the LCAT *(Table 6.2).* Also, as reported in the previous section (policy relating to Landscape Sensitivity), the LCA in which the Proposed Development is sited is a landscape of relatively low sensitivity in Co. Tipperary and the compatibility of land use on the site (peat bogs & agricultural land) is highly compatible and suitable for the development of wind, as reported *Volume 3, Appendix 3* of the TCDP. It is also noted that the Proposed Development Site is not sited in in close proximity to any designated Primary Amenity Areas or Secondary Amenity Areas in the county. In this regard the incorporation of landscape sensitivity in the TRES does not suggest the incompatibility of the Proposed Development Site by virtue of the landscape sensitivity of the site.

In addition to these designations from the LCAT, *Section 5.2* of the TRES also notes the production of a *Wind Energy Landscape Sensitivity Map, Map 4* in the TRES. This map deems areas as *"unsuitable for new wind energy development based on a quantitative assessment of the physical characteristics of the landscape." Section 5.2* goes on to list the criteria used to develop the map. These are:

- Areas with a slope greater than or equal to 15º and with an elevation higher than 200m
- Primary Amenity Areas Designation
- Landscape Character Areas considered "Vulnerable", "Transitional Vulnerable" and least compatible with wind farms
- Areas with land cover in the following categories (based on CORINE 2012 data):
  - Continuous Urban fabric
  - Discontinuous urban fabric
  - Broad-leaved forest
  - Mixed forest
  - Natural grassland
  - Moors and heaths
  - Transitional Woodland scrub
  - Inland marshes
  - Peat bogs
  - Water bodies
- Areas with soils having the following classification:
  - Acid shallow Well Drained mineral
  - Blanket Bog
  - Cutover Peat
  - Lacustrine
  - Scree

The exercise demonstrated in *Map 4* of the TRES (Wind Energy Landscape Sensitivity) has informed the wind energy policy areas. As set out further below in Section 14.4.2, the landcover of the Proposed Development Site is primarily cutover peatland, along with some areas of commercial forestry and mixed woodland. The LCAT includes in *Section 2.6* the following quote in relation to land uses driving change:

> *"**Energy – Wind Farms**: Tipperary is already one the country's leading producers of Renewables – this pattern is set to continue and is provided for in the Wind Energy Strategy that accompanies this LCA. **To date these have been concentrated in uplands and cut-over bogs**."*

As outlined below in Section 14.4.2, as well as in Chapter 3 – *Consideration of Reasonable Alternatives,* and in the Planning Justification Report appended to Chapter 2 – *Background*, the Proposed Development Site is not located within a sensitive landscape area. The infrastructure of the Proposed Development is sited on cutover peat, as well as coniferous and deciduous plantation forestry (for details on the ecological value of these areas, see Chapter 6 – *Biodiversity*). Furthermore, comparing the landscape sensitivity and windfarm compatibility designations in the LCAT with the wind energy designations included in *Map 11* of the TRES. Spatial analysis indicates substantial incompatibility between the designations. For example, LCA 17 and LCA 18, both of which are

considered the two most compatible LCAs for Windfarm land use (see Figure 14-8), have some of the largest areas of lands designated as 'Unsuitable for Further Development' in the county, including almost the entirety of LCA 18. In mind of the evident disparity and incongruity between *Map 11* of the Wind Energy Strategy (Map originally published in 2010 as shown on the map itself) and the more recent and comprehensive landscape sensitivity, and land use compatibility designations in the LCAT (*Appendix 3* of *Volume 3* of the TCDP – Content originally published in 2016 as stated on Page), it is considered that the 'Unsuitable for Further Development' designation is not necessarily an appropriate policy instrument in assessing the sensitivity of the landscape of the Proposed Development Site.

Overall, it is apparent from a review of the criteria set out in the TRES and related policy that the site of the Proposed Development is not a sensitive landscape area by virtue of the designation of the area as 'Areas Unsuitable for New Wind Energy Development'.

14.4.1.1.6 *Archaeological Landscapes*

Section 14.7.2 of the TCDP defines an archaeological landscape as a *"natural landscape that has been deliberately modified by a group (or groups) of people during a particular archaeological period (or periods)."* Further the TCDP states that *"it is an objective of the Council to carry out an audit of archaeological landscapes in Tipperary over the lifetime of the Plan."* However, it is noted that this has not been conducted at the time of writing.

No archaeological landscapes have been formally identified or designated in the TCDP. There are no National Monuments within the Proposed Development Site. A number of National Monuments are located in the surrounding landscape with the nearest (Lackeen Castle Nat. Mon. No. 378) located approx. 4km northwest from the nearest proposed turbine. In addition, Lorrha Priory (Nat Mon No. 357) is located approx. 6.9km to the west of the nearest proposed turbine. Visual effects from these monuments are discussed with the aid of photowire visuals below in Section 14.7.3.

14.4.1.2 Landscape Policy within the Other Surrounding Counties

While the Proposed Development is located in Co. Tipperary; Counties Galway and Offaly are located within the LVIA Study Area. As indicated by ZTV mapping (See Section 14.3 previously), there is some theoretical visibility of the proposed turbines in every county in the LVIA Study Area. Therefore, relevant designations pertinent to the landscape and visual impact assessment conducted in this chapter are identified and listed below from the following County Development Plans:

- Offaly County Development Plan 2021-2027 (OCDP)
- Galway County Development Plan 2022-2028 (GCDP)

14.4.1.2.1 *Landscape Character Areas – Other Counties in the LVIA Study Area*

A landscape character assessment has not yet been conducted or published for County Offaly. Consequently, County Offaly does not have any designated LCAs. Therefore, MKO has prepared Interim (undesignated) Landscape Character Areas for the area of County Offaly located within the LVIA Study Area (15 km from the proposed turbines for assessment of landscape character). The Interim LCAs are listed below and have been comprehensively described and assessed in Appendix 14-2 – *LCA Assessment Tables*. The description and sensitivity of these Interim LCAs have been derived from site visits, desk studies and assessments conducted by the MKO Landscape & Visual team (as well as being used previously for the landscape and visual assessments included for the permitted Derrinlough Wind Farm, ABP-306706-20). Sensitive landscape receptors located within County Offaly are identified later in this section and form part of this LVIA. The Interim LCAs within the LVIA Study Area are:

- Interim Offaly LCA 1 – Birr Plains
- Interim Offaly LCA 2 – Slieve Bloom Upland Area

- Interim Offaly LCA 3 – Central Wetlands
- Interim Offaly LCA 4 – River Shannon and Callows

The *County Galway Landscape Character Assessment* is contained in *Appendix 4* of the GCDP. The Landscape Character Assessment designates three Landscape Character Units (LCUs) in County Galway within the LVIA Study Area with descriptions given for each. These are shown in Figure 14-11 and are listed below.

- Galway LCU 4c – Lough Derg Environs
- Galway LCU 6d – Kilcrow Basin
- Galway LCU 8a – Shannon Environs

Section 8.13.2 of the GCDP states that a *"landscape's capacity to absorb new development, without exhibiting a significant alteration of character or change of appearance is referred to as it's 'sensitivity'. This depends on factors such as elevation, slope, as well as the types of land-cover and soil."* The Landscape Character Assessment contained in *Appendix 4* of the GCDP defines classifies the LCUs according to the following classifications:

- Iconic: Unique Landscape with high sensitivity to change
- Special: High sensitivity to change
- High: Elevated sensitivity to change
- Low: Unlikely to be adversely affected by change

These sensitivity classifications are taken into account in the assessment of effects on landscape character contained within Appendix 14-2. The relevant policies related to the protection of landscape character contained within the GCDP are set out below:

> *"**LCM1 Preservation of Landscape Character** - Preserve and enhance the character of the landscape where, and to the extent that, in the opinion of the Planning Authority, the proper planning and sustainable development of the area requires it, including the preservation and enhancement, where possible of views and prospects and the amenities of places and features of natural beauty or interest.*
>
> ***LCM 2 Landscape Sensitivity Classification** - The Planning Authority shall have regard to the landscape sensitivity classification of sites in the consideration of any significant development proposals and, where necessary, require a Landscape/Visual Impact Assessment to accompany such proposals. This shall be balanced against the need to develop key strategic infrastructure to meet the strategic aims of the plan.*
>
> ***Objective LCM 3 Landscape Sensitivity Ratings** - Consideration of Landscape Sensitivity Ratings shall be an important factor in determining development uses in areas of the County. In areas of high landscape sensitivity, the design and the choice of location of proposed development in the landscape will also be critical considerations."*

14.4.1.2.2 Other Sensitive Landscape Designations – County Offaly

The 2021-2027 Offaly County Development Plan (OCDP) classifies 'Areas of High Amenity' as areas with scenic and amenity value worthy of special protection. Thirteen are listed and shown on *Figure 4.18* of the OCDP. Those located within the LVIA Study Area are listed below in Table 14-3 and are shown on Figure 14-5.

Table 14-3 Areas of High Amenity in the LVIA Study Area

Name	Distance and Direction from the Nearest Proposed Turbine
River Shannon and Callows	11.7km northwest
Slieve Bloom Mountains	13.4km east
Lough Boora Discovery Park	15.6km northeast
Grand Canal	17.4km northeast
Other Eskers	7.1km northeast (nearest esker)

A preliminary assessment was conducted using ZTV mapping to determine likely visibility of the proposed turbines from these Areas of High Amenity, which is presented below in Section 14.4.4.3. Sensitive landscape receptors screened in for further assessment were then considered for the selection of photomontage viewpoints.

14.4.1.2.3 Designated Scenic Amenity – Counties Offaly and Galway

Counties Offaly and Galway protect scenic amenity within their respective counties through the designation of scenic views, prospects and scenic routes. Both counties have differing naming conventions and policy objectives pertaining to their respective designations. In a general sense, it is a policy objective for each county to take additional care in the protection of the unique and valuable scenic views which fall within the following designations:

- County Offaly – Scenic Views and Scenic Routes (Key Amenity Routes).
- County Galway – Protected Views and Scenic Routes.

Designated scenic amenity and views from these counties are mapped in the Landscape Baseline map (Figure 14-6) and listed in Table 14-4 below.

**For purposes of clarity, continuity and reference to mapping figures in this chapter; designated scenic views are labelled 'V' and scenic routes 'SR', each is prefixed by the first letter of the county in which it is located e.g., 'G' for Galway and 'O' for Offaly. The last number in each label corresponds to the label or number assigned to each designation in the respective county development plans (e.g., G-V9 = Galway - Protected View No. 9).*

Table 14-4 Scenic Views, Protected Views, Scenic Routes, and Key Amenity Routes in the LVIA Study Area

Development Plan Reference No.	Description (from respective County Development Plan)	Map Reference
County Offaly		
V05	View from N52 in the townlands of Heath, Bunaterin, Derrydolney, Ballywilliam, Curraghmore, Ballynacard, Bally na Curra. View to Slieve Bloom Mountains.	O-V5
V06	View to R356 and Road No. L-07014 in the townlands of Cushcallow, Park, Mullaghakeeraun and Curralahan. View to River Shannon and bog lands	O-V6
V12	View from Road No. L-07009 in the townland of Stonestown. View over bog lands and Slieve Bloom Mountains	O-V12
V13	Road No. L-03012 in the townlands of Glaster, Ballynasrah, Newtown, Kilmochonna. View over Over Little Brosna and Callows.	O-V13
V14	View from R440 in the townlands of Kyle, Cloghanmore, Streamstown, Ballinree, Killaun. View towards Slieve Bloom Mountains.	O-V14
V15	View from Road No. L-04006 in the townland of Knock. View to Slieve Bloom Mountains, Leap Castle.	O-V15
V16	View from Road No. L-04025 in the townlands of Clonee, Cumber Lower. View westward over farmland.	O-V16
V18	View from Road No. L-08008 in the townlands of Grange, Belhill, Longford Big and Church Land. Views towards Seir Keiran Monastic Site.	O-V18
Key Amenity Route - R440 Kinnitty to Ballard.	This route provides an attractive drive within the open countryside to the attractions of the Slieve Bloom Mountains and around the foothills of the mountains themselves.	O-SR R440
Key Amenity Route - R357 Blueball to Shannonbridge.	This route links the N52 at Blueball to Shannonbridge. It passes through esker landscape, peatlands, undulating agricultural lands, Lough Boora Discovery Park and the Callows area of the River Shannon in particular.	O-SR R357
County Galway		
PV44 Rossmore Pier	This view is from the pier. The focus of this view is Lough Derg. The wooded shores and small islets are important features of this view. Significance: County	G-V44
PV47 Portumna Church Spires	This view is from the highest point on Saint Joseph's Road as it enters Portumna. The focus of this view are the two church spires. Significance: Local	G-V47

Development Plan Reference No.	Description (from respective County Development Plan)	Map Reference
PV48 Portumna Castle Harbour	This view is from the carpark, marina and picnic area. The focus of this view is Lough Derg and the reed banks. The wooded shores in the background are an important feature of the view. Significance: County	G-V48
PV49 Lough Derg Water Recreation Park	This view is from the carpark, shore walk and picnic areas. The focus of this view is Lough Derg and the reed banks. The wooded shores in the background are an important feature of the view. Significance: County	G-V49
PV51 Meelick Quay	This view is from Meelick Quay picnic and parking area. The focus of this view is the River Shannon and the Incherky in the background. The old battery (covered in trees) is an important feature of this view. Significance: County	G-V51
PV52 Shannon bank from Banagher Bridge entering Galway.	This view is from the middle of the Banagher bridge. The focus of this view is the Shannon River, Banager Park and the Castle ruins. Significance: County	G-V52

As the scenic amenity designations listed in Table 14-3 (above) are of a visual nature, they are comprehensively addressed in Section 14.5 of this Chapter – *Visual Baseline*, where ZTV mapping and on-site appraisals determine the likely visibility of the proposed turbines within these scenic views or from scenic routes.

14.4.2 Landscape Character of the Proposed Development Site

Landscape character refers to the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how people perceive this. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement, and creates the particular sense of place found in different areas. The identification of landscape character as outlined in the Landscape and Landscape Assessment Guidelines (DoEHLG, 2000) comprises the identification of primarily physical units (areas defined by landform and landcover) and, where appropriate, of visual units.

The Proposed Development Site was visited multiple times during 2022 and 2023 where an assessment of topography, drainage, landcover and land use was conducted in conjunction with other LVIA surveys. Information gathered during these visits have informed the following descriptions of the Proposed Development Site. The landscape character of the grid connection is discussed at the end of this section.

Figure 14-13 Aerial view of the Proposed Development Site

Landform and Drainage

The Proposed Development Site is located on flat cutover peat and agricultural land with the turbines sited on lands ranging between 57.5m and 61m above ordnance datum (AOD). The Proposed Development Site can generally be said to be sited at a lower level of elevation than the adjacent lands to the west, east and south. In terms of drainage Figure 14-14 below shows the course of the Little Brosna watercourse, which drains the cutover bogland that the site is predominantly located on.

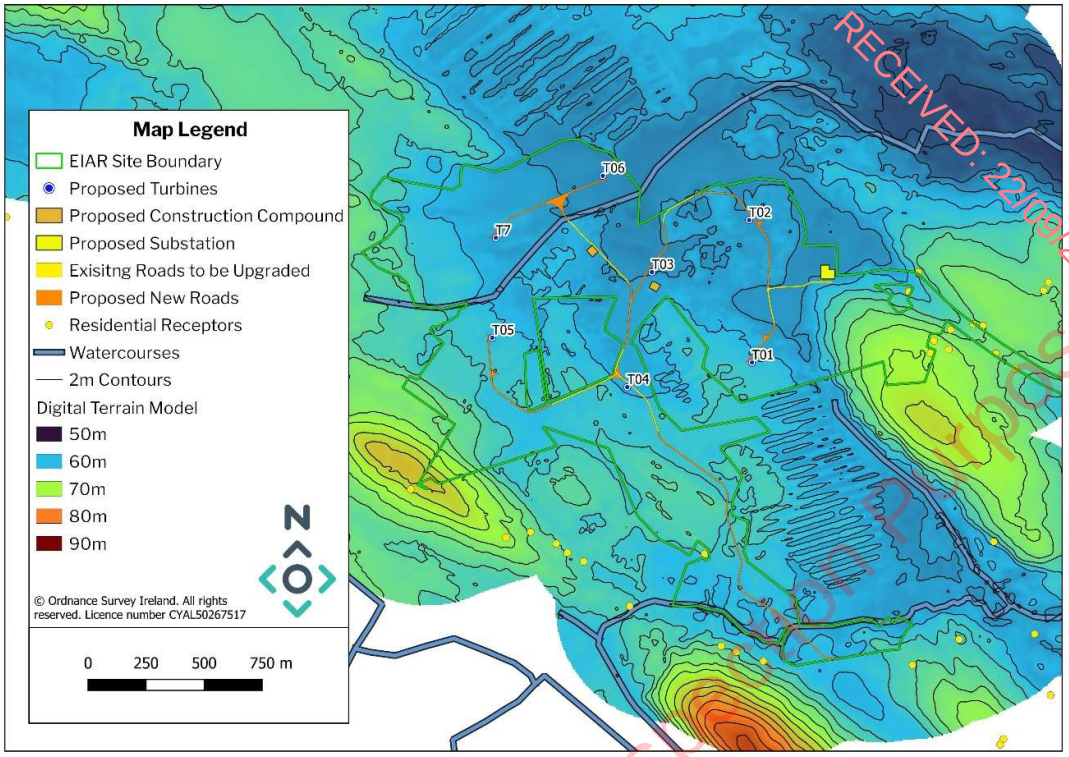

Figure 14-14 Topography of the Proposed Development Site

Landcover and Land Use

The landcover at the Proposed Development Site is predominantly a working landscape of grassland, cutover peat, and commercial forestry. The site is currently used primarily for agriculture and commercial forestry activities, with large scale historic peat extraction having heavily influenced the current landcover.

Plate 14-4 View to the west over an agricultural field, in which turbine T4 is proposed.

The south-western extent of the site is primarily comprised of agricultural land, such as that shown in Plate 14-4 above, where a flat field is seen bordered by a tract of commercial forestry (located to the west of the field). Plate 14-5, Plate 14-6, and Plate 14-7 below show views over the cutover bog and tracks of forestry that comprises the majority of the landcover where the proposed turbines are located. All three images have background views of commercial forestry (in the case of Plate 14-5 and Plate 14-7) and mixed coniferous and deciduous forestry (in the case of Plate 14-6), which is typical of views within the Proposed Development Site where visibility is contained by the surrounding strands of forestry.

Plate 14-5 View to the south-east from the location of the proposed Construction Compound.

Plate 14-6 View to the east, towards cutover bog, photo location is adjacent to turbine T3.

Plate 14-7 View to the west over cutover bog towards two tracts of commercial forestry, from a location 250m south-east of turbine T3.

Historic Landscape Character and Landscape Evolution

As noted previously, *Section 14.7.2* of TCDP states the following in relation to archaeological landscapes:

'An archaeological landscape is a natural landscape that has been deliberately modified by a group (or groups) of people during a particular archaeological period (or periods). It provides context and meaning to individual archaeological sites and helps us to understand how our ancestors lived. Such landscapes have the potential to be of cultural, economic, social and/or environmental value. International best practice, as outlined in the European Convention on the Protection of Archaeological Heritage (Valetta Convention) 1992 and the European Landscape Convention (Florence Convention) 2000 supports a landscape-based approach to archaeological protection. It is an objective of the Council to carry out an audit of archaeological landscapes in Tipperary over the lifetime of the Plan.'

No archaeological landscapes have been formally identified or designated in the CDP. A comprehensive description and assessment of cultural heritage monuments existent within the Proposed Development Site Boundary and in the wider landscape is included in Chapter 13 of this EIAR – *Cultural Heritage*. As detailed in that chapter, two recorded monuments (TN008-002— well) and TN005-025— enclosure) are located within the Proposed Development Site. The well is situated c. 117m south-east of T4 and c. 33m east of an existing road due for upgrade. The enclosure TN005-025— is situated c. 129m north of T3 and c. 24m west of the proposed new road between T3 and T2. No Protected Structures subject to statutory protection are located within the Proposed Wind Farm Site. No structures listed in the NIAH are located within the Proposed Development Site. A ruinous rectangular structure (CH1) which is indicated on both editions of the historic OS mapping was noted within the Proposed Wind Farm Site during field inspection. It is located immediately adjacent to the proposed access road which will extend from the proposed site entrance in a north-westerly direction towards T4. It is not included in the NIAH or Record of Protected Structures and is regarded as a feature of local cultural heritage merit, most likely dating to the early-mid 19th century.

Views within the Proposed Development Site

Views within the Proposed Development Site itself are largely contained by the forestry present on the site. From the L5041 local road that bisects the site there are views of cutover peat contained with tracts of commercial forestry in the background, as shown by Plate 14-4 to Plate 14-7 above. These views are common throughout the local area within 5km of the site with historic peat extraction and commercial forestry common land-use activities on and surrounding the site. There is some aesthetic value to these views given the lack of buildings and other infrastructure present in views, although it is noted that the landscape of the site has clearly been subject to substantial levels of human interference and modification.

Landscape Character and Setting of the Grid Connection and Proposed Substation

The landcover at the site of the proposed onsite substation is shown below in Plate 14-8, where a dense tract of dead ash plantation can be seen to limit external visibility substantially, these trees will be felled as part of the construction of the proposed substation. The substation is located near the eastern edge of the site approximately 365m south-east of the turbine T2. Visibility of the substation from receptors on this local road is expected to be limited as a result of the screening from the surrounding trees. The only views towards the proposed substation will occur from an approximately 200m stretch of the local road leading into the site, shown in Plate 14-8 below.

Plate 14-8 View to the west from the location of the proposed on-site substation.

The proposed Grid Connection route travels from this proposed substation location via a 33kV underground electrical cable connection to the existing 110 kV Dallow substation in near Birr, Co. Offaly. The underground electrical cabling route is approximately 13.7km in length to Dallow and is located primarily within the public road corridor.

The underground electrical cabling route will originate at the proposed onsite substation and run southeast for 0.2km along the L5041 local road. The underground electrical cabling route joins the N52

national road heading northeast through the village of Carrig and continues along the N52 for 2.6km. The cable turns onto the L9520 and runs for the entirety of the road (c.418m). The cable north onto the L1071 and continues northwards for 1.3km where it rejoins the N52. The cable travels along the N52 for 230m before turning northwest and travelling along the R489 regional road for approximately 1.2km. At Killeen National School, the cable route heads north on the L5045. At the northern end of the L5045, the route turns east onto the L1077 in the townland of Croghan, where it crosses over the Little Bronsa River and into Co. Offaly. The total length of the grid connection route located in Co. Tipperary measures approximately 10.4km.

The cable travels along the L1077, within Co. Offaly, for 360m. At the eastern end of the L1077 in the townland of Townparks, the cable continues north onto the R439 for approximately 2.4km. In the townland of Clondallow, the cable continues west onto the L70152 for approximately 600m where it enters the Dallow substation property and continues onto the access road leading to the 110kV Dallow substation (see Section 4.3.6.4 of Chapter 4 for further details).

As the underground electrical cabling route follows the existing road network, the EIAR Site Boundary along the route does not include any other sensitive landscape receptors or do these roads comprise designated scenic routes or designated scenic views. As the grid connection cabling is underground infrastructure, this will mitigate the potential for significant adverse landscape and visual effects once the infrastructure is installed. The full underground electrical cabling route and its associated construction methodology is detailed within Chapter 4 of this EIAR and an assessment of landscape and visual effects during the construction and operational phase of the Proposed Development is included later in this chapter.

14.4.2.2 Landscape Value and Sensitivity of the Proposed Development Site

Landscape Values were assessed in order to determine the landscape sensitivity of the Proposed Development site as well as the wider landscape setting and establish the capacity of the immediate landscape in which the Proposed Development will be built, as it is prescribed by best practise guidance *"as part of the baseline description the value of the potentially affected landscape should be established"* (Page 80, GLVIA 3, 2013). Comprehension of the landscape value and its susceptibility to change enables determination of the sensitivity of the landscape at a micro level (the development site) and its capacity to absorb the infrastructure of a wind farm development.

Determination of landscape value takes into consideration the scenic amenity designations, the sensitivity and value designations found in the local landscape policy as well as other indications of landscape value attached to undesignated landscapes. Table 14-5 below describes various factors that aid in identifying landscape value. These factors and indicators were appraised collectively to determine a landscape value for the Proposed Development Site. The Landscape value and susceptibility to change were then considered in forming a landscape sensitivity classification of either **Low, Moderate, High** or **Very High** for the Proposed Development Site.

Table 14-5 Indicators of Landscape Value

Indicator	Description
Landscape Designations	There are no Co. Tipperary Primary or Secondary Amenity Areas located within the EIAR Site Boundary itself, with only one located within the LVIA Study Area - Lough Derg, located approximately 6.7km from the nearest proposed turbine at its closest point. The Proposed Development Site is located within LCA 7 of County Tipperary - Borrisokane Lowlands. This LCA is given a *"Dominant Sensitivity Rating"* of Class 2 – Transitional Sensitivity in the Tipperary Landscape Character Assessment (LCAT), the third lowest of six sensitivity classes in assigned to LCAs within County Tipperary. This sensitivity is described as *"having moderate sensitivity to change"* and the objective for this type of sensitivity in the LCAT is as follows: *"Facilitate development that with capacity to continue and enhance established patterns of use and settlement without significant change to appearance or character having a moderate sensitivity to change."* In relation to land-use compatibility outlined in *Table 6.2* of the LCAT, this LCA is classified as having Low compatibility with windfarm land use, which is the second lowest out of four compatibility classifications assigned to an LCA in the LCAT. However, in relation to land use types, the Proposed Development is primarily located on cutover peat bog and agricultural land, which are assigned the following compatibility ratings in *Table 6.3* of the LCAT: Peat Bogs – 3rd highest out of 6 classes – *"likely to be compatible if sited and designed with great care."* Agricultural Land with Natural Vegetation – 2nd highest out of 6 classes – *"likely to be compatible with reasonable care."* Appendix 14-2 classifies this LCA as having a Medium sensitivity to wind farm development in consideration of these factors. As noted above, in Section 14.4.1.1.4, the Proposed Development Site is located within an area designated as 'Areas Unsuitable for New Wind Energy Development'. However, as discussed previously in that section, it is apparent from a review of the TRES and related policy that the site of the Proposed Development is not a sensitive landscape area by virtue of the designation of the area as 'Areas Unsuitable for New Wind Energy Development'. There are no designated views or scenic routes located on the Proposed Development Site. The closest designated view is scenic route V52 (Map ref T – SR52) in the TCDP, located approximately 3.7km northwest of the nearest proposed turbine.
Landscape Elements Quality / Condition	This refers to the physical state of the landscape and the condition of each individual elements. Due to its nature as a cutover peatland site with plantation forestry, the site is a modified working landscape. The condition of the landscape is degraded in several locations within the site due to the forestry operations and historic peat extraction.

Indicator	Description
Scenic / Aesthetic Qualities	The Proposed Development Site has some rural aesthetic qualities given the lack of buildings and infrastructure present on the site, however, these views are common throughout the local area within 5km of the site with historic peat extraction and commercial forestry as common land-use activities on and surrounding the site, and it is noted that the landscape of the site has clearly been subject to substantial levels of human interference and modification. Views from within the site are generally limited by the tracts of forestry, created a sense of enclosure within the site itself.
Rarity or Conservation Interests	There are no designated areas of conservation within the EIAR Site Boundary. Peatlands occurring within the site comprise mainly of Cutover bog (PB4). Historic and recent peat extraction has been undertaken within the majority of peatland within the EIAR Site Boundary. Therefore, those peatland habitats within the site have been assessed as Cutover bog (PB4). Grasslands within the south of the site are classified as Improved agricultural grasslands (GA1) and are species poor. Small areas of Dry meadows and grassy verges were recorded between blocks of plantation forestry or along site tracks and riverbanks. Bog woodland (WN7) habitat occurs in patches throughout the site but is found in the northeast of the site mainly. This habitat is associated with cutover bog habitat and occurs onsite adjacent to cutover bog and scrub habitat. No areas of Annex I Bog Woodland were identified within the Proposed Development Site. Areas within the Proposed Development Site comprise different stages of coniferous plantation forestry including recent clear-fell, second rotation, immature, semi-mature and mature forestry. The species comprises of Sitka spruce (*Picea sitchensis).* Within the southern and western areas of the Proposed Development Site, Broadleaved Woodland (WD1) occurs onsite adjacent to commercial plantations. In addition, a commercial Ash plantation categorised as WD1 occurs in the footprint of the proposed substation. A number of watercourses were identified within the site and correspond to eroding/ upland rivers (FW1). Watercourses were mainly comprised of small streams - Faddan Beg flowing through the north of the site, and Holy Well Clohaskin flowing through the south of the site. There are also numerous drainage ditches throughout the study area, associated with conifer plantations and cutover bog. For further detailed discussion on rarity of conservation interests on site see Chapter 6 – *Biodiversity*.
Wildness / Naturalness	The Proposed Development Site is a mixture of agricultural land, cutover peat, and commercial forestry, and so it is considered to be a landscape highly modified by human interference. The site is relatively undeveloped in terms of buildings and other infrastructure, therefore there is a degree of wildness considering the setback from human settlement, although it is notable that transport infrastructure passes through the site.
Recreational Value	The Proposed Development Site comprises privately owned land and is not used for any public recreational activities.

Indicator	Description
Cultural Meaning / Associations	As detailed in Chapter 13 – Cultural Heritage, two recorded monuments (TN008-002— well) and TN005-025— enclosure) are located within the Proposed Development Site. The well is situated c. 117m south-east of T4 and c. 33m east of an existing road due for upgrade. The enclosure TN005-025— is situated c. 129m north of T3 and c. 24m west of the proposed new road between T3 and T2. No Protected Structures subject to statutory protection are located within the Proposed Wind Farm Site. No structures listed in the NIAH are located within the Proposed Wind Farm Site. A ruinous rectangular structure (CH1) which is indicated on both editions of the historic OS mapping was noted within the Proposed Wind Farm Site during field inspection. It is located immediately adjacent to the proposed access road which will extend from the proposed site entrance in a north-westerly direction towards T4. It is not included in the NIAH or Record of Protected Structures and is regarded as a feature of local cultural heritage merit, most likely dating to the early-mid 19th century.

In consideration of the factors detailed in Table 14-5 above, the landscape value of the Proposed Development Site is deemed **Low**. The Proposed Development Site is predominantly located within an area of low scenic amenity and minimal aesthetic qualities due to the presence of cutover peat and commercial forestry. In relation to landuse types, cutover peat and agricultural land are assigned the following compatibility ratings in *Table 6.3* of the LCAT: Peat Bogs – 3rd highest out of 6 classes, and Agricultural Land with Natural Vegetation – 2nd highest out of 6 classes. It is also noted that the Proposed Development Site is located within an area designated as 'Areas Unsuitable for New Wind Energy Development'. However, as discussed it is apparent from a review of the zoning criteria set out in the TRES and related policy that the site of the Proposed Development is not necessarily a sensitive landscape area by virtue of the designation of the area as 'Areas Unsuitable for New Wind Energy Development'. The Proposed Site is not located within a Co. Tipperary Primary or Secondary Amenity Areas. In consideration of these factors the susceptibility of the site to the proposed change is considered **Medium**. On balance, the landscape sensitivity of the Proposed Development is deemed **Low**.

14.4.3 Landscape Characterisation in the Wind Energy Development Guidelines For Planning Authorities (DoEHLG, 2006) (and with reference to the draft Guidelines (DoHPLG, 2019))

The following section considers the WEDGs (DoEHLG, 2006) and is cognisant of the draft WEDG's (DoHPLG, 2019). These guidelines offer guidance for the siting and design of wind energy developments in various landscape contexts by defining six landscape character types that represent most situations where wind turbines may be proposed. The guidance is intended to be indicative and general and notes that it represents the 'best fit' solutions to likely situations. The six landscape character types are 'Mountain Moorland', 'Hilly and Flat Farmland', 'Flat Peatland', Transitional Marginal Land', 'Urban/industrial' and 'Coastal' landscape character types. The guidelines note that where a wind energy development is located in one landscape character type but is visible from another, it will be necessary to decide which might more strongly influence the approach adopted for the assessment. In this regard it is evident from the Photomontage booklet (Volume 2) and other imagery present in this chapter, that the proposed turbines are often seen within views of an agricultural farmland landscape, which is best described as 'Hilly and Flat Farmland'. However, in consideration of Tipperary County Council landscape designations and site visits conducted by the MKO Landscape and Visual team, the physical characteristics of the Proposed Development Site is best described by

'Flat Peatland' landscape character type and all turbines except T4 (which is located within an agricultural field adjacent to the area of cutover bog) are sited within flat cutover peatlands and areas of commercial forestry planted on the cutover peatland. Therefore, the best practice siting and design strategies prescribed for Flat Peatland Landscape Type (DoEHLG, 2006) were implemented for the Proposed Development.

14.4.3.1 Flat Peatland

The key characteristics of Flat Peatland landscape type as stated in the WEDG's (DoEHLG, 2006 & DoHPLG, 2019) are:

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

The siting and design guidance given for 'Flat Peatland' landscape in the DoEHLG WEDGs (2006) and DoHPLG draft WEDGs (2019) is set out below:

Location

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

In terms of **location,** site selection was at the forefront of the Proposed Development design. At a project level, siting of the infrastructure (including turbines) of the Proposed Development at its current site has resulted in sufficient distance from the greatest number of receptors within the nearby area. In addition, siting of proposed turbines at low elevation within the LVIA Study Area is highly beneficial in terms of reducing the geographical extent of visibility and visual exposure (and visual effects) from many visual receptors in the wider landscape. In terms of separation distances, the proposed turbines are set back a reasonable distance from dwellings, adhering to the recommended 4 x tip height set-back distance from the draft WEDGs (DoHPLG, 2019). Also, siting the turbines on a plain of lower lying land relative to residential receptors in the surrounding landscape reduces the potential for dominant or overbearing effects – as is comprehensively discussed in Section 14.7.3.3.4 of this Chapter.

Spatial Extent

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

In terms of **spatial extent**, the iterative design process has resulted in a layout that occupies a limited horizontal extent within views even in the large-scale landscape of the Proposed Development Site. The Proposed Development adheres to the mandatory four times tip height set back distance from residential buildings prescribed in the draft WEDGs (DoHPLG, 2019), as well as the 500-metre set back distance noted in the current WEDGs (DoEHLG, 2006).

Spacing

> *"Regular spacing is generally preferred, especially in areas of mechanically harvested peat ridge"*

In terms of **spatial extent**, the proposed turbines are viewed as within a visual unit defined by the surrounding tracts of forestry on the site itself, and are sited at regular, evenly spaced locations in a clustered layout. The turbines are predominantly sited on cutover peat or within tracts of commercial forestry (with the exception of T4). As the turbines are viewed as within this area of forestry from locations outside of the site itself, it is considered that the spacing of the turbines responds appropriately to the landcover of the site.

Layout

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

In terms of **layout**, the proposed turbines are arranged in a clustered grid layout, forming approximate grid lines in relation to each other. As noted above, this layout reduces the horizontal extent of the turbines within many views and provides a sense of order corresponding to the surrounding field pattern when viewed from outside of the site.

Height

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

In terms of **height**, the turbines appear as large vertical objects within the landscape. The development as whole retains a relatively even profile. When viewing the turbines, the nacelles are positioned at a relatively even heights, improving visual coherence when viewed from areas within the wider landscape area.

Cumulative Effect

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

In terms of **cumulative effect**, wind energy developments do not visually dominate the area. There are instances where the proposed turbines will be viewed in the landscape in combination and in succession with other wind energy developments (see further discussion below in Section 14.7.3.4). however, in general this will be limited by the hedgerows and other vegetation common throughout the surrounding landscape, making such views intermittent.

14.4.4 Landscape Character of the Wider Landscape Setting

Landscape character refers to the distinct, recognisable, and consistent pattern of elements that occur in a particular landscape and how it is perceived. The landscape surrounding the site is a working agricultural landscape. Boglands and agricultural fields dominate the landscape with areas of mixed woodland containing coniferous and deciduous trees. It is a settled landscape with clusters of residential dwellings arranged in linear pattern along the local roads within the area. The topography to the north, west, and south is generally flat and highly vegetated. The field boundaries formed by hedgerows predominate throughout views and generally restrict visibility to medium ranges. Surrounding the site to the north, west and east are a collection of cutover peat bogs, including Killeen Bog to the east and Arragh More Bog to the west. These peatlands occupy a large part of the landscape within 5km of the site, reducing the number of the sensitive visual receptors within this area where the Proposed Development will have the greatest visibility.

Plate 14-9 View to the east from within the townland of Lissernane, 2km north of the nearest proposed turbine (T7)

Plate 14-10 View southwest from an elevated location on the outskirts of Birr

Birr and Roscrea (east of the site) and Borrisokane and Portumna (west of the site) are the largest settlements in the LVIA Study Area, connected by a network of national roads. The road network also connects a number of smaller rural settlements in this working settled landscape. Within 5km of the proposed turbines, the rural village of Carrig is the main settlement, located approx. 2.3km from the nearest proposed turbine along the N52 national road. In addition to the national road, a network of regional roads including the R499, the R489, and the R438, is located to the north and west of the site.

Plate 14-11 View to the west from Naylor's Hill, forming part of the foothills of the Slieve Bloom Mountains

Lough Derg and the River Shannon to the west and the Slieve Bloom mountains to the east (note only the foothills of the Slieve Bloom mountains fall within the LVIA Study Area) are the defining landscape features of the area, providing the primary recreational and amenity value within the wider landscape setting of the Proposed Development Site. The Proposed Development Site itself sits within a flat plain located between these two landscape features. The area is relatively flat with gentle undulating slopes. The topography raises dramatically approximately 20km east of the Proposed Development Site where the Slieve Bloom Mountain range is located. There are numerous river bodies and streams located within the wider landscape setting, including the River Shannon which extends north east from Lough Derg, forming the border between Counties Galway and Tipperary, as well as between Galway and Offaly. The majority of these river bodies drain into Lough Derg.

Plate 14-12 View east over Lough Derg from the Portumna Swimming and Recreation Area

There is an area of elevation approximately 4.5km to the southeast of the site, rising to form a ridgeline that includes Knockshigowna, and which extends to the southern border of the LVIA Study Area. As outlined below in Section 14.6 – Cumulative Context, two existing wind farms are located at the northernmost extent of this ridgeline, on the opposite side of the N52 as the Proposed Development Site. Beyond 10km to the northeast of the site, within County Offaly, lies a relatively large area of wind farm development, situated on and around a series of cutover bogs. This area lies at similar elevation to the Proposed Development Site, with a flat intervening landscape.

Plate 14-13 View south towards the Skehanagh Wind Farm and the elevated ridgeline that ultimately extends to the southern border of the LVIA Study Area.

14.4.4.1 Historic Landscape Character

As detailed in full in Chapter 13 – Cultural Heritage, no UNESCO World Heritage Sites (WHS) of those on the Tentative list are located within 20km of the nearest proposed turbine. A total of one hundred and thirty-six (136) recorded monuments are located within 5km of the nearest proposed turbine. Thirty-six (36) protected structures are located within 5km of the nearest proposed turbine at distances ranging between c. 1.9km and 4.9km. The nearest structures comprise Oak Park house (TRPS121) which is located c. 1.9km from T1 and the ruins of Derrylahan Park house (TRPS399) which is situated c. 2.2km from T6. Twenty-one structures listed in the NIAH are located within 5km of the nearest proposed turbine. These structures are located at distances ranging between 2.3km and 4.9km from the nearest proposed turbine. Similarly, eighteen historic gardens are located within 5km of the nearest proposed turbine at distances ranging between 1.4km and 4.7km.

Lackeen Castle and the Lorrha Priory are two National Monuments located within 10km of the Proposed Development Site, shown below in Plate 14-14 and Plate 14-15.

Plate 14-14 Lackeen Castle

Plate 14-15 View east from Lorrha Priory

Effects on these cultural heritage features are discussed fully in Chapter 13 – *Cultural Heritage*. Visual effects related to visitors to these sites are discussed further below in this chapter.

14.4.4.2 Designated Landscape Character Areas (LCAs)

As noted in Section 14.2.1, the LVIA Study Area for assessment of landscape character extends to 15 km from the proposed turbines. In the previous section - *Landscape Designations and Policy Context*, 10 No. designated LCAs were identified within 15 km of the proposed turbines, in Counties Tipperary, Offaly, and Galway.

14.4.4.2.1 *LCA Preliminary Assessment*

A map showing all LCAs within 15km and the distribution of theoretical visibility of the proposed turbines occurring in each LCA is shown in Figure 14-12.

Each LCA is listed below in Table 14-6, as well as a description of theoretical visibility within each LCA, as indicated by the ZTV in Figure 14-12. Several LCAs identified in the LVIA Study Area (15km for landscape character) have very small areas of theoretical visibility indicated by the ZTV map in Figure 14-12. The potential visibility of the proposed turbines was appraised during site surveys (multiple surveys conducted during 2022 and 2023) from all LCAs with very limited or partial theoretical visibility. The ZTV and on-site visibility appraisals determine which LCAs are screened in for full assessment later in this chapter (See also Appendix 14-2), the screening result is noted in Table 14-6.

Table 14-6 LCAs within the 15km LVIA Study Area

Map Ref	LCA	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Screened in for Assessment
Up to 5km				
T – LCA 7	Borrisokane Lowlands	Primarily full TV within 5km with patches of no TV to the south-west beyond 5km.	Visibility will occur. However, on-site appraisals determined that there would be limited visibility in areas of the LCA beyond 5km	Yes

Map Ref	LCA	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Screened in for Assessment
			from the proposed turbines	
T – LCA 11	Shannon Callows	Primarily full TV within 8km with a large area of no TV to the north-west beyond 8km as a result of an intervening ridgeline.	This LCA is gently undulating and there will be visibility of the proposed turbines from local high points within the LCA	Yes
5 to 10km				
T – LCA 10	Upper Lough Derg LCA	There are patches of full TV and no TV throughout this LCA, with TV limited along the eastern shores of Lough Derg. Although, to the north of this LCA, near Portumna, there is primarily full TV along the lakeshore	Site-visits determined that there is unlikely to be actual visibility of the proposed turbines from a large proportion of the areas with TV within this LCA, particularly those further to the south-west, beyond 13km, where the scale of the turbines means that they are well screened by the vegetation present in the landscape. However, there are some undulations throughout this LCA where the elevated vantage -points will allow views of the proposed turbines.	Yes
O – ILCA 1	Birr Plains	There are large areas of full TV within this LCA. There are also large areas of no TV, created by Knockshigowna to the south-east of the proposed turbines and by the undulating foothills of the Slieve Bloom Mountains to the east.	This LCA makes up a large part of the eastern half of the LVIA Study Area. Beyond 10km from the nearest turbines in this relatively flat LCA, the views towards turbines will be well screened by the hedgerows present in the landscape. However, a large part of this LCA is located between 5-10km from the site and there are likely to be intermittent views of the proposed turbines throughout this area	Yes

Map Ref	LCA	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Screened in for Assessment
O – ILCA 3	Central Wetlands	Primarily full TV throughout the LCA with some patches of no TV to the north-west closer to the River Shannon where the level of elevation falls and topographical screening becomes more effective.	Some parts of this LCA with full TV are less heavily vegetated than other parts of the LVIA Study Area and there are likely to be some views of the proposed turbine available from the southern part of this LCA.	Yes
O – ILCA 4	River Shannon and Callows	Primarily full TV throughout the LCA with an area of partial to no visibility in the south-west of the LCA.	There are likely to be views available from the north of this LCA towards the proposed turbines given that views in this direction look over the Little Brosna River which is at a lower elevation than the surrounding lands.	Yes
10 to 15km				
G – LCU 4c	Lough Derg Environs	Full TV in the very small part of this LCA located within the LVIA Study Area	The part of this LCA within the LVIA Study Area is primarily heavily vegetated peatland and mixed woodland on peat soils, with limited potential for external views towards the Proposed Development. Where the landcover is grassy agricultural land, the presence of hedgerows and vegetation in this LCA and the distance from the proposed turbines will substantially limit views of the Proposed Development.	No
G – LCU 6d	Kilcrow Basin	Primarily full TV in the very small part of this LCA located within the LVIA Study Area	Area with TV in this LCA are unlikely to actually have visibility of the proposed turbines given the presence of hedgerows and vegetation in this LCA	No

Map Ref	LCA	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Screened in for Assessment
			and the distance from the proposed turbines. From the limited locations where visibility does occur the turbines will be partially screened by intervening topographical features and vegetation	
G – LCU 8a	Shannon Environs	Large area of no TV to the south of the LCA, with partial to full TV to the north of this where this LCA falls within the LVIA Study Area.	Area with TV in this LCA are unlikely to actually have visibility of the proposed turbines given the presence of hedgerows and vegetation in this LCA and the distance from the proposed turbines. From the limited locations where visibility does occur the turbines will be partially screened by intervening topographical features and vegetation	No
O – ILCA 2	Slieve Bloom Upland Area	No TV within the part of this LCA that falls within the LVIA Study Area.	Views of the proposed turbines will be topographical screened from the parts of this LCA within the LVIA Study Area.	No

LCAs in Table 14-7 below are screened out from further assessment in this LVIA as views towards the turbines were either entirely screened or substantially screened. In some cases, distance to the proposed turbines and the limited footprint of the LCA located within the LVIA Study Area (15 km for assessments of landscape character) precluded LCAs from being assessed further in this LVIA.

*Table 14-7 LCAs **Screened Out** from further assessment*

Map Ref.	LCA
G – LCU 4c	Lough Derg Environs
G – LCU 6d	Kilcrow Basin
G – LCU 8a	Shannon Environs
O – ILCA 2	Slieve Bloom Upland Area

Following the pre-assessment exercise, the LCAs shown in Table 14-8 below have been selected for assessment. As some of the proposed turbines are likely to be visible from some areas within these LCAs, potential landscape effects may arise as a result of the Proposed Development.

*Table 14-8 LCAs **Screened In** for further assessment*

Map Ref.	LCA
T – LCA 7	Borrisokane Lowlands
T – LCA 11	Shannon Callows
T – LCA 10	Upper Lough Derg LCA
O – ILCA 1	Birr Plains
O – ILCA 3	Central Wetlands
O – ILCA 4	River Shannon and Callows

A detailed description of the ten LCAs screened in for assessment (Table 14-8) and the likely effects on landscape character as a result of the Proposed Development are presented in the Landscape Character Assessment Tables that form Appendix 14-2. A summary of landscape effects on these LCAs are reported in Section 14.7.3 of this chapter - *Operational Phase Effects*.

14.4.4.3 Other Landscape Receptors – Preliminary Assessment

Apart from the LCAs identified above, a number of other landscape receptors have been identified in the preceding sections. These are shown on Figure 14-5 – *Landscape Baseline*, and are listed below in Table 14-9, as well as a description of theoretical visibility from each receptor, as indicated by the ZTV in Figure 14-6. The potential visibility of the proposed turbines was appraised during site surveys (multiple surveys conducted during 2022 and 2023) from all receptors with very limited or partial theoretical visibility. The ZTV and on-site visibility appraisals determines which landscape receptors are screened in for full assessment later in this chapter, the screening result is noted in Table 14-9.

Table 14-9 Landscape Receptors within the 20km LVIA Study Area

Name	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Screened in for Assessment
County Offaly Area of High Amenity - River Shannon and Callows	There is a small area of full TV at the southern end of this Area of High Amenity. Further north there ss no or very limited TV	On-site appraisals determined that there would be limited visibility in parts of this area with theoretical visibility. The stretch of the River Shannon located within this Area of High Amenity is heavily vegetated along the River Bank and given the distances involved (between 11-20km from	No

Name	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Screened in for Assessment
		the nearest proposed turbine) any potential views of turbines will be heavily screened.	
County Offaly Area of High Amenity - Slieve Bloom Mountains	The undulating nature of this Area of High Amenity means that the is a mixture of full theoretical visibility and no theoretical visibility throughout.	Given that a large proportion of this Area of High Amenity is elevated, there are expansive open views towards the Proposed Development Site available from multiple locations throughout this area.	Yes
County Offaly Area of High Amenity - Lough Boora Discovery Park	The are patches of full TV and no TV throughout the parts of this Area of High Amenity that fall within the LVIA Study Area.	Site-visits determined that there is unlikely to be actual visibility of the proposed turbines from a large proportion of the areas with theoretical visibility within this Area of High Amenity, given the distances involved and the level of vegetation in the landscape	No
County Offaly Area of High Amenity - Grand Canal	There is full TV along a small stretch of the part of this Area of High Amenity that is located within the LVIA Study Area	The canal is bordered by dense vegetation along the stretch with TV in the LVIA Study Area. This vegetation will screen views of the proposed turbines considering the distances involved (approx. 18 km at its closest point).	No
County Offaly Area of High Amenity - Other Eskers	There is one esker classed as an Area of High Amenity located approx. 7.5 km north-east of the proposed turbines. There is primarily full TV indicated for the area designated here.	The eastern part of this Area of High Amenity is covered with mixed woodland which will prevent views towards the Proposed Development. However, there are parts of this esker to the west that are undulating and where views of the proposed	Yes

Name	Theoretical Visibility (TV) as indicated by ZTV	Actual Visibility	Screened in for Assessment
		turbines will likely be available.	
County Tipperary Primary Amenity Area – Lough Derg and the River Shannon	There is no TV along the stretch of this Primary Amenity Area located along the River Shannon. Where the area is located around the eastern shores of Lough Derg, there are patches of full theoretical visibility, particularly to the east, away from the shores of the Lough.	Site-visits determined that there is unlikely to be actual visibility of the proposed turbines from a large proportion of the areas with theoretical visibility within this Primary Amenity Area, particularly those, further to the south-west, beyond 13km, where the scale of the turbines means that they are well screened by the vegetation present in the landscape. However, there are some undulations throughout this Primary Amenity Area where the elevated vantage points will allow views of the proposed turbines.	Yes
Lough Derg	The northern half of Lough Derg and its shoreline are located within the LVIA Study Area and there are large areas of TV along the shores and on the water.	Given the open nature of views available from the western shores of the Lough, there are likely potential views of the proposed turbines in the background.	Yes
River Shannon	The section of the River Shannon bordering Galway and Tipperary has no TV as a result of an intervening ridgeline to the east. The TV for the section of the River Shannon bordering Offaly and Galway is described earlier in this table in relation to the County Offaly Area of High Amenity - River Shannon and Callows.	On-site appraisals determined that there would be limited visibility along the sections of the River with TV. The stretch of the River Shannon with TV is heavily vegetated along the River Bank and given the distances involved (between 11-20km from the nearest proposed turbine) any potential views of turbines will be heavily screened.	No

Landscape receptors in Table 14-10 below are screened out from further assessment in this LVIA as views towards the turbines were either entirely screened or substantially screened. In some cases, distance to the proposed turbines and the limited footprint of the landscape receptor located within the LVIA Study Area precluded the receptor from being assessed further in this LVIA.

*Table 14-10 LCAs **Screened Out** from further assessment*

Landscape Receptor
County Offaly Area of High Amenity - River Shannon and Callows
County Offaly Area of High Amenity - Lough Boora Discovery Park
County Offaly Area of High Amenity - Grand Canal
River Shannon

Following the pre-assessment exercise, the landscape receptors listed in Table 14-11 below have been selected for assessment. As some of the proposed turbines are likely to be visible from the receptors, potential landscape effects may arise as a result of the Proposed Development.

*Table 14-11 LCAs **Screened In** for further assessment*

Landscape Receptor
County Offaly Area of High Amenity - Slieve Bloom Mountains
County Offaly Area of High Amenity - Other Eskers (esker located 7.5km to the north of the Proposed Development)
County Tipperary Primary Amenity Area – Lough Derg and the River Shannon

A detailed description of the landscape receptors screened in for assessment (Table 14-11) and the likely landscape effects as a result of the Proposed Development are reported in Section 14.7.3 of this chapter – *Operational Phase Effects*.

14.5 Visual Baseline

14.5.1 Visual Receptors

The main purpose of establishing the visual baseline is to identify the key visual receptors that should be considered for viewpoint selection. Viewpoints are locations from which visual effects are assessed using photomontages (See Appendix 14-1 – *LVIA Methodology*). To this end, the following visual receptors have been identified within the LVIA Study Area and are listed in order of priority:

- Designated Scenic Routes and Views
- Viewing Areas (e.g., marked on OSi Maps)
- Settlements
- Recreational Routes (Waymarked Walking Routes; Cycle Routes; Scenic Drives; Tourist Routes)
- Recreational, Cultural Heritage and Tourist Destinations
- Transport Routes
- Residential Receptors

These visual receptors are identified in the visual baseline map (Figure 14-15) and are listed in tables in the following sections along with theoretical visibility at those locations indicated by the ZTV map in Figure 14-15. During site visits conducted during 2022 and 2023, the likely visibility of the proposed turbines was appraised from receptors where the ZTV has indicated theoretical visibility. Visual receptors are scoped out from further assessment when there is either no theoretical visibility of the proposed turbines or where on-site appraisal determined visibility of the proposed turbines to be very unlikely or very limited.

14.5.1.1 Designated Scenic Routes and Views

22 no. designated scenic routes and views were previously identified and described in Table 14-2 and Table 14-4 in Section 14.4.1 of this chapter – *Landscape Designations and Policy Context*. These scenic amenity designations are mapped in Figure 14-5 and also the visual receptor map shown above – Figure 14-15. Table 14-12 lists the scenic designations located in the LVIA Study Area as well as any descriptions relating to the direction or object of the view detailed in the relevant county development plan. If detailed in the development plan, the direction of the view is reported in Table 14-12 and whether it is likely that the designated scenic amenity is directed towards the Proposed Development. Table 14-12 also notes the theoretical visibility of the proposed turbines from these designated locations is as indicated by the ZTV - Figure 14-16.

Based upon these initial visibility assessments, scenic amenity designations are either screened in or out for full assessment in this LVIA.

**For purposes of clarity, continuity and reference to mapping figures in this chapter; designated scenic views are labelled 'V' and scenic routes 'SR', each is prefixed by the first letter of the county in which it is located e.g., 'G' for Galway and 'O' for Offaly. The last number in each label corresponds to the label or number assigned to each designation in the respective county development plans (e.g., G-V9 = Galway - Protected View No. 9).*

Table 14-12 Designated Scenic Amenity - Preliminary Assessment

Map Ref.	Scenic Route/View Description	Direction of View	Directed to Turbines?	Theoretical Visibility	Screened in for Assessment
Up to 5km					
T-SR52	V52 – South on the R489 east of Lorrha	South	Yes	Yes	Yes
5 to 10km					
T-SR51	V51 – West of the R493 north of Terryglass	West	No, but with expansive long range views in the direction of the turbines available	Yes	Yes

Map Ref.	Scenic Route/View Description	Direction of View	Directed to Turbines?	Theoretical Visibility	Screened in for Assessment
O-V13	Road No. L-03012 in the townlands of Glaster, Ballynasrah, Newtown, Kilmochonna. View over Over Little Brosna and Callows.	South-west	Partially	Yes	Yes
O-SR R440	Key Amenity Route – R440 Kinnitty to Ballard. – This route provides an attractive drive within the open countryside to the attractions of the Slieve Bloom Mountains and around the foothills of the mountains themselves.	South-west, south, and south-east	Partially	Yes	Yes
10-15km					
T-SR50	V50 – Views west of the L1091 south-west of Terryglass	West	No	Partial	No
T-SR49	V49 – West of L5080 north of Ballinderry	West	No	Partial	No
O-V6	View to R356 and Road No. L-07014 in the townlands of Cushcallow, Park, Mullaghakeeraun and Curralahan. View to River Shannon and bog lands	North-west	No	Partial	No
O-V15	View from Road No. L-04006 in the townland of Knock. View to Slieve Bloom Mountains, Leap Castle.	East, north-east	No	Yes	No
O-V14	View from R440 in the townlands of	South-east	No	Yes	No

Map Ref.	Scenic Route/View Description	Direction of View	Directed to Turbines?	Theoretical Visibility	Screened in for Assessment
	Kyle, Cloghanmore, Streamstown, Ballinree, Killaun. View towards Slieve Bloom Mountains.				
G-V47	This view is from the highest point on Saint Joseph's Road as it enters Portumna. The focus of this view are the two church spires. Significance: Local	North-east	No	Yes	No, there will be no visibility of the Proposed Development from this viewpoint due to the built infrastructure surrounding the viewpoint.
G-V48	This view is from the carpark, marina and picnic area. The focus of this view is Lough Derg and the reed banks. The wooded shores in the background are an important feature of the view. Significance: County	South, south-east	Partially	Yes	No, there will be no visibility of the Proposed Development from this viewpoint due to the vegetation surrounding the viewpoint at the marina, car park, and picnic area, even in winter months.
G-V49	This view is from the carpark, shore walk and picnic areas. The focus of this view is Lough Derg and the reed banks. The wooded shores in the background are an important feature of the view. Significance: County	South-east, South, west	Partially	Yes	No, there will be no visibility of the Proposed Development from this viewpoint due to the vegetation surrounding the viewpoint at the carpark, shore walk and picnic areas, even in winter months.
G-V51	This view is from Meelick Quay picnic and parking area. The focus of this view is the River Shannon and the Incherky in the background. The old battery (covered in trees) is an important feature of this view. Significance: County	South, east, north-east	Partially	Partial	No, there will be no visibility of the Proposed Development from this viewpoint due to screening from topography (only blade tips are theoretically visible above this) and the vegetation present on the far bank of the River, even in winter months.

Map Ref.	Scenic Route/View Description	Direction of View	Directed to Turbines?	Theoretical Visibility	Screened in for Assessment
G-V52	This view is from the middle of the Banagher bridge. The focus of this view is the Shannon River, Banager Park and the Castle ruins. Significance: County	South-west, west, north, north-east	No	Yes	No
15-20km					
T-SR48	V48 – West of R493 Puckane to Ballinderry	West	No	No	No
T-SR53	V53 – Views east on the R491 Cloughjordan to Nenagh	East	No	No	No
O-V5	View from N52 in the townlands of Heath, Bunaterin, Derrydolney, Ballywilliam, Curraghmore, Ballynacard, Bally na Curra. View to Slieve Bloom Mountains.	South-east	No	Partial	No
O-V12	View from Road No. L-07009 in the townland of Stonestown. View over bog lands and Slieve Bloom Mountains	South-east	Partially	Yes	Yes
O-V16	View from Road No. L-04025 in the townlands of Clonee, Cumber Lower. View westward over farmland.	West	Yes	Yes	Yes
O-V18	View from Road No. L-08008 in the townlands of Grange, Belhill,	West	Yes	Yes	Yes

Map Ref.	Scenic Route/View Description	Direction of View	Directed to Turbines?	Theoretical Visibility	Screened in for Assessment
	Longford Big and Church Land. Views towards Seir Keiran Monastic Site.				
G-V44	This view is from the pier. The focus of this view is Lough Derg. The wooded shores and small islets are important features of this view. Significance: County	South-east	No	Yes	No, views towards the Proposed Development will be entirely screened by intervening vegetation adjacent to the pier
O-SR R357	Key Amenity Route – R357 Blueball to Shannonbridge – This route links the N52 at Blueball to Shannonbridge. It passes through esker landscape, peatlands, undulating agricultural lands, Lough Boora Discovery Park and the Callows area of the River Shannon in particular.	All directions	Partially	Yes	No, site-visit determined that considering the distances involved (approx. 19km) and the level of vegetation alongside the small stretch of this route inside the LVIA Study Area that there would be no actual visibility of the proposed turbines from along this route.

14.5.1.2 OSi Viewing Areas

One viewing area was identified in an Ordnance Survey of Ireland (OSI) map of the LVIA Study Area. This viewpoint is described below in Table 14-13. Although there is full theoretical visibility indicated by the ZTV map, views from this location are not focused in the direction of the Proposed Development and on-site appraisal determined no visibility likely to occur from this viewpoint, therefore, it was screened out of further assessment.

Table 14-13 OSI Viewing Areas within the LVIA Study Area

View Description	Direction and Range of View	Directed to Turbines?	Theoretical Visibility	Screened in for Assessment
This view is from the Rossmore Quay. The view is of Lough Derg. The wooded shores and small islets seen within this view.	South, east	No	Yes	No, views towards the Proposed Development

				will be entirely screened by intervening vegetation adjacent to the pier.

14.5.1.3 Settlements

In order to identify which settlements within the LVIA Study Area should be considered for viewpoint selection, the settlement strategies and hierarchy set out in the core strategy of the Development Plans of Counties Tipperary, Galway and Offaly were consulted. The settlement hierarchies of the three counties in the LVIA Study Area use differing classifications and naming conventions. MKO have created a standardised settlement hierarchy to enable cross-comparison of these population centres and clarity within the visual baseline mapping and throughout this assessment. Each settlement is given one of the following classifications in consideration of its size, population density and existing designation in the relevant county development plan.

- County Hub Town
- Town
- Village
- Rural Settlement Clusters

Table 14-14 below lists the settlements identified from the respective county development plans within the LVIA Study Area also noting their county status within the settlement strategy and whether there is theoretical visibility indicated by the ZTV.

Table 14-14 Settlements within the LVIA Study Area

Settlement	County Settlement Hierarchy	Standardised Settlement Hierarchy	Theoretical Visibility	Screened In?
Up to 5km				
Carrig	Settlement Nodes	Rural Settlement Cluster	Full	Yes
Aglish	Settlement Nodes	Rural Settlement Cluster	Full	Yes
Ballingarry	Settlement Nodes	Rural Settlement Cluster	Full	Yes
5 to 10km				
Rathcabbin	Local Service Centre	Village	Full	Yes

Settlement	County Settlement Hierarchy	Standardised Settlement Hierarchy	Theoretical Visibility	Screened In?
Riverstown	Local Service Centre	Village	Full	Yes
Lorrha	Local Service Centre	Village	Partial	No, site visits determined that there were no locations where visibility of the proposed turbines could be established. The village is bordered by several lines of treelines bordering fields which screen views in the direction of the proposed turbines.
Carrigahorig	Settlement Nodes	Rural Settlement Cluster	No	No
Birr	Self-Sustaining Growth Town	Town	Mostly full	Yes
Crinkle	Village	Village	Full	Yes
10 to 15km				
Banagher	Town	Village	Mix of full and no visibility	Yes
Coolderry	Village	Village	Full	No, views of turbines at this receptor will be partially screened by topography with primarily blade tips visible, these will be substantially screened by vegetation and built infrastructure in this flat landscape.
Shinrone	Village	Village	Partial to Full	No, views of turbines at this receptor will be partially screened by topography with primarily blade tips visible, these will be substantially screened by vegetation and built infrastructure in this flat landscape.
Cloughjordan	Service Centre	Town	No	No
Borrisokane	Borrisokane	Town	Mostly full	No, site visits determined that there were no locations where visibility of the proposed turbines could be established. At this distance within the flat, heavily vegetated landscape, views of

Settlement	County Settlement Hierarchy	Standardised Settlement Hierarchy	Theoretical Visibility	Screened In?
				turbines will be substantially screened from view.
Ballinderry	Settlement Nodes	Rural Settlement Cluster	No	No
Terryglass	Local Service Centre	Village	No	No
Portumna	Small Growth Town	Town	Mostly full	No, site visits determined that there were no locations where visibility of the proposed turbines could be established. At this distance within the flat, heavily vegetated landscape, views of turbines will be substantially screened from view.
15 to 20km				
Shannon Harbour	Village	Village	No	No
Cloghan	Village	Village	Full	No, site visits determined that there were no locations where visibility of the proposed turbines could be established. At this distance within the flat, heavily vegetated landscape, views of turbines will be substantially screened from view.
Kinnity	Village	Village	Partial	No, site visits determined that there were no locations where visibility of the proposed turbines could be established. At this distance within the flat, heavily vegetated landscape, views of turbines will be substantially screened from view.
Ardcroney	Local Service Centre	Village	Partial	No considering the distance and the large areas of no theoretical visibility present in and around the settlement, views of turbines at this distance for this receptor will not have a 'Significant' visual effect.

Settlement	County Settlement Hierarchy	Standardised Settlement Hierarchy	Theoretical Visibility	Screened In?
Kilbarron	Settlement Nodes	Rural Settlement Cluster	No	No
Roscrea	Service Centre	Town	Partial	No considering the distance and the large areas of no theoretical visibility present in and around the settlement, views of turbines at this distance for this receptor will not have a 'Significant' visual effect.

14.5.1.4 Recreational Routes

Recreational routes are sensitive receptors as people are likely to be using them in a recreational capacity where value is likely to be placed upon views and the scenic amenities of the landscape. The term recreational routes encompass the following:

- Waymarked walking routes (Source – Sport Ireland Designated Trails)
- Cycle routes (Source – Sport Ireland Designated Cycle Routes)
- Scenic drives and tourist routes (e.g., the Wild Atlantic Way)

Routes were identified and located within the LVIA Study Area by examination of Osi maps and online sources such as: Sportireland.ie/outdoors/Irelands-trails; Heritagemaps.ie and Activeme.ie. Many routes exist of differing scale and prominence, only recreational routes of county or national importance were included in this LVIA. The routes are shown on Figure 14-15 and are listed in Table 14-15 below along with theoretical visibility distributed upon each route by ZTV mapping.

Table 14-15 Recreational Routes within the LVIA Study Area

Route Name	Description	Theoretical Visibility	Actual Visibility	Screened In?
Up to 5km				
Ormond Way	This is an 83km waymarked walking route entering the LVIA Study Area to the south of the Proposed Development and finishing at a wooded area at Dromad near Portumna	A large portion of this route has theoretical visibility of the proposed turbines	In reality, site visits determined that while there will be instances of visibility along the sections of this route within the wider study area, the majority of the views of the proposed turbines will likely occur within 5km of the site.	Yes
5 to 10km				

Route Name	Description	Theoretical Visibility	Actual Visibility	Screened In?
Birr Cycle Hub Route 3/3A/3B	*"Travelling east towards the foothills of the scenic Slieve Bloom Mountains, the full loop is a challenging enough spin, but with 3a and 3b offering a shorter way back there is something here for everyone. Climbing steadily out of the town, the route levels off before the early Christian monastic site of St Kieran. Kinnity and Cadamstown are two interesting and scenic villages ideal for a snack stop. At Kilcormac you can choose to opt for a straight run back to Birr along the bog road (3b). Alternatively continue through the scenic Lough Boora Parklands, and then into Cloghan."* (Discover Ireland Website)	There are large stretches of theoretical visibility along this route and its variations.	There will be multiple views of the proposed turbines along this route considering its length in the study area and the large areas of theoretical visibility. It is noted that the there are substantial stretches of the routes with dense roadside screening from vegetation.	Yes
Birr Cycle Hub Loop 4	*"Start off down the main road to Roscrea. For Route 4a turn left up a short and steep hill onto a plateau of high ground called Crinkhill; For Route 4 stay on the main road until the right turn at the little pub called The Black Bull, which marks Sharavogue and then on to Shinrone Village. Mount Joseph Cistercian Abbey and College signals the start of the return leg. The route remains quite hilly until you reach a junction with a view of Leap Castle. Continue on then to the St Kieran monastic site, before an easy descent back to Birr."* (Discover Ireland Website)	A large stretch of this route within 10km of the site has theoretical visibility. Outside of 10km theoretical visibility is less common, but still present in places.	There will be multiple views of the proposed turbines along this route considering its length in the study area and the large areas of theoretical visibility. It is noted that the there are substantial stretches of the routes with dense roadside screening from vegetation.	Yes
Birr Cycle Hub Loop 5	*"This is a figure of eight loop to the north of Birr. Start off along the outside of the castle walls and turn left through the demesne*	There are areas of no theoretical visibility as well as full theoretical visibility within	There will be multiple views of the proposed turbines along this route considering its length	Yes

Route Name	Description	Theoretical Visibility	Actual Visibility	Screened In?
	farmland. Continue on through the crossroads to Cloghan for refreshments. You can take the short route across to the Clononey Castle. The return leg of this cycle route will bring you through Shannon Harbour and Banagher Town, before a fast downhill road returns you to Birr." (Discover Ireland Website)	15km of the site. Beyond 15km there is primarily no theoretical visibility until nearing the edge of the LVIA Study Area.	in the study area and the large areas of theoretical visibility. It is noted that the there are substantial stretches of the routes with dense roadside screening from vegetation.	
10 to 15km				
Kinnitty - Knockbarron Loop	This is a 5km waymarked looped walking trail through Knockbarron Wood	There is theoretical visibility along the south-eastern section of the looped trial only.	The section of the walk with theoretical visibility passes through a heavily wooded area and external views are extremely limited. There will be no visibility of the proposed turbines from this route.	No
Hymany Way	The Hymany Way is a long-distance trail in County Galway. It is 50km long and begins in Portumna and ends in Aughrim.	There is no theoretical visibility until an approximately 4km stretch of full to partial theoretical visibility occurs to the north-east of the proposed turbines. There is also a large stretch of theoretical visibility further to the north, beginning where the route leaves the bank of the River Shannon.	This route follows some of the lowest-lying areas within the LVIA Study Area and visibility of the proposed turbines will be greatly restricted from this route. Particularly given the distances involved and the vegetated nature of the route itself where it passes alongside the banks of the River Shannon. Any views of the proposed turbines are likely to be partial views of small background features.	No

14.5.1.5 Recreational, Cultural Heritage and Tourist Destinations

Popular recreational, cultural heritage and tourist destinations were identified in the LVIA Study Area through a desktop exploration of localised tourism plans as well as considering the most popular tourism destinations in County Tipperary, Galway, and Offaly listed on Tripadvisor.ie. Prominent outdoor tourism and recreational destinations identified in the LVIA Study Area are listed below in Table 14-16.

Table 14-16 Recreational and Tourist Destinations within the LVIA Study Area

Tourist Destination	Description	Theoretical Visibility	Actual Visibility	Screened In?
Up to 10km				
Birr Castle and Demense	Birr Castle is a large castle in the town of Birr in County Offaly. The grounds and gardens of the demesne are publicly accessible, and include a science museum, a café, and a reflecting telescope which was the largest in the world for decades and a modern radio telescope.	Full theoretical visibility indicated	In reality, site visits determined that while there will be no visibility from within the demesne given the high levels of vegetation throughout, and surrounding, the gardens.	No visibility will occur, however, as noted in Section 14.1.6 above, views from Birr Castle were requested by Offaly County Council as part of the pre-planning consultation with them. Therefore, views confirming the lack of visibility from Birr Castle and Demense are included below in Section 14.7.3.
St Ruadhan's Abbey	The village of Lorrha is home to several important ecclesiastical ruins, including that of St Ruadhans Church.	A mixture of no theoretical visibility at the southern half of the site, and partial theoretical visibility to the north.	Site visits confirmed that no visibility of the proposed turbines is possible given the intervening topography and treelines present in views towards the Proposed Development	No

Tourist Destination	Description	Theoretical Visibility	Actual Visibility	Screened In?
Redwood Castle	A Norman castle near Lorrha in County Tipperary, Ireland. The castle was built by the Normans around 1200 AD.	No theoretical visibility	No visibility due to intervening topography	No
10 to 15km				
Portumna Castle & Gardens	A semi-fortified house in Portumna, County Galway, Ireland which was built in the early 17th century by Richard Burke, 4th Earl of Clanricarde.	Primarily full theoretical visibility with one small patch of no theoretical visibility in part of the gardens	Site visits determined that while there will be no visibility from within the gardens given the high levels of vegetation surrounding the gardens.	No
Leap Castle	A castle in Coolderry, County Offaly, Ireland, about 6 kilometres north of the town of Roscrea and 10 kilometres south of Kinnitty on the R421.	No theoretical visibility	No visibility due to intervening topography	No

14.5.1.6 Transport Routes

Motorways, national primary and national secondary roads were identified within the LVIA Study Area. The visual baseline exercise determined that most visibility of the proposed turbines will occur within 5km of the proposed turbines. Therefore, regional roads within 5 km were included in the visual baseline exercise. Regional roads and local road transport routes within 3-5km (3km in the case of local roads and 5km in the case of regional or national roads) of the proposed turbines were also assessed as part of the route screening analysis included in Section 14.3.4.

Table 14-17 (below) lists the transport routes and the geographical extent of theoretical visibility upon each section of the identified transport routes as illustrated in the Visual Baseline and ZTV Map – Figure 14-16. On site appraisals determined that in most instances there will be limited visibility from large portions of these routes where the ZTV has indicated full theoretical visibility due to local topography and roadside screening. For the purpose of viewpoint selection locations were identified where most open visibility is likely to occur on these transport routes.

Table 14-17 Major Transport Routes in the LVIA Study Area.

Transport Route	Theoretical Visibility	Screened Out?
Up to 5km		
N52	Mostly full theoretical visibility within 5km of the site and large stretches of theoretical visibility outside of 5km	Yes
R489	Mostly full theoretical visibility within 5km of the site and large stretches of theoretical visibility outside of 5km	Yes
R438	Mostly full theoretical visibility within 5km of the site and large stretches of theoretical visibility outside of 5km	Yes
5 to 10km		
N65	Large stretches of full theoretical visibility with some small patches of no theoretical visibility as well.	Yes
N62	Mostly full theoretical visibility within 10km of the site and large stretches of theoretical visibility outside of 10km	Yes
15 to 20km		
M7	Full theoretical visibility along a very small stretch of the route where it enters the LVIA Study Area.	No, on-site investigations revealed that as a result of roadside vegetation, and smaller roadside topographical undulations, there will be no visibility of the Proposed Development.

14.5.2 Visual Receptor Preliminary Assessment

After identifying the visual receptors in the study area based on designated scenic routes, settlements, recreational routes, recreational and tourist destinations, recreational routes, OSi viewing areas and transport routes, a preliminary assessment was carried out to screen out visual receptors that will not be impacted by the Proposed Development.

Zone of Theoretical Visibility mapping and visibility appraisals conducted on site during surveys undertaken in 2022 and 2023 were used to scope out visual receptors from further assessment. In the case of the visual receptors shown in Table 14-18 below, views towards the turbines were either entirely screened or substantially screened from view. In some cases, the factor of distance to the Proposed Development Site as well as the directional focus of views was included in the screening assessments and was a contributing factor precluding these locations being selected as viewpoints.

*Table 14-18 Visual Receptors **Screened Out** from further assessment*

Visual Receptor Category	Visual Receptor
Designated Scenic Routes and Views	› T-SR50 › T-SR49 › O-V6 › O-V15 › O-V14 › G-V47 › G-V48 › G-V49 › G-V51 › G-V52 › T-SR48 › T-SR53 › O-V5 › G-V44 › O-SR R357
OSi Viewing Areas	Rossmore Quay
Settlements	› Lorrha › Carrigahorig › Coolderry › Shinrone › Cloughjordan › Borrisokane › Ballinderry › Terryglass › Portumna › Shannon Harbour › Cloghan › Kinnity › Ardcroney › Kilbarron › Roscrea
Recreational Routes	› Kinnitty - Knockbarron Loop › Hymany Way
Recreational and Tourist Destinations	› St Ruadhan's Abbey › Redwood Castle › Portumna Castle & Gardens › Leap Castle
Transport Routes	M7 Motorway

Following the pre-assessment exercise, the visual receptors shown in Table 14-19 below have been selected for assessment due to their significance within the study area and the potential visual effects they may experience due to the Proposed Development.

Table 14-19 Visual Receptors Screened In

Visual Receptor Category	Description	Viewpoint No.
Designated Scenic Routes and Views	T-SR52	VP1
	T-SR51	VP15
	O-V13	VP14
	O-SR R440	PWVP I
	O-V12	VP4
	O-V16	VP5
	O-V18	VP5 (represented by)
Settlements	Carrig	VP16
	Aglish	PWVP P
	Ballingarry	PWVP L
	Rathcabbin	VP1 / VP11
	Riverstown	VP8 / PWVP J
	Birr	VP8
	Crinkle	VP8
	Banagher	VP3
Recreational Routes	Ormond Way	PWVP P / PWVP F / PWVP N /VP9
	Birr Cycle Hub Route 3/3A/3B	PWVP I
	Birr Cycle Hub Loop 4/4A	VP10
	Birr Cycle Hub Loop 5	VP14 / PWVP B / PWVP C
Recreational and Tourist Destinations	Birr Castle and Demesne	PWVP D / PWVP E,
Transport Routes	N52	VP7/ VP16 / PWVP J / PWVP L
	R489	VP 11 / PWVP B / PWVP C
	R438	VP18
	N65	VP13
	N62	VP10 / VP3

14.5.3 Visual Amenity from Residential Receptors

During multiple surveys conducted in 2022 and 2023, visibility appraisals determined that most visibility of the proposed turbines will occur within 5 km of the Proposed Development Site. This area is a sparsely populated, modified working landscape, however, it is a settled landscape and residential housing is organised along the local road network as well as small settlement clusters around local crossroads and junctions. Some residential receptors located in close proximity to the site will likely have views of the proposed turbines and are likely to have the greatest visual effects arising as a result of the Proposed Development. Several photomontage viewpoint locations representing residential properties located in close proximity to the Proposed Development were selected for inclusion in the photomontage booklet and are assessed in Appendix 14-3 and discussed later in this chapter. The following representative viewpoints are located in proximity to residential receptors and settlement centres within 5 km from the site.

- VP11 – townland of Newtown
- VP2 – townland of Clonfinane
- VP6 – townland of Faddan More
- VP17 – townland of Arrigmore
- VP18 – townland of Sharragh
- VP1 – townland of Lisballyard
- VP7 – townland of Tinlough
- VP9 – townland of Abbevil
- VP16 – townland of Doughkill

The impact of the proposed turbines on residential visual amenity is discussed in detail in Section 14.7.3.3.4.

14.6 Cumulative Context

In terms of cumulative landscape and visual effects, other wind energy projects are of primary focus, as only these would be described as very tall vertical elements in the landscape and have greatest potential to give rise to significant cumulative effects. The purpose of this section is to identify all wind farm developments in the LVIA Study Area which potentially contribute to assessment of cumulative and in combination landscape and visual effects. This chapter assesses the likely landscape and visual impacts of the Proposed Development, both independently, as well as in combination with all other existing and operational wind farm developments in the LVIA Study Area. This chapter also assesses the Proposed Development in combination with the *'likely future receiving environments'* (EPA, 2022) which includes all existing and permitted wind farm developments in the LVIA Study Area.

The effects reported both in this chapter and within the assessment appendices (Appendix 14-2 - LCA Assessment Tables; Appendix 14-3 - Photomontage Assessment Tables) uses appropriate and logical narrative to discuss cumulative interactions between the Proposed Development and all other wind energy developments.

Other wind energy developments within 20 km of the Proposed Development were identified by searching past planning applications lodged through the various planning authorities (Relevant County Councils and An Bord Pleanála) online planning portals. The information identified in the initial planning search was then used to verify, by means of a desk-based study and ground-truthing, whether the permitted wind energy developments had been constructed. The list of existing and permitted wind turbines present within the LVIA Study Area are listed in Table 14-14 below:

Table 14-20 Other Wind Farms Identified in the LVIA Study Area

Other Wind Farms	Status	No. of Turbines	Distance from the nearest proposed turbine
Up to 5km			
Skehanagh Wind Farm	Existing	5	4.6km
Carrig Wind Farm	Existing	3	3.8km
10 to 15km			
Meenwuan Wind Farm	Existing	4	12.1km
Derrinlough Wind Farm	Permitted	21	12.9km
15 to 20km			
Cloghan Wind Farm	Existing	9	15.9km

There are 4 no. existing wind farms, and 1 no. permitted wind farm within a 20-kilometre radius of the proposed turbines. The locations of the 5 no. wind farms can be identified on the Cumulative Context Map, Figure 14-17. The turbines are primarily located to the northeast and southeast of the Proposed Development. If the turbines are theoretically visible, all turbines are included within the proposed photomontage imagery in the Photomontage Booklet.

An assessment of cumulative landscape and visual effects are included in the assessment of effects detailed in Section 14.7.

14.7 Likely Significant Landscape and Visual Effects

All elements of the Proposed Development are assessed in this Chapter, however, as detailed in Section 14.1.3, the focus of assessments throughout the Chapter is upon the turbines of the Proposed Development, as they are deemed to be the essential aspect of the proposal under assessment from a landscape and visual perspective.

14.7.1 Do-Nothing Scenario

If the Proposed Development were not to proceed, no changes would be made to the current land-use practice of low intensity agriculture and commercial forestry. Should this occur the landscape and visual impact would be neutral in the context of this EIAR.

14.7.2 Construction Phase Effects

It is estimated that the construction phase of the Proposed Development will last between 12–18 months. The construction of the development will involve the construction of 7 turbines with a maximum blade tip height of 185m and all associated works, and a 38kV onsite substation and associated works, including underground 33kV cabling. Construction phase effects also include the associated effects resulting from the movement of construction and turbine transport vehicles into and out of the Proposed Development Site, to allow the construction of the turbines, roads, and associated elements.

14.7.2.1 Landscape Effects (Construction Phase)

The earthworks such as cut, and fill required to facilitate construction of the Proposed Development will have a direct effect on the landscape and have the greatest potential for landscape effects. Where excavation is required, existing landcover, vegetation and spoil will be removed during the construction phase. In most instances, groundworks and excavation trenches will be re-instated upon completion of construction. Excavation will be visually contained by the surrounding forestry and will not be visible from the wider LVIA Study Area. The construction activities may potentially cause temporary impacts on the landscape such as the creation of temporary structures, dust, and noise. In general, it is considered that the construction phase will have a Short-Term, Moderate, Negative effect in terms of direct landscape effects.

The construction works will be temporary/short-term in nature and completed as soon as practically possible. All construction activities will follow best practise methods to reduce impacts upon the environment and landscape of the Wind Farm Site. Further details are contained in the Construction and Environmental management Plan (CEMP) contained in Appendix 4-2 of this EIAR.

14.7.2.2 Visual Effects (Construction Phase)

The most substantial visual effects will arise from requisite construction activities such as building tower sections and erecting the turbines. There will be temporary scenarios during the construction phase where the proposed turbines will be partially constructed and may be seen as either standalone tower sections, or incomplete turbines where only one or two blades are visible. The equipment and vehicles required to transport and erect the wind farm components include large cranes and large haulage vehicles. These construction activities will cause Slight, Short-Term Negative visual effects.

General housekeeping measures, necessary for Health & Safety requirements, will ensure that the active construction areas will be kept tidy, mitigating localised visual impacts during the construction phase. A detailed description of the Proposed Development is included in Chapter 4 of this EIAR. The following

sections assess the visual effects associated with the construction phase of the other (non-turbine) components of the Proposed Development.

14.7.2.3 Ancillary project Elements (Construction Phase)

Grid Connection Underground Electrical Cabling Route – Construction Phase Effects

The underground electrical cabling route will be located underground, therefore the greatest effects attributed to this element of the Proposed Development will occur during the construction phase. The underground electrical cabling route works are to be carried out along existing public road corridors. The construction phase of the underground electrical cabling route will be short-term, localised, and transient in nature, as the works move along the cabling route. The works will include roadside vegetation removal, soil/road surface stripping, excavation, and other associated construction activities. These activities will cause temporary change to the physical landscape along the underground electrical cabling route. Changes will be localised to the immediate environment surrounding the grid connection and will not permanently affect the character of the landscape setting or visual amenity of the wider area. The proposed grid connection underground cabling works are likely to cause 'Slight' Temporary, Negative landscape and visual effects.

The following measures should be implemented to mitigate effects during the construction phase and operational phase of the Grid Connection underground electrical cabling route:

- In all circumstances, excavation depths and volumes will be minimised, and excavated material will be re-used where possible.
- Where the cable trench is to be located in the road verge, subsoil should be piled on site and re-used after cabling works. Should any medium planting be removed, it should be replaced with the same or similar species whenever it is not possible to salvage and reinstate.
- Any areas of bare soil remaining after the landscaping phase will be seeded as soon as possible with a grass seed mix to minimise sediment run-off.

Turbine Delivery Route (TDR) Accommodation Works

Works such as road widening are sometimes required along proposed turbine transport routes to accommodate the large vehicles used to transport turbine components to wind farm sites. In some instances, minor temporary alterations will be required to the existing streetscape and roundabout islands, temporary local road widening, overruns of roundabout island and temporary relocation of some signs and street furniture. Full details of the assessment are included as part of the traffic impact assessment set out in Chapter 14 of this EIAR.

Removal of hedgerows and earthworks are required for the provision of temporary roads in order to facilitate turbine delivery at locations 2 and 3 as detailed in Section 4.4.2.2 in Chapter 4. The landscape value and sensitivity of the site of the TDR accommodation works are deemed to be low and the change to occur will be highly localised. These works are likely to cause 'Not Significant' Temporary, Negative landscape and visual effects.

Proposed Substation

Visual effects will occur as the proposed substation is built due to the earthworks and requisite construction activities; these will cause a substantial but localised change to views in the immediate area. As established in the baseline investigations, the proposed substation is located within a dense tract of deciduous woodland, which limits external visibility substantially. The only visual receptors likely to have visibility of the proposed substation during the construction phase are users of the local

road providing access to the site itself, these receptors are deemed to be Low sensitivity. Therefore, visual effects are likely to be highly localised, Negative, Short-Term and will be 'Imperceptible'.

Site Access Roads and Hardstand Areas

The proposed access roads and hardstand areas are flat features and will be most visible within their immediate surroundings, within the Proposed Development site, hence no 'Significant' impacts will arise within the landscape. Every use will be made of the existing farm and access tracks on the site. Some tracks will be upgraded appropriately whilst several stretches of new internal roads will need to be constructed. The impact of the construction of these flat and hard surfaces will be very localised. The visual effects arising from the access roads and hardstand areas are considered to be highly localised, Short-Term, and 'Slight'.

Meteorological (Met) Mast

One met mast is proposed as part of the Proposed Development Site. This will be a slender structure, 107m in height, and will not be an imposing structure in terms of visual impact. The landscape and visual effects of the construction of the proposed mast will be localised, considering that construction activities related to this will be most visible within their immediate surroundings. Within the site and its immediate landscape setting, the landscape and visual effects arising from the construction of the met mast is considered to be of highly localised Negative, Short-Term 'Slight' effects.

14.7.3 Operational Phase Effects

14.7.3.1 Landscape Effects (Operational Phase)

14.7.3.1.1 *Landscape of the Proposed Development Site*

The landscape character of the Proposed Development Site will undergo major changes in the landscape by the introduction of vertical man-made structures within the landscape of the Proposed Development Site. The footprint of the proposed turbines and ancillary infrastructure comprises 7.18ha of the area within the EIAR Site Boundary at the Proposed Development Site. There will be a substantial magnitude of change to the landscape in localised areas within the site where the landscape is materially altered (infrastructure footprint).

In a local context, the Proposed Development Site is located in a modified remote working landscape of local value. Cutover peat and commercial forestry is the dominant landcover of the relatively flat landscape within the site itself. The landscape value and sensitivity of the Proposed Development Site was deemed to be Low in Section 14.4.2.2 above. Low sensitivity balanced with a substantial magnitude of change amounts to long-term landscape effects of Moderate significance upon the physical fabric of the landscape of the site (See LVIA Methodology, Appendix 14-1). These direct landscape effects will be highly localised to the footprint of the Proposed Development. Effects on the perceptual and aesthetic character of the site are also deemed to be of Moderate significance.

Mitigation of Landscape Effects within the Landscape of the Proposed Development Site

The following measures have been included in the Proposed Development design in order to avoid or reduce direct effects on landscape receptors on the Proposed Development Site:

- The spatial configuration of the proposed infrastructure footprint has been carefully designed to minimise the loss of valuable landscape receptors on the Proposed Development Site, such as mature woodland, Annex 1 habitats or features of cultural heritage value (see also Chapter 12 – Cultural Heritage).

- The internal site road layout makes use of the existing roads and forestry tracks wherever possible, to minimise the requirement for new tracks within the Proposed Development Site.
- To minimise cut and fill activities required to construct the Proposed Development, the proposed access roads, and other infrastructure such as hard stands have been designed to align with the existing terrain within the landscape of the Proposed Development Site.
- In all circumstances, excavation depths and volumes will be minimised, and excavated material will be re-used where possible.
- During initial vegetation stripping, all topsoil material will be temporarily stored on the Proposed Development Site and used for "dressing" the edges of the development infrastructure during reinstatement/regrading, including that of the spoil management areas. This will be particularly important in areas of cut and fill. The stripped topsoil will contain a natural seed source of local provenance and result in the re-establishment of baseline vegetation.

Residual Landscape Effects

Once the Proposed Development is operational and construction is complete, the landscape will naturally re-vegetate around the Proposed Development footprint with the aid of mitigation measures (e.g., retention of natural seedbank during soil stripping). Considering the mitigation measures above, residual effects upon the landscape of the of the Proposed Development Site are deemed to be 'Slight'.

14.7.3.1.2 *Effects on Landscape Receptors of High Sensitivity*

Section 14.4.4.3 above screened in several designated landscape receptors for assessment. These landscape receptors were identified within the landscape baseline on the basis of theoretical and actual visibility as determined during site visits conducted in 2022 and 2023. The likely landscape effects on these receptors are discussed below. The Proposed Development will not directly alter the physical fabric of these landscape receptors and therefore any landscape effects are only likely to impact their character or setting. In all instances, there will be no 'Significant' impact on the sensitivities of these receptors due to the large set back distances and limited visibility of the Proposed Development from them.

Tipperary Primary Amenity Area – Lough Derg and River Shannon

Lough Derg and River Shannon is located west of the Proposed Development Site, it is a designated Primary Amenity Area of County Tipperary. At its closest point, the Primary Amenity Area is located 6.8km from nearest proposed turbine, T5, and extends beyond the LVIA Study Area to Killaloe, located approximately 40km from the nearest proposed turbine. As noted previously in Section 14.4.1.1.1 The TCDP states in relation to Primary Amenity Areas

> *"These areas are particularly notable by virtue of their scenic and visual quality and offer significant opportunities for tourism development and rural recreational activities. The Council will seek to ensure that a balance is achieved between the protection of sensitive landscapes and the appropriate socio-economic development of these areas. In this respect,* ***development proposals will be required to demonstrate that they integrate and respect the visual quality of the amenity area.***

There are large parts of this Primary Amenity Area where there is no theoretical visibility indicated (see Figure 14-6). This includes the majority of the parts of the River Shannon and Callows located within this Primary Amenity Area designation. Figure 14-18 below shows a view from along the River Shannon near the Portumna Swimming Area. Full theoretical visibility is indicated for this location although it can be seen in PWVP Q below that turbines will appear as ver small background elements

in the background of the view above the topography through this gap in the riverside vegetation. This is representative of the most open views available from locations alongside the River Shannon.

Figure 14-18 PWVP Q - View from the River Shannon near Lough Derg, adjacent to the Portumna Swimming Area

Further south, towards Lough Derg, there will be a very limited number of instances where views towards the proposed turbines are possible. The landform is undulating providing topographical screening and the vegetation existent within the landscape will provide further screening, in particular from the lakeshore. Viewpoint 15 (presented in the Volume 2 Photomontage Booklet) is located within this Primary Amenity Area and shows one of the most open views of the Proposed Development available from within the area. Turbines are seen in the background of the view from this location and are seen in the opposite direction to the rest of the Primary Amenity Area from this viewpoint. The primary scenic amenity within the Primary Amenity Area is directed towards the Lough Derg lakelands and the River Shannon, which are both located in the opposite direction to the Proposed Development from locations within the Primary Amenity Area. This is considered a High sensitivity landscape receptor but, considering that turbines will be seen only from isolated locations and will not be seen from the majority of the most sensitive part of the area like the lakeshore or riverbanks, a Negligible magnitude of change is deemed to arise, and therefore, a Negative Slight residual landscape effect on the visual quality of the area is deemed to arise.

Offaly Area of High Amenity – Slieve Bloom Mountains

The Slieve Bloom Mountains is a designated Area of High Amenity (AHA) within County Offaly, partially within the LVIA Study Area, located approximately 13.4 km from the nearest turbine at its closest point. The foothills of the Slive Bloom Mountains are located within the study area but not the upper reaches of the mountains themselves.

The proposed turbines will be visible from elevated vantage points within this AHA, although they will not alter the immediate landscape setting. As shown by the ZTV (see Figure 14-6), there are limited patches of theoretical visibility of the proposed turbines within this AHA due to screening from topography. The proposed turbines, where visible, will be seen within a flat plain in the background of views below the foothills. VP5 (presented in the Volume 2 Photomontage Booklet) is located within this AHA and shows that turbines appear as background elements within the view, located in a cluster with a limited horizontal extent. Views of the flat plain where the Proposed Development is located form this AHA are often expansive and the Proposed Development is absorbed within this large view. This is considered a High sensitivity landscape receptor, but considering that turbines will be seen only in the background of views (from locations within the ZTV which only partially covers the parts of this AHA within the LVIA Study Area), within a flat expansive plain capable of effectively absorbing a wind energy development of this scale, a Negligible magnitude of change is deemed to arise, and therefore, a Negative Slight residual landscape effect on the character of this AHA is deemed to arise.

Offaly Areas of High Amenity – Other Eskers

There are multiple eskers within the LVIA Study Area designated as AHAs within the OCDP. The closest esker to the Proposed Development is located approximately 7km northeast from the nearest proposed turbine, T2. In *Section 4.6.2* of the OCDP, the council recognises eskers as being a unique landscape within County Offaly and highlights the importance of including policies in the OCDP to restrict exploitation on eskers. The Proposed Development is not located directly on eskers within County Offaly, and as such will not cause direct physical changes to these landscape features. In relation to Eskers designated as AHAs, *Section 4.13.4* of the OCDP noted the value of the Eiscir Riada which traverses the north-western corner of County Offaly, outside of the LVIA Study Area. It makes no reference to the eskers located within the LVIA Study Area, although these are still designated as AHAs.

There is limited theoretical visibility of the proposed turbines to the eskers designated as AHAs located south of the Proposed Development, with these eskers generally located within the area of no theoretical visibility created by the topography of the Knockshigowna. The eskers located northeast of the Proposed Development have primarily full theoretical visibility of the proposed turbines. VP 14 is located within this line of eskers and shows that the turbines will be viewed as distant background features within views from this area. Given the lack of specific discussion relating to the scenic amenity or the contribution that views to the south from within these eskers have on the value of these landscape areas in the OCDP, this grouping of eskers to the north and northeast of the Proposed Development is considered a Medium sensitivity landscape receptor, and a Negligible magnitude of change is deemed to arise. Overall, a Negative 'Not Significant' residual landscape effect on the character of this AHA is deemed to arise. However, it is emphasised that there will be no physical changes to the eskers themselves, a primary concern of the policy and discussion contained within the OCDP.

14.7.3.1.3 Landscape Character Areas – Landscape Effects

An assessment of the effects on landscape character was undertaken for the Landscape Character Areas within the LVIA Study Area for Landscape Character (within 15km from the Proposed Development Site) that were identified as having potential for visibility of the proposed turbines in the Landscape Receptor Preliminary Assessment previously in Section 14.4.4.2.1. The individual assessments for each LCA are summarised in Table 14-21 below and are included in detail in Appendix 14-2 in this EIAR, 'Landscape Character Assessment Tables'. The assessment criteria and grading scales which aided the assessment of landscape effects are detailed in Section 1.5 of the methodology appendix – Appendix 14-1.

Table 14-21 Landscape Character Area Assessment Summary

Landscape Character Area	LCA Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect - Significance of Effect on Landscape Character (EPA, 2022)
Tipperary LCA 7 – Borrisokane Lowlands	Medium	Moderate	**Moderate**
Tipperary LCA 11 – Shannon Callows	High	Slight	**Slight**
Tipperary LCA 10 – Upper Lough Derg	High	Slight	**Slight**
Offaly ILCA 1 – Birr Plains	Low	Slight	**Not Significant**

Landscape Character Area	LCA Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect - Significance of Effect on Landscape Character (EPA, 2022)
Offaly ILCA 3 – Central Wetlands	Medium	Slight	**Not Significant**
Offaly ILCA 4 – River Shannon and Callows	High	Slight	**Slight**

As demonstrated by Table 14-21, no 'Significant' landscape effects are likely to occur on landscape character in the LVIA Study Area. The Proposed Development is located in Tipperary LCA 7 – Borrisokane. Tipperary LCA 7 has a 'Moderate' landscape character effect as a result of the Proposed Development. The remainder of the LCAs screened in for full assessment were deemed to have residual landscape effects of 'Slight' or 'Not Significant'. These effects are fully assessed and detailed in Appendix 14-2.

Discussion of Landscape Effects on LCAs

The largest magnitude of change (Moderate) will occur within Tipperary LCA 7 – Borrisokane Lowlands, as the proposed turbines will materially change the landscape of this LCA. The proposed turbines are likely to be most visible from areas within 5km of the Proposed Development Site and elevated areas within this LCA. As shown on the ZTV, majority of theoretical visibility is evident within 5km of the nearest proposed turbine, beyond 5km, there is primarily full theoretical visibility of the proposed turbines with some large patches of no theoretical visibility. On-site appraisals determined that there would be more limited visibility of the proposed turbines in parts of this LCA beyond 5km from the site due to the relatively flat topography and screening in the landscape which limit views of the turbines. There are large parts of this LCA where there will be no visibility of the Proposed Development, or where the Proposed Development will be seen as a small background feature, and so the greatest effects on landscape character will be localised to parts of the LCA in close proximity to the site (i.e. within 5km of the site).

As detailed in Section 14.4.1.1.4 – *Landscape Sensitivity Designations,* the landscape policy indicates that LCA 7 has a relatively low sensitivity designation in the context of all other LCAs in Co. Tipperary (lowest 30-40%) and a high compatibility to wind energy development in terms of land use (peat bogs and agricultural land). It is also noted that the wind energy policy for the Proposed Development Site does not designate the site as 'Unsuitable for Further Development' by virtue of landscape considerations. It is noted in the LCAT (Tipperary Landscape Character Assessment) that this LCA is given a *"Dominant Sensitivity Rating"* of Class 2 – Transitional Sensitivity in the LCAT, the third lowest of six sensitivity classes in assigned to LCAs within County Tipperary. This sensitivity is described as *"having moderate sensitivity to change"* and the objective for this type of sensitivity in the LCAT is as follows: *"Facilitate development that with capacity to continue and enhance established patterns of use and settlement without significant change to appearance or character having a moderate sensitivity to change."* In relation to land-use compatibility outlined in *Table 6.2* of the LCAT, this LCA is classified as having Low compatibility with windfarm land use, which is the second lowest out of four compatibility classifications assigned to an LCA in the LCAT. However, in relation to land use types, the Proposed Development itself is primarily located on cutover peat bog and agricultural land, which are assigned the following compatibility ratings in *Table 6.3* of the LCAT:

- Peat Bogs – 3rd highest out of 6 classes – *"likely to be compatible if sited and designed with great care."*
- Agricultural Land with Natural Vegetation – 2nd highest out of 6 classes – *"likely to be compatible with reasonable care."*

Review of the landscape policy reported above (Section 14.4.1.1.3 and Section 14.4.1.1.4) concludes that the Proposed Development is sited in a Landscape Archetype, Landscape Character Type and an LCA of relatively low sensitivity, particularly when compared with other types and LCAs in County Tipperary. Whilst the compatibility of LCA 7 for Windfarm development in relation to land use in *Table 6.2* of the LCAT is deemed to be 'Low', *Table 6.2* of the LCAT (reproduced above in Figure 14-8) indicates that of the 23 No. LCAs in the county, only four other LCAs (8, 9, 17, 18) have a higher compatibility for wind. It is noted that these other four LCAs have higher dominant sensitivity ratings than LCA 7 (where Proposed Development is sited) in *Table 5.2*, presented in Figure 14-7 above. A spatial analysis determined that these four LCAs comprise a small portion of County Tipperary, approximately 16% of the total area. LCA 8 and LCA 9 have medium compatibility for wind energy and comprise landscapes and land use types (peatlands and agriculture) very similar to that of LCA 7. as outlined above in Section 14.4.1.1.4. At a site level, land use of the site can be best described as a combination of agricultural land and peat bogs, which are deemed to be the most compatible land use types for the development of wind energy. Furthermore, comparing the landscape sensitivity and windfarm compatibility designations in the LCAT with the wind energy designations included in *Map 11* of the TRES. Spatial analysis indicates substantial incompatibility between the designations. For example, LCA 17 and LCA 18, both of which are considered the two most compatible LCAs for Windfarm land use (see Figure 14-8), have some of the largest areas of lands designated as 'Unsuitable for Further Development' in the county, including almost the entirety of LCA 18.

The WEDGs state that landscape sensitivity is the key consideration in the evaluation of areas suitable for wind energy development, and this is noted in *Section 5.2* of *Appendix 1* of the TRES. In general, it is preferable to site commercial wind energy developments in landscapes of lower sensitivity, as the change arising will ultimately result in a lower impact upon the landscape when appropriate siting and design are followed. As discussed in Appendix 14-2, it is considered that while this LCA is given a Dominant Sensitivity Rating of Class 2, the third lowest of six sensitivity classes assigned, the siting of the Proposed Development primarily on land use types with good compatibility ratings in relation to wind energy development suggests that at a project level the landscape character of the Proposed Development Site is generally suitable for this type of development. Furthermore, considering the low levels of visibility of the proposed turbines from locations beyond 5km from the site as outlined previously, the sensitivity of the parts of this LCA where the proposed turbines will actually be seen (with these tending towards compatible land use types) is not as high as the overall rating of Class 2 – Transitional Sensitivity suggests. Furthermore, it is emphasised that the sensitivity of this LCA as outlined in the policy as still relatively low in comparison with other LCAs in the county. Taking a precautionary approach, and incorporating all factors outlined above, including the sensitivity and land use compatibility ratings, this LCA is deemed to have a 'Medium' sensitivity to wind farm development. The magnitude of change is deemed to be 'Moderate'. As set out in Appendix 14-2 a 'Moderate' effect on the landscape character of this LCA is likely to occur as a result of the Proposed Development.

In addition, as further discussed below in relation to cumulative landscape effects, it is also notable in relation to this LCA that the flat agricultural plain that comprises the majority of this LCA and beyond is capable of absorbing a wind energy development of this scale, considering the existing successful accommodation of wind energy development in the landscape and the scale of the remaining landscape where turbines are not yet visible. Wind energy developments do not dominate this landscape and the addition of the Proposed Development will not substantially alter the baseline status of the LCA in this regard. There will be additional areas and locations where turbines will now be visible as a result of the Proposed Development, although again views will be intermittent as result of the flat terrain and vegetation in the landscape.

Two other LCAs are located within 5km of the nearest proposed turbine. Firstly, Tipperary LCA 11, which was deemed to have a High sensitivity to the Proposed Development (as reported in Appendix 14-2), it is located within 5km to the north of the site. This part of the LCA within 5km of the site is not the highest sensitivity part of the LCA, with the areas of higher landscape sensitivity concentrated to the west, along the banks of the River Shannon. There is limited visibility of the Proposed Development from this area of higher landscape sensitivity, with limited theoretical visibility and the presence of high levels of vegetation in locations close to the riverbanks providing screening in the direction of the

Proposed Development. A 'Slight' effect on landscape character was deemed to arise in relation to this LCA.

Secondly, Offaly ILCA 1 – Birr Plains is located within 5km to the east to the nearest proposed turbine. This LCA was deemed to have Low sensitivity to the Proposed Development and a 'Not Significant' effect was deemed to arise in relation to Landscape Character. While the ZTV indicates large areas of theoretical visibility from within this LCA, in reality, views towards the Proposed Development from locations beyond 5km from the nearest proposed turbine (which includes the vast majority of the parts of this LCA within the LVIA Study Area) will be limited due to the high prevalence of hedgerows which comprise field boundaries in this LCA.

From LCAs of High sensitivity beyond 5km from the site, (Offaly ILCA 4 – River Shannon and Callows and Tipperary LCA 10 – Upper Lough Derg) there will be very limited visibility of the Proposed Development. Given the distance of these LCAs from the proposed turbines and relatively flat nature of the intervening landscape, there will only be views of the proposed turbines from isolated elevated locations. Where turbines of the Proposed Development will be viewed as small background elements in any case, with consequently a low level of change to landscape character. From the most sensitive parts of these LCAs (River Shannon and Lough Derg), the vegetation along the riverbanks and lakeshores will provide substantial screening in the direction of the Proposed Development, with limited views in this direction available from these low lying areas. Therefore, from the most sensitive parts of these LCAs, there will be limited or no visibility of the Proposed Development. A 'Slight' effect on landscape character was deemed to arise in relation to these LCAs.

14.7.3.2 Discussion of Cumulative Landscape Effects

Cumulative impacts on the character of the wider landscape are most likely to occur as a result of the proposed turbines, where they might be visible in conjunction with other wind farm developments. A description of the cumulative visual interactions between the proposed turbines and other cumulative projects in the LVIA Study Area is included in the photomontage assessment tables contained in Appendix 14-3. A comprehensive assessment of likely visual effects arising from the intervisibility of the Proposed Development and other wind farms is included in Section 14.7.3.4 – *Discussion of Cumulative Visual Effects.*

In a cumulative context, the Proposed Development is located within a flat agricultural plain located between the Slive Bloom Mountains and Lough Derg. There is some existing wind farm development in this landscape, with the Skehanagh and Carrig wind farms located along a ridgeline approximately 4km southeast of the Proposed Development. Aside from these existing turbines there are no other turbines located within this flat plain. There are a number of factors related to cumulative landscape effects in this regard, which are discussed further in relation to specific landscape character areas in Appendix 14-2. The landscape within this plain is flat and heavily vegetated resulting in intermittent views of the existing turbines (Carrig and Skehanagh). In addition, this flat plain extends over a relatively large area with no turbines visible from large areas of land. In this regard there is capacity to absorb other wind energy development within this landscape area without 'Significant' detrimental effects on the character of the landscape. Wind energy developments do not dominate this landscape type and the addition of the Proposed Development will not substantially alter the baseline status of the landscape in this regard. There will be additional areas and locations where turbines will now be visible as a result of the Proposed Development, although again views will be intermittent as result of the flat terrain and vegetation in the landscape. The highest cumulative landscape effects will be localised to areas within 5km of the proposed turbines where visibility will be greatest. From locations beyond this, any views of the Proposed Development will be background views where the proposed turbines occupy a limited horizontal and vertical extent within views. In relation to the wider landscape, this area within 5km of the proposed turbines is relatively lower in terms of landscape sensitivity, with the areas of higher sensitivity having much more limited visibility of the Proposed Development, as outlined in the previous section. Therefore, cumulative landscape effects can be said to be limited to areas of lower landscape sensitivity in the LVIA Study Area and are concentrated in a landscape area which has

capacity to absorb further wind energy development without 'Significant' effects on its landscape character.

It is noted that there are other wind energy developments within the LVIA Study Area, and cumulative landscape effects in relation to these are fully considered in Appendix 14-2. However, given the distances between the turbines of the Proposed Development and these turbines (>12km for the Meewuan turbines which are the closest of the turbines located in County Offaly), 'Significant' effects on landscape character are not deemed to arise.

14.7.3.3 Visual Effects (Operational Phase)

14.7.3.3.1 *Selection of Photomontage Viewpoints*

Photomontages were used to assess the visual effects arising as a result of the Proposed Development from 18 no. viewpoint locations, which are presented in EIAR Volume 2: Photomontage Booklet. These 18 no. viewpoint locations are on the A0 Map – *Appendix 14-4 LVIA Baseline Map* and on Figure 14-19. The locations chosen for photomontages follow a detailed and extensive process including review of baseline information, site visits and high-quality photo taking at multiple locations within the LVIA Study Area. Many locations, which based on a desktop review had the potential for views of the site, had complete intervening screening or were screened to such an extent that the development of photomontages was not considered useful in terms of the assessment process i.e. little or no visibility towards the Proposed Development.

Multiple on-site surveys and visibility appraisals conducted throughout the 2022 and 2023 determined that visibility of the Proposed Development is greatest from the locations in close proximity to the Proposed Development due to the characteristics of the surrounding landscape. Due to this, viewpoint selection was particularly focused on locations proximate to the site, 9 of the 18 final photomontage locations are located within 5km of the site. In this regard, it is important to note that the visual impact of the proposed turbines shown in the photomontages selected for the EIAR Volume 2: Photomontage Booklet is not entirely representative of visual effects in the wider landscape of the 20km LVIA Study Area, where in reality very little visibility occurs.

Alternative Photomontage Viewpoints – Photowires

Photomontage imagery was captured from many locations in the LVIA Study Area other than the 18 no. Photomontage viewpoints that were selected for the EIAR Volume 2: Photomontage Booklet. Photowires are early-stage photomontage visualisations comprising panoramic photos with overlaid wirelines (Classified as Type 3 Visualisations in the Landscape Institute Technical Guidance Note, 2019). Photowires were produced from 18 other viewpoint locations in the LVIA Study Area. These viewpoints were not selected for inclusion in the EIAR Volume 2: Photomontage Booklet due to limited visibility of the proposed turbines. These Photowires do not form part of the assessment of visual effects included in Appendix 14-3. However, 18 no. Photowires are presented within Appendix 14-5 and they are discussed later in this section of the Chapter to illustrate certain points. The location of Photowire viewpoints in Appendix 14-5 are marked as orange icons in Figure 14-19, labelled as PWVPs (e.g., PWVP-A to PWVP-R).

14.7.3.3.2 Summary of Photomontage Viewpoint Assessment – Appendix 14-2

Visual effects were assessed using the assessment methodology described in Appendix 14-1. Each viewpoint location is shown in Figure 14-19. The individual, comprehensive and detailed assessment from the 18 no. viewpoints are presented in Appendix 14-3 of this EIAR – *Photomontage Assessment Tables* and summarised in Table 14-22 below. Appendix 14-3 and Table 14-22 should be read in conjunction with the photomontage booklet forming Volume 2 of the EIAR.

The visual effect of the Proposed Development was assessed from each viewpoint in terms of the sensitivity of the visual receptors, along with the magnitude of change, as recommended in the GLVIA 3 (2013) guidelines. This, in conjunction with a detailed review of the photomontages themselves as well as the likely visibility of the Proposed Development within the LVIA Study Area informed the assessment of visual effects.

Visualisations such as photomontages are tools that can represent the likely effect of a development and are used to inform the reader's prediction of how that development will appear in the landscape. In terms of the predicted visual quality of the Proposed Development, however, whether a visual effect is deemed to be positive, negative or neutral, this involves a degree of subjectivity. What appears to be a positive effect to one viewer could be deemed to be a negative effect by another viewer. All predicted visual effects of the viewpoints below are Long Term and Direct effects.

Table 14-22 Viewpoint Assessment Summary

VP No.	Description	Grid Ref.	Approx. distance & direction to nearest turbine	Visual Sensitivity of Receptor(s) (at viewpoint)	Magnitude of Change	Residual Significance of Visual Effect
1	View from the R489 regional road in the townland of Lisballyard, located approximately 4.7km northwest of the nearest proposed turbine. This viewpoint is located along a designated scenic route in the Tipperary County Development Plan 2022-2028.	E: 596,482 N: 706,227	4.7km SE	Medium	Slight	Slight
2	View from a local road in the townland of Clonfinane located approximately 1.3km northeast of the nearest proposed turbine.	E: 600,174 N: 703,054	1.3km SW	High	Substantial	Moderate
3	View from the N62 national road in the townland of Drumakeenan, located approximately 14.2km southeast of the nearest proposed turbine.	E: 610,385 N: 692,313	14.2km SE	Low	Slight	Not Significant
4	View from a local road in the townland of Stonestown, located approximately 18.8km northeast of the nearest proposed turbine. This is a designated viewpoint location in the Offaly County Development Plan 2021-2027.	E: 608,939 Y: 718,108	18.8km NE	Medium	Slight	Not Significant
5	View from a local road at Naylors Hill within the townland of Cumber Lower, located approximately 18.6km east of the nearest proposed turbine. This is a designated viewpoint location in the Offaly County Development Plan 2021-2027.	E: 618,038 N: 703,359	18.6km W	High	Negligible	Slight

VP No.	Description	Grid Ref.	Approx. distance & direction to nearest turbine	Visual Sensitivity of Receptor(s) (at viewpoint)	Magnitude of Change	Residual Significance of Visual Effect
6	View from a local road west of the N52, in the townland of Faddan More, located approximately 735m east of the nearest proposed turbine.	E: 600,119 N: 701,691	735m W	High	Substantial	Significant
7	View from the N52 national road in the townland of Tinlough, located approximately 4.3km northeast of the nearest proposed turbine.	E: 603,660 N: 702,304	4.3km NE	Medium	Slight	Slight
8	View from a local road on the outskirts of Birr, located approximately 6.5km east of the nearest proposed turbine in the townland of Drumbane.	E: 605,576 N: 704,140	6.5km W	Medium	Slight	Not Significant
9	View from a local road in the townland of Abbevill, located approximately 4.2km northwest of the nearest proposed turbine. This viewpoint is located along the 'Ormond Way' way marked walking trail overlooking Lackeen Castle.	E: 595,009 N: 704,383	4.2km NW	Medium	Slight	Slight
10	View from the N62 national road in the townland of in the townland of Clonkelly, located approximately 6.9km east of the nearest proposed turbine.	E: 606,301 N: 701,108	6.9km W	Medium	Slight	Not Significant
11	View from the R438 regional road in the townland of Lelagh, approximately 3.6km north of the nearest proposed turbine.	E: 599,513 N: 705,656	3.6km S	Medium	Negligible	Not Significant

VP No.	Description	Grid Ref.	Approx. distance & direction to nearest turbine	Visual Sensitivity of Receptor(s) (at viewpoint)	Magnitude of Change	Residual Significance of Visual Effect
12	View from the Cloondavaun Marina overlooking Lough Derg, in the townland of Cloonmoylan, located approximately 18.2km west of the nearest proposed turbine.	E: 580,044 N: 701,787	18.2km E	High	Negligible	Not Significant
13	View from the N65 national road in the townland of Ballycasey, located approximately 8.3km southwest of the nearest proposed turbine.	E: 591,571 N: 696,629	8.3km SW	Medium	Negligible	Imperceptible
14	View from the L3011 local road in the townland of Newtown, approximately 9.3km north of the nearest proposed turbine. This is a designated viewpoint location in the Offaly County Development Plan 2021-2027.	E: 599,092 N: 711,458	9.3km S	High	Slight	Slight
15	View from the R493 regional road, in the townland of Firmount, located approximately 8.9km west of the nearest proposed turbine. This viewpoint is located along a designated scenic route in the Tipperary County Development Plan 2022-2028.	E: 589,421 N: 701,228	8.9km E	High	Slight	Slight
16	View from the village of Carrig, in the townland of Doughkill, located approximately 2.2km east of the nearest proposed turbine.	E: 601,653 N: 701,176	2.2km E	Medium	Moderate	Moderate
17	View from a local road in the townland of Arrigmore located approximately 765m southwest from the nearest proposed turbine.	E: 598,514 N: 700,573	765m NE	High	Substantial	Significant

VP No.	Description	Grid Ref.	Approx. distance & direction to nearest turbine	Visual Sensitivity of Receptor(s) (at viewpoint)	Magnitude of Change	Residual Significance of Visual Effect
18	View from the R438 regional road, in the townland of Sharragh, located approximately 2.8km northwest of the nearest proposed turbine.	E: 597,229 N: 704,452	2.8km SE	Medium	Moderate	Slight

The assessment of visual effects determined the residual significance of the visual effects to range from 'Significant' to 'Imperceptible', with the number of findings at each level of significance listed in Table 14-23 below.

Table 14-23 Summary of Viewpoint Impact Assessment Results

Significance of Residual Visual Effect	Description	No. of Viewpoints
Profound	An effect which obliterates sensitive characteristics	0
Very significant	An effect, which by its character, magnitude, duration or intensity alters most of a sensitive aspect of the environment	0
Significant	An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment	2
Moderate	An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends	2
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities	7
Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.	6
Imperceptible	An effect capable of measurement but without significant consequences	1

The significance of the residual visual effect was not considered to be 'Very Significant', or 'Profound' at any 18 viewpoint locations. A residual effect of 'Significant' was deemed to arise at two locations, with a residual effect of 'Moderate' deemed to arise at two other locations, whilst all other viewpoints were assessed as resulting in 'Slight' (7), 'Not Significant' (5) and 'Imperceptible' (2) residual visual effects.

The viewpoint assessment results (see Appendix 14-3) will be summarised and discussed in more detail in the following sections.

14.7.3.3.3 Discussion of Visibility and Visual Effects on Specific Visual Receptors in the LVIA Study Area

The assessment of visual effects uses photomontages shown in Volume 2 Photomontage Booklet, and discussion of these effects is aided by the photowires presented in Appendix 14-5. ZTV mapping is also a useful tool for screening receptors in and out (based purely on topography) and selection of photomontage viewpoints. The ZTV indicates vast areas of the LVIA Study Area where the Proposed Development will not be visible, as comprehensively discussed in Section 14.3. The following section discusses the visual effects arising at key sensitive visual receptors within the zone of theoretical visibility and screened in for assessment previously in *Section 14.5 – Visual Baseline.*

Designated Scenic Routes and Views

15 no. designated scenic routes and views were screened out for further assessment in Section 14.5 above as the ZTV indicated that there is no visibility and visibility during the site visit was difficult to establish due to screening by topography and vegetation. The remaining seven scenic routes and views were brought forward for viewpoint assessment. In addition, one OSi Viewpoint was identified within the study area. This viewpoint (located at Rossmore Quay) was screened out as the Proposed Development will be entirely screened by intervening vegetation adjacent to the pier.

Scenic Route: South on the R489 east of Lorrha (Map Ref. T-SR52)
This scenic route has primarily full theoretical visibility with small areas of no visibility either end of the scenic route. VP1 is located along this scenic route and shows open views towards agricultural fields. The view is described in the TCDP as follows *"South on the R489 east of Lorrha"*, indicating that the focus of the scenic view is partially in the direction of the Proposed Development. However, the views from this scenic route are not of a particularly high scenic quality, are generally unremarkable, and are typical of many other views of agricultural fields within the surrounding area. There are limited long ranging views available, and visibility primarily restricted to medium range views over agricultural fields and farmsteads. The view is typical of many other views within the landscape. Considering these factors this viewpoint has been assigned a Medium sensitivity, and a Slight magnitude of change was deemed to arise. Overall, as detailed in full in Appendix 14-3, a 'Slight' residual visual effect is deemed to arise.

Scenic Route: West of the R493 north of Terryglass (Map Ref. T-SR51)
This scenic route contains a mix of partial and full theoretical visibility. VP15 represents the most open views available along this scenic route towards the turbines. The turbines are partially screened by the topography and vegetation, and at this distance appear as small features in the background of the view. The direction of the views are described in the TCDP as west of the R493 regional road, towards the Lough Derg lakelands, directed away from the Proposed Development Site, and as such the Proposed Development is not seen within the key focus of the designated views. There will be some background views of the proposed turbines from isolated elevated locations along this scenic route. Considering that long ranging views of a scenic quality are seen from this location, this viewpoint has been assigned a High sensitivity and a Slight magnitude of change was deemed to arise. Overall, as detailed in full in Appendix 14-3, a 'Slight' residual visual effect is deemed to arise.

Scenic View: Road No. L-03012 in the townlands of Glaster, Ballynasrah, Newtown, Kilmochonna with views over Little Brosna and Callows (Map Ref. O-V13)
This viewpoint, located directly north of the Proposed Development has full theoretical visibility of the proposed turbines. The direction of the view is described as *"View over Over Little Brosna and Callows."* VP14 is located at this designated scenic view. Whilst the turbines are visible from this location, they are viewed as small elements in the background of the view and do not obstruct any scenic qualities within the landscape. In particular they do not obstruct views of the Little Brosna or Callows. This viewpoint was assigned a High sensitivity and a Slight magnitude of change was deemed to arise. Overall, as detailed in full in Appendix 14-3, a 'Slight' residual visual effect was deemed to arise.

Scenic Route: R440 Killary to Ballard (Map Ref. O-SR R440)
This scenic route has primarily full theoretical visibility along the section route located within the LVIA Study Area. Plate 14-16 below shows a view from a location along this scenic route (see also Appendix 14-5 – Photowire Appendix. Due to the distance from the Proposed Development, the turbines are viewed as small elements within the background of the view and as a result of the screening provided from existing vegetation, there is limited visibility of the Proposed Development. This type of view is representative of the most open views available in this direction along the section of this scenic route within the LVIA Study Area, with no actual visibility of the Proposed Development likely to occur from the vast majority of the route as a result of roadside screening.

Plate 14-16 PWVP I located on R440 regional road in the townland of Clonbrone

Scenic View: Road No. L-07009 in the townland of Stonestown with views over bog lands and Slieve Bloom Mountains (Map Ref. O-V12)

This scenic view is located approximately 18.7km northeast of the nearest proposed turbine (T2) and has full theoretical visibility of the Proposed Development. The direction of the scenic view is not directed towards the Proposed Development and as such, the proposed turbines are not seen within the key focus of the designated view. The photomontage imagery captured for VP4 is located at this designated viewpoint. Due to the distance from the Proposed Development, intervening topography and vegetation, views will be very limited of the proposed turbines. In addition to this, the landscape character in view is already deemed a landscape with existing levels of wind energy development due to existing wind turbines visible in close proximity to this viewpoint. The sensitivity of the viewpoint was deemed to be Medium, considering that the existing view itself is comprised of high levels of wind farm development in close proximity. A Slight magnitude of change is deemed to arise, and overall, as detailed in full in Appendix 14-3, an 'Not Significant' residual visual effect is deemed to arise.

Scenic View: Road No. L-04025 in the townlands of Clonee, Cumber Lower with views westward over the farmland (Map Ref. O-V16)

VP5 represents this viewpoint which has full theoretical visibility of the Proposed Development. The direction of this viewpoint is west, directed towards the Proposed Development. However, from this distance (approx. 18.7km), the turbines are viewed as small elements in the background of the view. The view itself is open and expansive and the limited horizontal extent of turbine proposed as part of the Proposed Development is effectively absorbed within the scale of the landscape in view. This viewpoint is deemed to be a High sensitivity viewpoint on account of the designated protected view in the OCDP, and the expansive, long-ranging nature of the view itself, and a Negligible magnitude of change wis deemed to arise, as the proposed turbines are seen as very small elements in the distant background of the view, within a limited horizontal extent. Overall, as detailed in full in Appendix 14-3, a 'Slight' residual visual effect is deemed to arise.

Scenic View: Road No. L-08008 in the townlands of Grange, Belhill, Longford Big and Church Land with views towards Seir Keiran Monastic Site (Map Ref. O-V18)

This scenic view is located approx. 18km east of the Proposed Development Site. VP5 representative of this scenic view. As noted previously the turbines are viewed as small elements in the background of the view. The view itself is open and expansive and the limited horizontal extent of turbine proposed as part of the Proposed Development is effectively absorbed within the scale of the landscape in view. The designated focus of this view is the Seir Keiran Monastic Site which is located approx. 3.5km west of the designated view. As a result, the proposed turbines will be seen in the background, 14.5km beyond the focus of the view, and will thus not obstruct the designated focus of this view. This viewpoint is deemed

to be a High sensitivity viewpoint as it is a designated protected view in the OCDP, and a Negligible magnitude of change wis deemed to arise, as the proposed turbines will be seen as very small elements in the distant background of the view, within a limited horizontal extent. Overall, as detailed in full in Appendix 14-3, a 'Slight' residual visual effect is deemed to arise.

Other Visual Receptors - Settlements

Of the 23 settlements identified in the LVIA Study Area, fifteen were screened out in the 'Visual Receptor Preliminary Assessment', as the ZTV indicated that there was no theoretical visibility and/or no visibility of the Proposed Development could be established on site, or the settlements were located at such a substantial distance from the Proposed Development that 'Significant' effects were deemed not likely to arise. Hence, viewpoints were selected for the remaining 8 settlements.

Carrig

Carrig is the closest settlement to the Proposed Development Site and has primarily full theoretical visibility of the proposed turbines. VP16 was captured to represent the most open views from the village of Carrig. Due to the flat topography and close proximity to the Proposed Development Site, the turbines are viewed as tall vertical objects within the landscape and are viewed in medium proximity. However, this location provides one of the most open views towards the Proposed Development from within the village, with buildings and other infrastructure providing substantial screening in the direction of the Proposed Development from other locations. This viewpoint was assigned a Medium sensitivity on account of residents within the village of Carrig, the closest settlement to the Proposed Development, and a Moderate magnitude of change was deemed to arise. Overall, as detailed in full in Appendix 14-3, a 'Moderate' residual visual effect is deemed to arise.

Aglish

The rural settlement cluster of Aglish is located within 5km of the Proposed Development and has primarily full theoretical visibility with a small patch of no theoretical visibility to the southeast of the settlement. As seen in Plate 14-17, the turbines are entirely screened from view by existing vegetation. This is type of screening is prominent throughout the settlement cluster and visibility will be limited throughout. This is a Medium sensitivity receptor and given the level of likely visibility from Algish, a Negligible magnitude of change is deemed to arise. Given the level of likely visibility from Aglish an 'Imperceptible' residual visual effect is deemed to arise in relation to the Proposed Development.

Plate 14-17 PWVP P – View of Proposed Development in Aglish

Ballingarry

The rural settlement cluster of Ballingary is located 5km south of the Proposed Development and has primarily full theoretical visibility of the Proposed Development with large patches of no theoretical visibility to the west and east of the settlement. Plate 14-18 below shows a view from the N52 national road approximately 2km south of Ballingarry, showing an open view towards the Proposed Development. The turbines are seen as small elements within the background of the view with substantial screening from existing vegetation. Views from the settlement will be similarly screened within this flat and heavily vegetated landscape. This is a Medium sensitivity receptor and given the level of likely visibility from Ballingarry, a Slight magnitude of change is deemed to arise. Overall, a 'Slight' residual visual effect is deemed to arise in relation to the Proposed Development.

Plate 14-18 Photowire 28 of Proposed Development from the N52

Rathcabbin

The village of Rathcabbin is represented by VP1, although it is noted that this viewpoint is located approx. 600m closer to the Proposed Development than Rathcabbin. The settlement has large areas of theoretical visibility with some patches of no theoretical visibility to the south. From VP1, the proposed turbines are visible as moderately scaled elements within the background of the view. There are some locations within the settlement where open views in the direction of the Proposed Development will be available. Rathcabbin is a Medium sensitivity receptor, and a Slight magnitude of change was deemed to arise at VP1. Therefore, given the level of likely visibility and the scale of the Proposed Development at this distance, from Rathcabbin a 'Slight' residual visual effect is deemed to arise in relation to the Proposed Development.

Riverstown

The village of Riverstown, located along the N52 national road to the southwest of Birr has primarily full theoretical visibility of the Proposed Development. Riverstown is located approx. 750m south of VP8, this photomontage shows a view from a location at higher elevation than Riverstown and views from the settlement itself will be more substantially screened than shown in VP8. However, the proposed turbines will be of a similar scale to that shown in VP8 when viewed from the settlement. A photowire was captured approx. 800m west of Riverstown along the N52 which is shown in Plate 14-19 below. From this location which is of lower elevation than VP8, it is seen that the turbines are substantially screened by the topography and existing vegetation within the landscape from this area. Riverstown is a Medium Sensitivity receptor and a Slight magnitude of change is deemed to arise. Given the level of likely visibility and the scale of the Proposed Development at this distance, from Riverstown a 'Slight' residual visual effect is deemed to arise in relation to the Proposed Development.

Plate 14-19 PWVP J - View of Proposed Development long the N52 from the village of Riverstown

Birr

Birr has multiple patches of no theoretical visibility of the proposed turbines, however there are also large areas of full theoretical visibility within the town. VP8 was captured from the outskirts of Birr to represent views for the residential receptors of Birr town. With Birr being located approx. 7km from the Proposed Development, turbines will be seen as small background elements where views are available. However, it is noted that the built infrastructure of the town itself will restrict the majority of views towards the Proposed Development from within the town itself. The type of view shown in VP8 will only occur from elevated locations on the outskirts of the settlement, with no visibility of the proposed turbines likely to occur from the majority of the locations within the town. The town of Birr is considered a Medium sensitivity receptor, and a Slight magnitude of change was deemed to arise at this viewpoint. Overall, given the level of likely visibility and the scale of the Proposed Development at this distance, from Birr a 'Slight' residual visual effect is deemed to arise in relation to the Proposed Development. Visual effects from the Birr Castle and Demesne are discussed below in the following subsection.

Crinkle

The village of Crinkle has primarily full theoretical visibility of the Proposed Development. VP8 represent the visual impacts on the residential receptors of Crinkle with the settlement located on slightly elevated terrain, similar to that viewpoint. The settlement of Crinkle is considered a Medium sensitivity receptor, and a Slight magnitude of change was deemed to arise at this viewpoint. A 'Not Significant' visual effect was deemed to arise in relation to that viewpoint. The proposed turbines will be viewed as small elements within the background of the view. In addition, it is noted that there will be substantial screening in the direction of the Proposed Development from the built infrastructure of the settlement.

Banagher

The settlement of Banagher is located 13.3km north of the Proposed Development and has some patches of theoretical visibility of the Proposed Development at the southern extent of the settlement. VP14 is located at a similar geographical orientation to Banagher and is representative of views from the southern extent of this settlement. Although it is noted that this viewpoint is located approx. 4km closer to the proposed turbines than the settlement and consequently the turbines will appear as much smaller vertical elements within views form the town. The landform intervening between Banagher and the proposed turbines slopes downwards from the settlement and views towards the Proposed Development will be available. However, at this distance the turbines will be very small background elements within views. The settlement of Banagher is considered a Medium sensitivity receptor, and a Slight magnitude of change was deemed to arise at this viewpoint. Overall, given the level of likely visibility and the scale of the Proposed Development at this distance, from Banagher a 'Slight' residual visual effect is deemed to arise in relation to the Proposed Development.

Other Visual Receptors – Recreational Routes and Tourist Destinations

Of the 11 recreational and tourist destinations identified within the LVIA Study Area, six were screened out in the 'Visual Receptor Preliminary Assessment', as the ZTV indicated that there was no theoretical visibility and/or no visibility of the Proposed Development could be established on site. Hence, viewpoints were selected for the remaining five recreational and tourist destinations and waymarked routes.

Ormond Way

The Ormond Way runs through a large portion of the LVIA Study Area, with primarily full theoretical visibility with small patches of no visibility. The waymarked route enters the LVIA Study Area to the south of the Proposed Development and finishing at a wooded area at Dromad near Portumna and passing within approx. 2km of the nearest turbine at its closest point. Visibility of the Proposed Development is likely to occur at multiple locations, particularly within 5km of the Proposed Development, which comprises and approx. 12km stretch of the route. Photowires 14 and 36, as well as VP9 show views from various geographic orientations along this part of the route within 5km of the site. Photowire 36, shown above in relation to the settlement of Aglish, shows that from this location along the route. views towards the Proposed Development are substantially screened by existing vegetation, which will also be the case for large stretches of the route within 5km of the site, in this flat and heavily vegetated landscape. PWVP J (Plate 14-20 below) is located along the Ormond Way, approximately 2.8km northwest from the nearest proposed turbine (T7). Due to the topography and screening elements existent within the landscape, the turbines are well screened, although there are a number o turbine hubs and blades visible.

Plate 14-20 PWVP J - Ormond Way in the townland of Abbeville

VP9 is also located along the Ormond Way to represent views of the proposed turbines from Lackeen Castle, located approximately 4.1km northwest of the Proposed Development. The turbines are partially visible in the far background of the image due to screening from existing vegetation. A residual visual effect of 'Slight' was deemed to arise at this viewpoint. Overall, the majority of the route will fundamentally remain the same in terms of the character of the views available, with large stretches of the route within the LVIA Study Area (primarily all locations outside of 5km from the site) having no or very limited visibility of the proposed turbines. There will be views of turbines from locations within 5km of the site, and the types of views available have been shown here through the use of photowires of VP9. It is evident that there will be no 'Significant' visual impacts on the character of the views available from the route. The route itself is considered a Medium sensitivity viewpoint, and Moderate magnitude of change is deemed to arise on the viewpoints located closest to the proposed turbines. Considering the overall length of the route, and the type of visibility demonstrated here, it is considered that a 'Moderate' residual visual effect is deemed to arise in relation to the Proposed Development, although this is limited the section of this route located within 5km of the site.

Birr Cycle Hub Route 3/3A/3B

The Birr Cycle Hub Route is primarily located to the east of the Proposed Development and extends beyond the LVIA Study Area. The routes have primarily full theoretical visibility along the stretches within the LVIA Study Area with small patches of no visibility. PWVP I, shown above in Plate 14-16 shows a view from this route to the east of Birr, where turbines are substantially screened from view as a result of their scale at this distance and the screening existent in the landscape. This Photowire shows that from many locations along the route, even where roadside screening fails to screen the turbines, at this distance within a flat landscape, the hedgerows bordering fields will screen views of the proposed turbines from large stretches of the route. VP14 and VP4 are also representative of the types of open views towards the Proposed Development that will be available from locations along this route, with a 'Slight' and 'Not Significant' residual visual effect deemed to arise at these locations, respectively. Overall, this route is considered a Medium sensitivity receptor and that the magnitude of change will generally be 'Slight' (VP14 and VP4). Overall, it is deemed that no 'Significant' visual effects are likely to arise on this cycle route considering the types of views of the proposed turbines that will be available from along the route and the high levels of screening from vegetation present in the landscape.

Birr Cycle Hub Loop 4

Birr Cycle Hub Loop 4 is located east of the Proposed Development Site with large areas of no theoretical visibility between 10-15km from the site, due to the undulating topography present towards the Slieve Bloom Mountains. The route does follow a large stretch of the N62, located approximately 7km east of the nearest proposed turbine. VP10 shows a view from along this stretch of the road. The proposed turbines are substantially screened by the existing vegetation within the background of the view from this location. This viewpoint was assigned a Medium sensitivity on account of the cycle route, and a Slight magnitude of change was deemed to arise. Overall, as discussed in detail in Appendix 14-3, a 'Not Significant' residual effect is deemed to arise. This is from the closest location along the cycle route to the Proposed Development. Visibility of the Proposed Development along this route will be limited due to the distance and screening from locations beyond 10km of the nearest turbine. Overall, it is deemed that no 'Significant' visual effects are likely to arise on this cycle route considering the types of views of the proposed turbines that will be available from along the route and the high levels of screening from vegetation present in the landscape, as well as the large stretches with no theoretical visibility.

Birr Cycle Hub Loop 5

This cycle loop is located northeast of the Proposed Development with stretches primarily of full theoretical visibility within 15km of the nearest proposed turbine and large patches of no visibility beyond 15km. VP14, located slightly west of the Birr Cycle Loop 5, shows the turbines as small elements in the background of the view, where the residual effect is deemed to be 'Slight'. This viewpoint was assigned a High sensitivity on account of the designated scenic view at this location, and the sensitivity of receptors travelling along the Birr Cycle Hub Loop 5 are considered to be Medium sensitivity receptors. The closest stretch of this route to the proposed turbines is located along a local road approximately 6km northeast of the nearest proposed turbines. Plate 14-21 below shows PWVP C, which was captured along the R489 regional road, located directly between Birr Cycle Hub Loop 5 and the Proposed Development. As seen in Plate 14-21 below, the turbines will be substantially screened by the intervening topography and vegetation. Theoretical visibility along the stretch of the route closest to the proposed turbines is patchy, with visibility likely as intermittent along this stretch of the route. Overall, it is deemed that no 'Significant' visual effects are likely to arise on this cycle route considering the types of views of the proposed turbines that will be available from along the route and the high levels of screening from vegetation present in the landscape.

Plate 14-21 Photowire 5 along R489, adjacent Birr Cycle Hub Loop 5

Birr Castle and Demesne

Birr Castle and Demesne is located approximately 7km northeast from the nearest proposed turbine, in the town of Birr. Full theoretical visibility of the proposed turbines is indicated for this location. However, on site visibility appraisals determined that there will be no views of the proposed turbines from within the Demesne itself. This can be seen in the photowires shown below in Plate 14-22 and Plate 14-23, where the proposed turbines are shown to be fully screened from view by the intervening dense vegetation located within the surroundings of the Demesne.

Plate 14-22 PWVP D - Birr Demesne

Plate 14-23 PWVP E - Birr Demesne

Other Visual Receptors – Major Transport Routes

Of the six major transport routes identified within the LVIA Study Area, one was screened out in the 'Visual Receptor Preliminary Assessment', as the ZTV indicated that there was no theoretical visibility and/or no visibility of the Proposed Development could be established on site. Hence, viewpoints were selected for the remaining five transport routes. All the viewpoints below are discussed in greater detail above and in the photomontage assessment tables contained in Appendix 14-3. The Route Screening Analysis undertaken above in Section 14.3.4 details the likely visibility of the roads surrounding the site, including smaller local roads, there are no 'Significant' effects deemed likely to arise in relation to these transport routes.

N52 National Road

This is the closest national road to the Proposed Development in the LVIA Study Area that connects Birr with a number of smaller settlements including Carrig, Ballingarry and Borrisokane. The N52 national road has primarily full theoretical visibility along its extent, particularly within 5km of the site. VP 7 is located along this route approx. 4.3km from the nearest proposed turbine, and was deemed to be a Medium sensitivity receptor on account of the national road. A Slight magnitude of change was deemed to arise. Overall, a residual effect of 'Slight' was deemed to arise at this location due to screening in the landscape and the limited horizontal extent of the turbines within the view. VP16 is also located along this route, from within the village of Carrig. This viewpoint was deemed to be a Medium sensitivity receptor and a Moderate magnitude of change was deemed to arise. A residual visual effect of 'Moderate' was deemed to arise at this location. An additional photowire (see Plate 14-24 below) was captured along the national road, approximately 2.2km southwest from the rural settlement cluster of Ballingarry. The turbines are substantially screened by vegetation present within the landscape, although the blade tips are visible within the background of the view. This is typical of views from locations outside of 5km. Overall, there will be views of the Proposed Development along the stretch of the N52 within 5km of the site, with these views becoming more intermittent and better screened beyond 5km. At the closest viewpoint along the N52 (VP16) a residual visual effect of 'Moderate' was deemed to arise, although this visual effect reduces with distance as evidenced by VP7. Overall, considering that the proposed turbines will be seen intermittently along the route, with differing levels of screening at different locations, and that the closest point along the road to the proposed turbines was deemed to experience a 'Moderate' visual effect, it is considered that no 'Significant' effects will arise in relation to visual receptors travelling along this route. Cumulative visual effects in relation this route are discussed below in Section 14.7.3.4.

Plate 14-24 PWVP L - captured along the N52, southwest of Ballingarry

R489 Regional Road

The R489 regional road traverses the northern half of the LVIA Study Area and passes within 4.1km of the nearest proposed turbine at its closest point. There is primarily full theoretical visibility along this route. There are two photomontage viewpoints located along this route, VP6 and VP1, at which residual visual effects of 'Not Significant' and 'Slight' were deemed to arise, respectively. Both viewpoints were deemed to be Medium sensitivity viewpoints, and the magnitude of change was Negligible (VP11) and Slight (VP1). Two other photowires were captured from locations further east along this road, located approx. 4.1km northeast of the nearest proposed turbine. These are shown in Plate 14-25 and Plate 14-26 below, where screening from topography and vegetation in the landscape can be seen to limit views of the proposed turbines. Overall, considering that the proposed turbines will be seen along the route, with differing levels of screening at different locations, and that the closest point along the road to the proposed turbines was deemed to experience a 'Not Significant' visual effect (VP11), it is considered that no 'Significant' effects will arise in relation to visual receptors travelling along this route.

Plate 14-25 PWVP B, view from the R489 regional road looking south

Plate 14-26 PWVP C view from the R489 regional road looking south

R438 Regional Road

The R438 regional road is located to the northwest and west of the Proposed Development with primarily full theoretical visibility indicated by the ZTV. The majority of this route is located within 5km of the nearest proposed turbine. VP18 is located along this route, and was deemed to be a Medium sensitivity viewpoint, and a Moderate magnitude of change was deemed to arise. The residual

visual effect deemed 'Slight' at this location. The baseline view from this location and along the route in general is unremarkable and is typical of many other views of agricultural fields within the surrounding area. The proposed turbines are seen in the background of the view and do not obstruct any sensitive or scenic views from this viewpoint. There will be no 'Significant' effects that will arise in relation to visual receptors travelling along this route.

N65 National Road

This national road is located west of the Proposed Development Site entering the LVIA Study Area north of Portumna and then connects Borrisokane with Portumna before continuing south towards Nenagh, where it exits the LVIA Study Area. There are large stretches of the road with theoretical visibility of the Proposed Development. However, as the road only passes within 8.3km of the nearest proposed turbine at its closest point, and travels along relatively flat terrain, visibility of the Proposed Development is limited from the majority of the route. VP13 was captured along this route, and was deemed to be a Medium sensitivity viewpoint, with the magnitude of change determined as Negligible. Residual effects were deemed to be 'Imperceptible' due to the substantial screening of the turbines by dense vegetation in the background of the view. This viewpoint actually shows an open view from along this road from a location where the road passes closest to the Proposed Development. There will be no 'Significant' effects that will arise in relation to visual receptors travelling along this route.

N62 National Road

The N62 national road is located to the east of the Proposed Development connecting the towns of Roscrea to Birr. There are large stretches of this route with theoretical visibility indicated on the ZTV. The route itself passes within 6.7km of the nearest proposed turbine at its closest point. VP 3 (Low sensitivity viewpoint with a Slight magnitude of change) and VP 10 (Medium sensitivity viewpoint with a Slight magnitude of change) are located along this route, where residual visual effects for both viewpoints were deemed to be 'Not Significant'. Views from this route are limited beyond 10km of the nearest proposed turbine, where the turbines are viewed as small background features view and will only be seen from isolated elevated locations along the route. As seen from VP 10, the turbines are viewed as slightly larger elements within 10km of the nearest proposed turbine, however, they are still substantially screened by existing vegetation within the background of views. Due to the distance of this national road from the Proposed Development Site, views will be limited towards the proposed turbines. There will be no 'Significant' effects that will arise in relation to visual receptors travelling along this route.

There will be no 'Significant' visual effects on any of the transport routes assessed above. Cumulative visual effects arising in a journey scenario where multiple views of wind turbines will occur at different points for a visual receptors travelling along the N52 are addressed below in Section 14.7.3.4.

14.7.3.3.4 Residential Visual Amenity

The Proposed Development is located in a flat landscape, well set back from sensitive landscape and visual receptors, large population centres and receptors protected in local planning policy. During the site selection process, early stage LVIA appraisals identified local residential receptors as the most sensitive receptors with the greatest potential to be adversely impacted by the proposed turbines with regard to visual impacts. Consequently, residential visual amenity was of key consideration during site selection and throughout the iterative design process for the Proposed Development. This section of the LVIA firstly states how design measures have been used to mitigate the potential for significant visual effects on some areas of residential amenity, then an overview of the residential context in terms of population density in the surrounding area and the geographic arrangement of residential properties in proximity to the site. Finally, a visual impact assessment of each cluster of residences is reported, these assessments use analysis of aerial maps, photomontages and photowire visualisations with the intention of identifying the worst case scenario for potential visual effects on residential receptors.

Design Considerations and Alternatives

During the design of the Proposed Development early stage LVIA appraisals were conducted using photomontage visualisations which informed the final layout and siting of turbines. As detailed in full in Chapter 3 and elsewhere in this EIAR, the spatial extent of the proposed turbines has reduced from initial stages. Layout iterations 1, 2 and 3 (Shown in Figures 3-3, 3-4, and 3-5 in Chapter 3) included two turbines clusters. As well as the slight visual incongruity arising from the two turbine clusters, effects on residential visual amenity was of primary consideration in the iterative design process. In mind of this (and other project constraints), and as a result of early stage photomontages, the turbine layout was further refined to remove turbines to the northwest as shown by the difference between iterations 3 and the final proposed turbine layout. This substantial design change is illustrated in the image below.

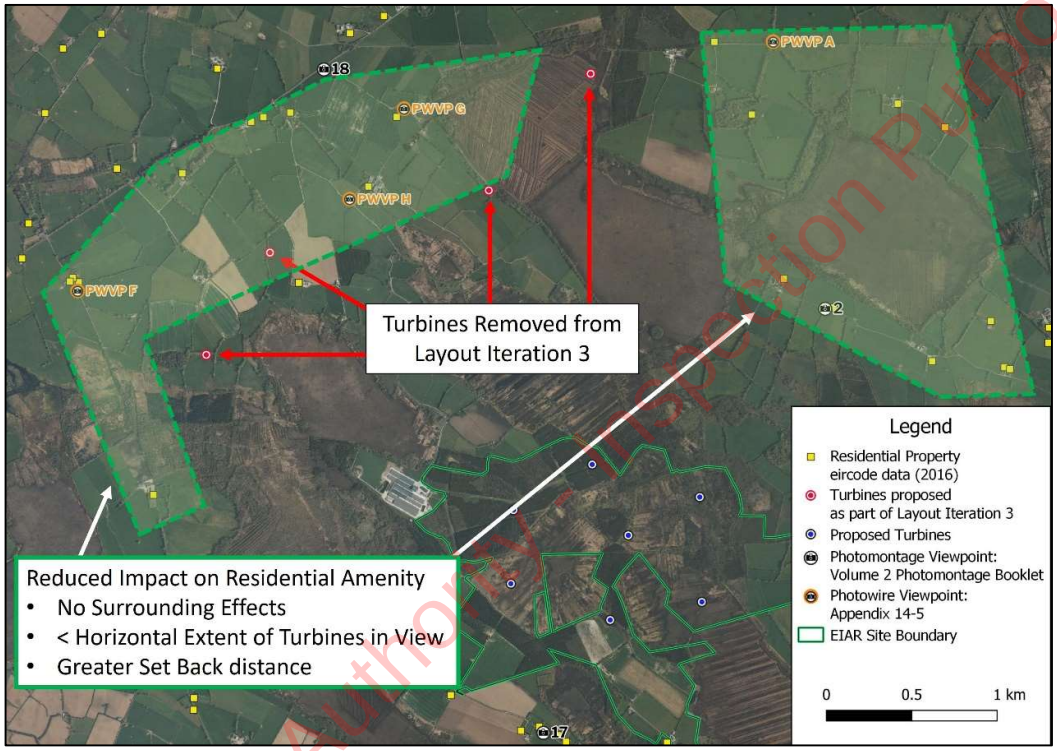

Figure 14-20 Iterative Design of the Proposed Turbine Layout

The result of this design change (removal of the northern turbines) substantially reduced the potential for significant visual effects for the following reasons:

- A substantial reduction in the horizontal extent of turbines visible from nearby residential receptors surrounding the site;
- Reduce the potential for any surrounding effects on residential amenity;
- A much greater set back distance of turbines from residential receptors to the north, east and west.

The Proposed Development design process has also been informed by set-back distances, with regard to the siting of turbines in proximity to residential dwellings, the Proposed Development adheres to the recommended 500m set back distance in the WEDGs (DoEHLG, 2006) and also the 4 times tip height set-back distance set out for residential visual amenity prescribed by the draft WEDGs (DoHPLG, 2019).

Residential Context - Population Density and Arrangement of Dwellings

As reported in the landscape baseline (see Section 14.4.2 *Landscape Character of the Proposed Development Site)*, the site is a large uninhabited area characterised by cutover peatland and forestry. Figure 14-21 illustrates how the proposed turbines are set back from residential receptors in the surrounding landscape and that the distances are compliant with the guidance in the WEDGs and draft WEDGs. The map also illustrates how the uninhabited areas of peatland and forestry to the north and west increase set back distances whilst providing a substantial landscape buffer between the proposed turbines and these receptors. In general, the wider landscape setting of the site beyond the peatland and forestry comprises marginal farmland of relatively low population density, a description which also aligns with description of the *Wet and Mixed Peatland Landscape Type* designation in the local landscape policy (LCAT – See section 0), which defines these landscape types as:

> *"The plains also contain large areas where impeded drainage and peat formation give rise to less densely inhabited areas and more marginal agriculture"*

The above definition is true of the site and the surrounding landscape. The population of the four No. District Electoral Divisions (DED)s within and surrounding the Proposed Development Site is detailed in Chapter 5 – Population and Human Health. As shown in Table 5-2 in Chapter 5 – Population and Human Health of this EIAR, the population density of DEDs, recorded during the 2016 Census was 16.36 persons per km^2. This figure is significantly lower than the national population density of 67.76 persons per km^2 and the Tipperary County population density of 37.06 persons per km^2. These findings indicate that the landscape surrounding the Proposed Development Site has a relatively low population density.

As shown by Figure 14-21, the densest cluster of nearby residential receptors in closest proximity to the proposed turbines are arranged along a network of small local roads to the southeast of the site, in proximity to Carrig village. The lands to the northeast, north and west are sparsely settled, although there are occasional one off dwellings located along the roads in these areas. The map illustrates locations where photomontage and photowire imagery was captured to inform the impact assessment of the various residential clusters surrounding the site.

Assessment of Residential Amenity - Photomontages

A large number of viewpoints (5 of the 18) were taken within 3km of the proposed turbines, with a further 4 viewpoints located between 3-5km from the site, amounting to a total of 9 of 18 viewpoints located within 5km of the proposed turbines (along with an additional 9 no. photowire viewpoints not ultimately brought forward as photomontages, although these can be seen in Appendix 14-5).

Photomontages are just one of the tools employed during the LVIA that was conducted in order to inform the assessment of landscape and visual effects. It would be a disproportionate measure to include an individual photomontage from every residential dwelling and this is not required to conduct a thorough and robust assessment of landscape and visual effects. In line with the guidance laid out in the GLVIA (GLVIA 3, 2013), the viewpoints selected for the LVIA conducted were informed by a range of factors including the *"ZTV analysis, by fieldwork, and by desk research"* (para 6.18, GLVIA 3, 2013). Furthermore, the GLVIA (GLVIA 3, 2013) states that representative viewpoints are *"selected to represent the experience of different types of visual receptor, where larger numbers of viewpoints cannot all be included individually and where the significant effects are unlikely to differ"* (para 6.19 GLVIA 3, 2013). The large number of viewpoints used in the conduct of the LVIA particularly in very close proximity to the proposed turbines are sufficient to represent the residential receptors within the LVIA Study Area, including the *"distribution of population"* (para 6.18, GLVIA 3, 2013).

Three photomontage viewpoints are located within 1.5 km of the proposed turbines. VP2, VP6, and VP17 were all taken from local roads in townlands adjoining the Proposed Development Site. These viewpoints were specifically selected to assess the visual effects on residential amenity and receptors of local community importance in close proximity to the Proposed Development. Visual effects are rated

of relatively high significance ('Significant' and 'Moderate') from these areas due to the close proximity to the proposed turbines where the magnitude of change is greatest, and the sensitivity is relatively high in respect of local residents who live in close proximity. These three viewpoints were strategically selected where there are relatively open views in very close proximity to both residents and the proposed turbines with limited screening. 'Moderate' and 'Slight' residual visual effects were recorded for VP18 and VP16, which are also viewpoints located in close proximity to the proposed turbines (<3km) and are representative of local residential amenity, along with VP11 (residual visual effect of 'Not Significant'), VP1 (residual visual effect of 'Slight'), VP7 (residual visual effect of 'Slight'), and VP9 (residual visual effect of 'Slight'). This indicates that as a result of factors such as distance in a flat landscape, and screening from vegetation cause visual effects on residential receptors to dramatically decrease beyond 3km from the proposed turbines. It is also noted that this is informed by Section 14.3.3 above and in particular the disproportionate screening effect illustrated in Figure 14-3.

The following discussion of effects on residential visual amenity is informed by the nine viewpoints mentioned above, photowires included in Appendix 14-5, the mapping outcome of the Route Screening Analysis and other information gathered during site surveys.

Residential Receptors within 1.5km of the proposed turbines – Townlands of Faddan more, Arragh Beg & Arrigmore

VP6 and VP17 are both viewpoints located adjacent to the closest residential receptors to the proposed turbines, with VP6 representative of four residential receptors located with 800m of the nearest proposed turbine to the east of the site, located along the L5041 local road, locally known as Fadan Lane. In relation to these receptors, the Proposed Development adheres to the recommended 500m set back distance in the WEDGs (DoEHLG, 2006) and also the 4 times tip height set-back distance set out for residential visual amenity prescribed by the draft WEDGs (DoHPLG, 2019). This viewpoint was considered to be a High sensitivity viewpoint, on account of the residential receptors represented that are located in close proximity to the proposed turbines. The magnitude of change for this viewpoint was deemed to be Substantial, considering the scale of the closest turbines in the view. A residual visual effect of 'Significant' was deemed to arise in relation to the receptors located adjacent to the viewpoint. There are additional receptors located further east along this road (L5401) towards VP16, which is located in the village of Carrig itself. As seen on Figure 14-21 the roadside screening along this stretch of road is a mixture of 'Intermittent/Partial Screening' and smaller stretches of 'Little/No Screening' 'Full Screening', with partial screening of the turbines also likely to occur from residences along this part of the road, and as discussed further below, the scale of the turbines will reduce within views from receptors located closer to VP16.

VP17 is representative of 7 no. residential receptors located within 800m of the nearest proposed turbines to the southwest of the site. Again, in relation to these receptors, the Proposed Development adheres to the recommended 500m set back distance in the WEDGs (DoEHLG, 2006) and also the 4 times tip height set-back distance set out for residential visual amenity prescribed by the draft WEDGs (DoHPLG, 2019). This viewpoint was considered to be a High sensitivity viewpoint, on account of the residential receptors represented that are located in close proximity to the proposed turbines. The magnitude of change for this viewpoint was deemed to be Substantial, considering the scale of the closest turbines in the view. A residual visual effect of 'Significant' was deemed to arise in relation to the receptors located adjacent to the viewpoint.

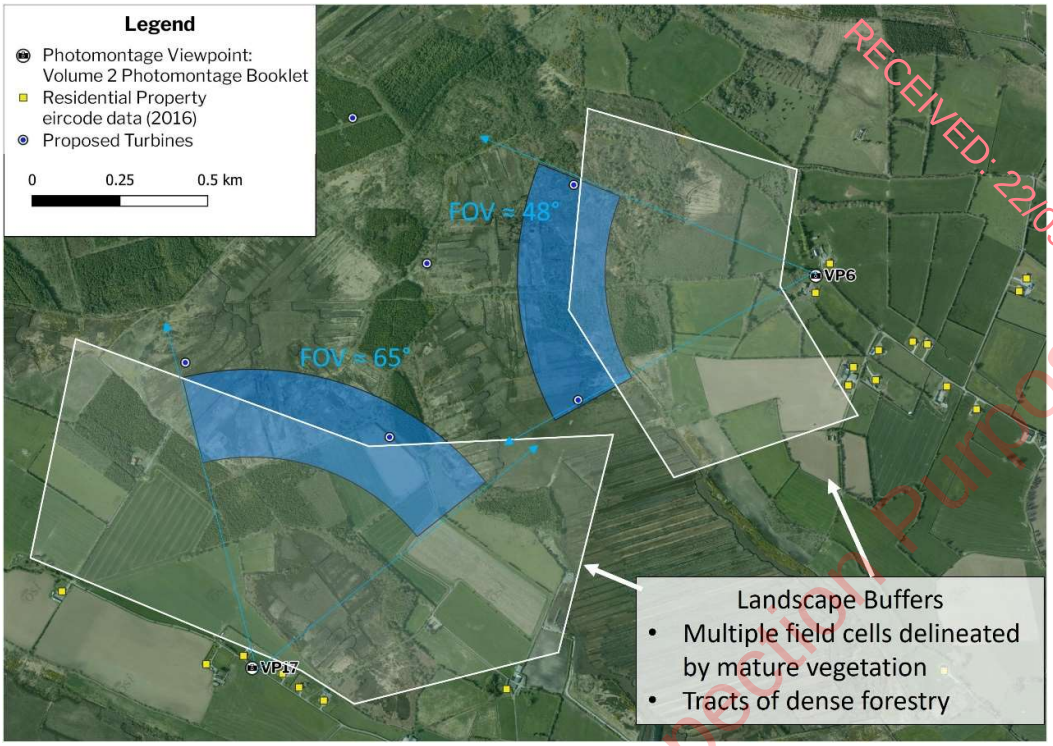

Figure 14-22 Horizontal Fields of View of the closest residential receptors

The map above (Figure 14-22) shows the location of residences in proximity to VP 6 and VP 17 in relation to the proposed turbines. Whilst significant residual visual effects are deemed to arise in mind of the substantial change and high sensitivity of these few local receptors, these effects were considered during the early stage LVIA appraisals. In these instances, the statutory set back distance recommendations (4 x tip height in the draft WEDGs) are deemed to be appropriate in mind of the physical buffers in the intervening landscape and the flat nature of the land in these areas and the disproportionate screening effects which occurs. As shown by the photomontages (VP6 and VP17) mature vegetation in the intervening landscape screens lower elements of the proposed turbines from view and somewhat reduces their visual prominence than would be the case if there were unobstructed views towards the turbines from these receptors.

For both of these viewpoints (VP6 and VP17) it is noted that whilst the turbines are large features in the view, the proposed turbines are always viewed above the treelines and do not obstruct or interfere with any long ranging, sensitive, or scenic views from these locations. It is also noted that whilst the proposed turbines do constitute a substantial change in one area of residential scenic amenity, they do not comprise a large horizontal extent of views (<65º of 360º, equating to 18% of the horizontal field of view in most instances). The baseline views are generally unremarkable and are typical of many other views of agricultural fields and forestry within the surrounding area. The turbines will be seen as large vertical features within views from these residential properties, however, given the relatively lower base elevations of the turbines in relation to these receptors (see Figure 14-14 above), the field structure, vegetation, and other landscape elements seen throughout these views act as a physical landscape buffer and provide a sense of scale in relation to the setback distance of the turbines, with turbines viewed as sited beyond multiple fields or behind a treeline. These are the only residential receptors identified within the LVIA Study Area for which these residual visual effects will arise.

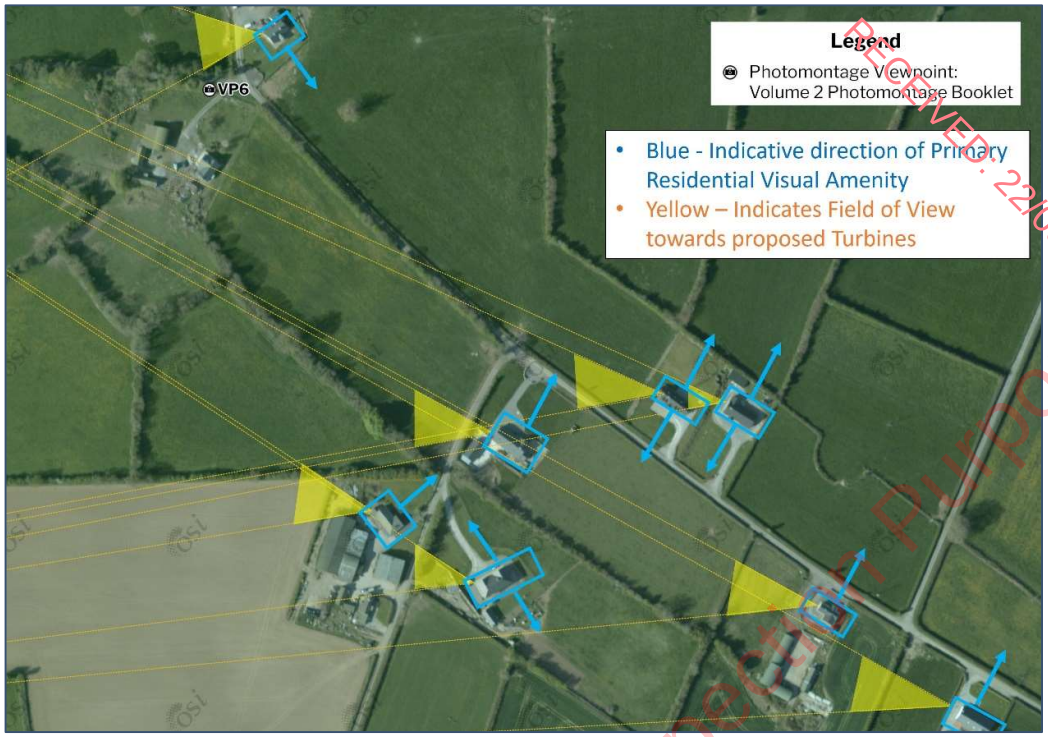

Figure 14-23 Orientation of Primary Views from Properties

Site visits determined that whilst the proposed turbines will likely be seen from many gardens (where screening does not occur) and access tracks in the area, many of the houses (particularly along Faddan Lane near VP6) are oriented in a way that the field of view towards the Proposed Development is at the gable end of the house. In these instances (as illustrated in the Figure 14-23 above), the proposed turbines will comprise peripheral views instead of primary views such as that from living rooms and kitchens which are oriented in other directions, away from the proposed turbines. Where they do occur, the views in the direction of the proposed turbines from these receptors are generally short distance views of a common rural landscape and it cannot be said the proposed turbines impact upon any of the more sensitive scenic amenity experienced by residential receptors in the area.

From locations further east and south of VP17 and VP6 (townlands of Faddan More and Arrigmore), the scale of the proposed turbines will be reduced in views, with vegetation existent in the landscape giving rise to screening effects that become more pronounced the further from the turbines a receptor is located. This effect can be seen in PWVP K, reproduced below and which can be seen in Appendix 14-5, which is located 2.5km south of the nearest proposed turbine.

Plate 14-27 PWVP K

VP2 is also demonstrative of the effect that distance has in this area within 1.5km of the nearest proposed turbine and is an illustrative example of the scale of the proposed turbines when viewed from locations along the eastern sections of the L5401 and L5040 local roads. A residual visual effect of 'Moderate' was deemed to arise at this location. From this distance (approx. 1.3km away), the scale of nearest turbine is much reduced in relation to VP6 (approx. 735m away) and VP17 (approx. 765m away). As a result of the iterative design process, the turbines are viewed as a coherent cluster with a smaller horizontal extent within the view. This viewpoint demonstrates that that scale of the turbines reduces quickly with increased distance, which in this flat heavily vegetated landscape, will increase the likelihood that screening of the proposed turbines will occur (also noticeable in Plate 14-27 above).

Residential Receptors beyond 1.5km from the proposed turbines

As can be seen in Figure 14-21, between 1.5-3km from the nearest proposed turbine, the local roads to the east have a mixed class of screening, with limited instances of long stretches of Little/No Screening, meaning that views of turbines from these roads and receptors in this area will in general be intermittent. To the south, the local road network has less screening, with two large stretches of Little/No Screening apparent, although again see the screening effect that occurs from this orientation in Plate 14-27 above. To the west, the local road network contains large stretches classed as having Full Screening.

VP18 and VP16 demonstrate that within 3km of the site, but beyond 1.5km, the scale of turbines reduces dramatically within views where available, an effect that is also noticeable from locations beyond 3km, as seen from VP1, VP9 and VP7. For residential receptors located in this part of the LVIA Study Area, there will be relatively minor effects on residential visual amenity, with screening in the landscape having a greater effect at these distances as seen in VP11 (see also Section 14.3.3 above). This is further evidenced through photowires PWVP A, PWVP G, PWVP H, PWVP K, and PWVP F (see Appendix 14-5), which demonstrate that screening in the landscape begins to frequently obstruct (both partially and completely) views towards the turbines from this distance.

It can also be seen on Figure 14-21 that the area to west and north of the proposed turbines is essentially uninhabited, with no residential receptors located in close proximity to the area surrounding the Sharragh Pig Farm. The closest residential receptor in this direction is receptor no. 60, which is located approximately 2.1km from the nearest proposed turbine. PWVP H, shown below in Plate 14-28 and in Appendix 14-5, and PWVP G (Plate 14-29) illustrate the views available from receptors located at this distance and orientation.

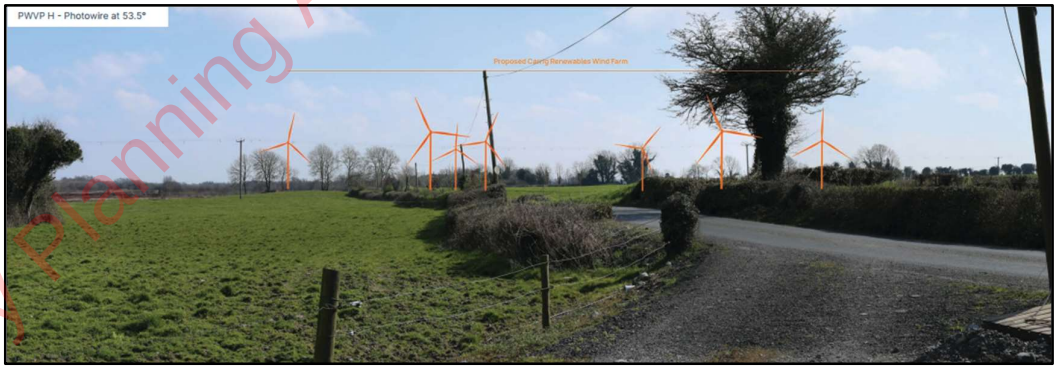

Plate 14-28 PWVP H

Plate 14-29 PWVP G

In summary, the highest effects on residential visual amenity will occur in relation to a relatively small number of receptors located within 800m of the proposed turbines, with the scale of turbines in view reducing quickly from locations further from the site (see VP2 for example). Beyond 1.5km from the site (see VPs 16 and 18) the scale of the turbines reduces substantially. In addition, the various viewpoints located between 3-5km from the nearest turbine (VPs 7, 9, and 11) show that effects on residential receptors will be dramatically reduced in comparison to the closer receptors identified on Figure 14-21. It is relevant then, that the population density, recorded during the 2016 Census as 16.36 persons per km^2, is significantly lower than the national population density of 67.76 persons per km^2 and the Tipperary County population density of 37.06 persons per km^2. As the area surrounding the site has a low population density, site selection for the proposed turbines has resulted in reduced effects on residential visual amenity than might otherwise be the case.

14.7.3.4 Discussion of Cumulative Visual Effects

There are many potential scenarios and interactions where cumulative visual effects may occur. These scenarios can include interactions between the Proposed Development, other energy developments (wind farms or grid infrastructure), as well as other man-made landscape features (quarries, transport networks, overhead telecommunication lines). Guidance for assessment of cumulative effects of onshore wind farms (SNH,2012) & (NatureScot, 2021) clearly states the following:

> *"At every stage in the process the focus should be on the key cumulative effects which are likely to influence decision making, rather than an assessment of every potential cumulative effect"*

> *"The level of information generated can distract attention from the most significant cumulative effects which are likely to influence the consenting decision. Assessments should therefore focus on the most significant cumulative effects and conclude with a clear assessment of those which are likely to influence decision making"*

Following this guidance, a primary focus is given to the cumulative effects likely to occur as a result of other wind turbines identified in the LVIA Study Area. Cumulative visual effects were assessed as part of the Photomontage Assessment Tables found in Appendix 14-3. Whether a visual effect is deemed to be positive, negative or neutral, this involves a degree of subjectivity. What appears to be a positive effect to one viewer could be deemed to be a negative effect by another viewer. All predicted visual effects of the viewpoints below are Long Term and Direct effects.

There are five other existing or permitted wind farms located within 20km of the Proposed Development. These wind farms are located as separate clusters to the southeast (Carrig and Skehanagh) and northeast (Meenwuan, Derrinlough, and Cloghan) of the Proposed Development.

Highly sensitive receptors to the west of the LVIA Study Area are unlikely to have substantial visibility of multiple wind farms and no 'Significant' cumulative visual effects are anticipated, particularly along the River Shannon or Lough Derg (e.g. VP15, VP12).

Existing Carrig and Skehanagh Cumulative Discussion

Figure 14-24 shows the Cumulative Comparative ZTV of the Carrig and Skehanagh windfarms and the Proposed Development. These two existing wind farms are located to the southeast of the Proposed Development.

There is theoretical visibility of both the Proposed Development and these existing wind farms from the majority of the N52 national road, which is located in between the Proposed Development and these wind farms. As discussed previously in Section 14.7.3.3.3, there will be views of the Proposed Development along the stretch of the N52 within 5km of the site, with these views becoming more intermittent and better screened beyond 5km. There will be occasions, particularly when travelling south along this route when there will be views of the Proposed Development to the right-hand side of the road, as well as views of the existing Carrig and Skehanagh turbines to the left-hand side of the road. These are combined (in succession) views where the observer has to turn their head to see the various developments. This will be the case along the N52 at locations within 5km of the proposed turbines. As views of both the Proposed Development and the Carrig and Skehanagh turbines from along the N52 are intermittent in nature, resulting from roadside screening, there will also be sequential views of all turbines from along the road (where the observer moves to another viewpoint to see the different developments).

VP7 and VP16 are both located along the N52 national road, with the cumulative visual effects from these viewpoints discussed in greater detail in the photomontage assessment tables in Appendix 14-3. The existing Carrig and Skenahagh wind farms are also visible from these viewpoints, although these are located beyond the left-hand extent of the view seen in the photomontages in both cases. Plate 14-30 below shows a view from VP16 in the village of Carrig, where the existing wind farms can be seen in the background of the view. The cumulative visual effects related to these combined in succession views of these turbines from both VP16 and VP7 are included in the visual impact assessment conducted in Appendix 14-3, with a 'Moderate', and 'Slight' residual visual effect deemed to arise, respectively. Although there will be views of the Proposed Development and other wind turbines to the south from locations along the N52 national road, the Proposed Development is visually separated from these turbines and the nature of the views are such that wind turbines still do not dominate within these views. Views of the Proposed Development are intermittent along the route, with differing levels of screening at different locations, and this combined with the setback distance of both the Proposed Development from the N52 and the cumulative turbines discussed here, that the addition of the Proposed Development will not give rise to 'Significant' cumulative visual effects.

Plate 14-30 View from VP16 towards the existing Skehanagh and Carrig turbines

All Cumulative Turbines Discussion

Figure 14-25 shows the Cumulative Comparative ZTV of all cumulative windfarms and the Proposed Development.

Scenic View: Road No. L-04025 in the townlands of Clonee, Cumber Lower with views westward over the farmland (Map Ref. O-V16)

The direction of this scenic view is west, towards the Proposed Development Site and with views towards the existing Carrig and Skehanagh wind farms, as well as the existing Meenwauan and Cloghan turbines and the permitted Derrinlough turbines. As shown in VP5, there are expansive views west from this viewpoint due the viewpoint's location on elevated land overlooking a predominantly flat open landscape. In combination cumulative effects are likely to arise as both proposed and cumulative turbines will be visible from this viewpoint, however, due to the distance of the turbines from this viewpoint, the turbines are seen the background of the view as small vertical elements that do not obstruct any scenic views within the landscape. While there are multiple developments in view from this location, the wind energy development are well absorbed in the expansive landscape view and the addition of the Proposed Development will not substantially alter the baseline status of the landscape in this regard. The cumulative visual effects related to this combined view of these turbines from VP5 are included in the visual impact assessment conducted in Appendix 14-3, with a 'Slight' residual visual effect deemed to arise.

R438 Regional Road

The R438 regional road travels from the southwest in a north-easterly direction from a location west of the Proposed Development Site towards the Cloghan, Meenwuan and Derrinlough windfarms. Sequential cumulative visual effects will occur as a result of the direction of this route, as while the Proposed Development and the cumulative wind farms to the northeast are unlikely to be viewed in combination, there will be views of the Proposed Development from locations further south on the road (see VP18 for example). As the road moves north passing to the west of the Cloghan, Meenwuan and Derrinlough windfarms, there will also be views of these turbines from this stretch of the road. There is a substantial distance between this group of cumulative turbines and the Proposed Development (approx. 12.1km) and so cumulative visual effects are not deemed to be 'Significant'.

14.7.4 Discussion of Turbine Range and Landscape and Visual Effects

The dimensions presented below are the range of hub height, blade length and overall tip height assessed within differing chapters of this EIAR:

- Turbine Tip Height – Maximum Height 185m, Minimum Height 179.5m
- Hub Height – Maximum height 110.5m, Minimum height 103.5m
- Rotor Diameter – Maximum length 163m, Minimum length 149m

In Appendix 14-3 the entire range of turbines was fully assessed using a number of photomontages comparing an alternative turbine configuration. Irrespective of which combination of hub height and rotor diameter within the range outlined above is installed on site, the significance of residual landscape and visual effects will not be altered. A rotor diameter of 149m and a hub height of 110.5m is considered throughout the EIAR assessment and is a representative illustration of the Proposed Development on the basis of professional judgement and on consideration of the range of turbines which could be installed. This combination of rotor diameter and hub height (Maximum Hub Height and Minimum Rotor Diameter, 185m Tip Height) has been identified as the most representative for assessment, on the basis that the greatest extent of the entire turbine structure (blades and tower) would potentially be visible from the viewpoints assessed in the EIAR. This turbine configuration (rotor diameter of 149m and a hub height of 110.5m) of the range is termed as the 'Highest Hub and Shortest Blade':

- Highest Hub and Shortest Blade – All 18 No. Viewpoints.
  - Maximum Tip Height – 185 metres
  - Maximum Hub Height – 110.5 metres
  - Minimum Rotor Diameter – 149 metres

Irrespective of which combination of hub height and blade length within the range outlined above is installed on site, the significance of residual landscape and visual effects will not be altered. However, for the avoidance of doubt, two alternative turbine configurations have been presented for four selected viewpoints included in the photomontage booklet accompanying this chapter, these configurations are termed 'Lowest Hub and Longest Blade Possible with Maximum Tip Height of 185m', and 'Minimum Tip Height and Shortest Blade'. The viewpoints selected are representative of short-range views (VP17 <1 km from the proposed turbines, and VP16 <2.5km from the proposed turbines), medium range views (VP18 <3km from the proposed turbines, and VP15 <10km from the proposed turbines). The photomontage assessment tables for these viewpoints contained in Volume 2 Photomontage Booklet include a comment addressing the alternative turbine configurations and confirm that the turbine configuration ultimately installed on site will not alter the assessment of residual visual effects. The following summarises the 'Lowest Hub and Longest Blade Possible with Maximum Tip Height of 185m', and 'Lowest Hub and Shortest Blade' configurations that are presented:

- Lowest Hub and Longest Blade Possible with Maximum Tip Height of 185m – 4 Photomontage Viewpoints
  - Maximum Tip Height – 185 meters
  - Minimum Hub Height – 103.5 metres
  - Rotor Diameter – 163 metres

- Minimum Tip Height and Shortest Blade – 4 Photomontage Viewpoints
  - Minimum Tip Height – 179.5 meters
  - Minimum Hub Height – 105 metres
  - Minimum Rotor Diameter – 149 metres

As demonstrated by the turbine ranges presented in the Photomontage Booklet, irrespective of which combination of hub height and blade length within the range outlined in this application is installed on site, the significance of residual landscape and visual effects will not be altered as set out in Table 14-22 of the EIAR.

14.7.5 Decommissioning Phase Effects

The landscape and visual effects during decommissioning are anticipated to be of a similar nature as those occurring during the construction phase.

The important element of decommissioning from a landscape and visual impacts perspective is the dismantling and removal of the wind turbines. This will occur for a limited period of time and will predominantly involve cranes adjacent the turbines during the dismantling process. Once dismantled, turbine foundations would remain in place underground and will be covered with earth and reseeded as appropriate (See Chapter 4 of this EIAR). Removal of the turbines and ancillary infrastructure from the site will result in a Short-term, Slight, Negative visual effect. A Decommissioning Plan is included as Appendix 4-7 to this EIAR.

14.8 Conclusion

The sensitive visual and landscape receptors with visibility of the Proposed Development were assessed based on site visits and using multiple tools and methods including the production of verified photomontages that follows best practice guidance for LVIA (see Appendix 14-1 for an overview of the methodology employed). Other tools such as ZTV mapping and Route Screening Assessment have also been employed to determine the likely potential and actual visibility of the proposal. No 'Significant' landscape or visual effects were recorded as a result of the proposed Carrig Renewables Wind Farm.

The Proposed Development is located within a flat landscape predominantly covered by flat cutover peat, agricultural land, and commercial forestry. The Proposed Development is situated to the west and north-west of topographical features such as the Slieve Bloom Mountains and Knockshigowna, respectively, within the LVIA Study Area that provide screening.

ZTV mapping (Figure 14-1) shows that there is primarily full theoretical visibility within 5km of the proposed turbines, with an area of no theoretical visibility approximately 4.5km south-east due to the presence of a ridgeline. The ridgeline extends in a south-westerly direction to the edge of the LVIA Study Area, creating large patches of no theoretical visibility. Large areas of limited theoretical visibility is also prominent beyond 10km to the southwest, along the shores of Lough Derg. The topography to the north-west of the site topography creates a large area of no theoretical visibility, extending for the most part to the Shannon itself and beyond. The remaining areas within the LVIA Study Area (20km from the Proposed Development Site) have theoretical visibility with some patches of no visibility. However, on-site surveys found that most prominent visibility is located within 5km of the Proposed Development Site. Beyond 5km, intermittent views of the turbines will occur, however the turbines are mainly viewed as small elements within the background of the view at these distances.

The landscape area within which the Proposed Development is located is predominantly a working landscape of grassland, cutover peat and commercial forestry. The site is currently used primarily for agriculture, with substantial screening occurring from the presence of mature forestry present on site and the surrounding area. As a result, most locations where there are areas of high amenity, primary amenity areas and areas of scenic views and routes, with open views towards the majority of the turbines in the Proposed Development, tend not to be located in close proximity, reducing the spatial extent and size of the turbines from sensitive locations where they are likely to be viewed from.

In terms of construction and operational phase landscape effects relating to designated landscape receptors (see Section 14.7.3.1.1 and Section 14.7.3.1.2), there were no 'Significant' landscape effects deemed to arise as a result of the Proposed Development and it was determined that the addition of the

Proposed Development is consistent with the sustainable development of these areas and achieves the balance sought between the policies outlined in TCDP.

In relation to County Tipperary's Primary Amenity Area, Lough Derg and River Shannon was assessed in order to determine whether the Proposed Development (Operational, Construction and Decommissioning Phase) has 'Significant' landscape effects on the visual quality of the area within this location. No 'Significant' landscape effects were found to arise. For this primary amenity area, views will be limited towards the proposed turbines due to the topographical screening from the undulating landforms and vegetation along the riverbanks and lakeshores providing substantial screening in the direction of the Proposed Development, greatly limiting views towards the proposed turbines. In addition, the view of the primary amenity area is directed towards the lakeshores, in the opposite direction of the turbines. Overall, when visible, such as on Tipperary SR51, the turbines will appear as background elements within the view.

In relation to County Offaly's Areas of High Amenity, Slieve Bloom Mountains and Other Eskers were assessed in order to determine the significance of landscape effects.

For the Slieve Bloom Mountains, the proposed turbines will be visible within a flat plain from the elevated vantage points on the foothills of the mountains. It is noted that the turbines are located at a substantial distance away from this AHA and appear as background elements absorbed within the expansive view with a limited horizontal extent. Given the separation distance from the proposed Development and the scale of the landscape in view, the setting on the Slieve Bloom Mountains is not fundamentally altered as a result of the addition of the Proposed Development within the view.

For Other Eskers, limited theoretical visibility occurs to the eskers designated as AHAs due to a large area of no theoretical visibility created by the topography of Knockshigowna. In relation to the eskers located within the zone of theoretical visibility (7km northeast) the turbines will appear as small background elements within the view. It is emphasised that the Proposed Development is not located directly on eskers within County Offaly, and as such will not cause direct physical changes to these landscape features, a primary concern of the policy and discussion contained within the OCDP.

In terms of landscape character, the turbines are located within an LCA given a *"Dominant Sensitivity Rating"* of Class 2 – Transitional Sensitivity in the LCAT, the third lowest of six sensitivity classes in assigned to LCAs within County Tipperary. The Proposed Development is located on Peat Bogs (compatibility rating 3rd highest out of 6 classes – *"likely to be compatible if sited and designed with great care."* in the TCDP) and agricultural land (compatibility rating 2nd highest out of 6 classes – *"likely to be compatible with reasonable care."* in the TCDP). As discussed in Appendix 14-2, it is considered that while this LCA is given a Dominant Sensitivity Rating of Class 2, the siting of the Proposed Development primarily on land use types with good compatibility ratings in relation to wind energy development suggests that at a project level the landscape character of the Proposed Development Site is generally suitable for this type of development. Furthermore, considering the low levels of visibility of the proposed turbines from locations beyond 5km from the site, the sensitivity of the parts of this LCA where the proposed turbines will actually be seen (with these tending towards compatible land use types) is not as high as the overall rating of Class 2 – Transitional Sensitivity suggests. Furthermore, it is emphasised that the sensitivity of this LCA as outlined in the policy as still relatively low in comparison with other LCAs in the county. Incorporating all factors outlined above, including the sensitivity and land use compatibility ratings, this LCA is deemed to have a 'Medium' sensitivity to wind farm development. The magnitude of change is deemed to be 'Moderate'. As set out in Appendix 14-2 a 'Moderate' effect on the landscape character of this LCA is likely to occur as a result of the Proposed Development.

Taking into account its current land use and remoteness, the dense vegetation and flat topography taking advantage of screening in the landscape to limit views of proposed turbines and the policy contained within the TCDP, the landscape of the Proposed Development Site itself has a Medium sensitivity to wind energy development and no 'Significant' landscape effects will arise as result of the Proposed Development (further detail above in Section 14.7.3.1).

In terms of the wider landscape character of the LVIA Study Area (15km study area for effects on landscape character – see Section 14.2.1), there will be no 'Significant' landscape effects. Residual landscape effects of 'Slight' and 'Not Significant' were deemed to arise for the two LCAs located within 5km of the Proposed Development, Tipperary LCA 11 and Offaly ILCA 1, respectively, as visibility from these LCAs will be limited towards the proposed turbines as a result of screening from the high levels of vegetation existent within these LCAs. In relation to visibility in LCAs beyond 5km, there will only be views of the turbines from isolated elevated locations. From sensitive parts within each LCA (e.g. River Shannon and Lough Derg), the vegetation along the riverbanks and lakeshores provide substantial screening in the direction of the Proposed Development, greatly limiting views towards the proposed turbines.

In terms of cumulative landscape effects, the Proposed Development is located within a flat, heavily vegetated agricultural plain located between the Slieve Bloom Mountains and Lough Derg with the existing Skehanagh and Carrig wind farms located along the ridgeline approximately 4km southeast of the Proposed Development. Due to the dense vegetation, intermittent views of the existing windfarms arise. Due to this, there is a capacity to absorb further wind energy development within this landscape area without 'Significant' effects on landscape character. Wind energy developments do not dominate this landscape type and the addition of the Proposed Development will not substantially alter the baseline status of the landscape in this regard. Views of both proposed turbines and existing turbines in combination will be intermittent as result of the flat terrain and vegetation in the landscape. The highest cumulative landscape effects will be localised to areas within 5km of the proposed turbines where visibility will be greatest. From locations beyond this, any views of the Proposed Development will be background views where the proposed turbines occupy a limited horizontal and vertical extent within views.

It is noted that there are additional wind energy developments within the LVIA Study area, however given the substantial distance (>12km for the Meewuan turbines which are the closest of the turbines located in County Offaly), 'Significant' effects on landscape character are not deemed to arise.

The visual assessment concluded that residual visual effects of 'Significant' was deemed to arise at two of the 18 viewpoint locations. All other viewpoints were assessed as resulting in Moderate (2), Slight (6), Not Significant (6) and Imperceptible (2) residual effects. As demonstrated in the Photomontage booklet (Volume 2) and photomontage assessment tables (Appendix 14-3), the turbine locations, spacing, and heights have been appropriately selected for the Carrig Renewables Wind Farm, and design of the Proposed Development adheres to the guidance for the siting of wind farms in Hilly and Flat Farmland landscape Types, as set out in the WEDGs and draft WEDGs (DoEHLG, 2006), & (DoPHLG, 2019). The siting ensures the wind farm will be viewed at a low elevation, reducing the geographical extent of visibility and visual exposure.

15 no. designated scenic routes along with a number of other sensitive visual receptors were assessed as part of this visual assessments. There were no 'Significant' effects found to occur at designated scenic routes and views within the LVIA Study Area, with the scenic routes and views deemed to have a residual effect of either 'Slight' or 'Imperceptible'.

In terms of other sensitive visual receptors, such as recreational and tourist destinations, settlements, and transport routes, the visual effects were found to be either 'Slight', 'Not Significant' or 'Imperceptible' for the majority of these. A 'Moderate' effect is deemed to arise for visual receptors in close proximity to the Proposed Development. These include the settlement of Carrig, the 'Ormond Way' recreational route, and the N52 national road.

In relation to residential receptors in close proximity to the site, a physical landscape buffer is formed by the field structure, vegetation, and other landscape elements, providing a sense of scale in relation to the setback distance of the turbines. Due to the iterative design process, the turbines are viewed behind the mature forestry seen within a moderate horizontal extent, even in locations in close proximity to the proposed turbines, which as discussed are relatively sparsely populated. In addition, the Proposed Development adheres to the recommended 500m set back distance in the WEDGs (DoEHLG, 2006)

and also the 4 times tip height set-back distance set out for residential visual amenity prescribed by the draft WEDGs (DoHPLG, 2019).

Cumulative visual effects are likely to arise given the addition of the Proposed Development within a landscape area where existing wind farms are located nearby. The proposed Carrig windfarm will be viewed in the same viewshed as the existing Carrig and Skehanagh turbines with combined (in succession) views occurring along the stretch of the N52 within 5km of the site. Additionally, intermittent vegetation along the roadside will result in sequential views of both the proposed and cumulative turbines. It is considered that with only intermittent views of the Proposed Development along the N52, resulting from different levels of screening at different locations, combined with the setback distance of both the Proposed Development from the N52 and the cumulative turbines, the addition of the Proposed Development will not give rise to 'Significant' cumulative visual effects.

Sequential cumulative visual effects will also occur along the R438 where the Proposed Development Site and Cloghan, Meenwuan and Derrinlough windfarms are seen, at a different point along the road. However, it is noted that there is a substantial distance between this group of cumulative turbines and the Proposed Development (approx. 12.1km) and so cumulative visual effects are not deemed to be 'Significant'.

In combination cumulative effects are likely to arise as cumulative are visible at certain limited locations along with the Proposed Development within the LVIA Study Area (Scenic View O-V16). However, given the substantial distance of the turbines from this viewpoint, the turbines are seen in the background of the view as small vertical elements that do not obstruct any scenic views within the landscape. Overall, any cumulative visual effects that arise as a result of the Proposed Development are not deemed to be 'Significant'.

The heavily vegetated landscape within the Proposed Development Site assists in minimising the visual extent of turbines and allows the landscape to accommodate multiple windfarms, which the photomontage assessment tables contained in Appendix 14-3 has covered in detail.

In conclusion, the Proposed Development is an appropriately designed and suitably scaled project, there are no 'Significant' landscape effects and the only 'Significant' visual effects deemed to arise were in relation to a very low number of residential properties located within 800m of the proposed turbines. Overall, visual effects throughout the LVIA Study Area were limited as a result of the lack of visibility of the Proposed Development, in general, in the wider area.