

## 12. LANDSCAPE AND VISUAL

### 12.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) addresses the potential landscape and visual impacts of the proposed Derrinlough Wind Farm. 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 with specific reference to wind energy and the study area in which the proposed development site is located.

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 wind farm uses visibility mapping, representative viewpoints and photomontages. The potential impacts in both landscape and visual terms are then assessed, including cumulative impacts.

A full description of the proposed development is provided in Chapter 4 of this EIAR.

### 12.2 Statement of Authority

This chapter was prepared by Joanna Mole, a Landscape and Visual Impact Assessment Specialist and Chartered Landscape Architect with McCarthy Keville O'Sullivan Ltd. with over 15 years of experience in both private practice and local authorities. Joanna holds a BSc (Hons) in Landscape Design and Plant Science from Sheffield University, a Postgraduate Diploma in Landscape Architecture from Leeds Beckett University and a MSc in Renewable Energy Systems Technology from Loughborough University. Joanna is a Chartered Landscape Architect with specialist knowledge in Landscape and Visual Impact assessments for projects ranging from individual houses to large windfarms, solar farms, cycle route design and landscape contract management. Joanna holds chartered membership of the British Landscape Institute since 1998 and has been an examiner for the British Landscape Institute professional practice exam. Joanna was also aided by Michael Watson, a qualified Environmental Scientist and environmental consultant with 18 years' experience of EIA and LVIA.

#### 12.2.1 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 final project layout that is the subject of this LVIA, already incorporates the following landscape and visual design considerations for good wind farm design:

- The turbines have been located within a vast flat site surrounded by lands of similar elevations which limits open views of the project, particularly from potentially sensitive receptors such as settlements (Note the Photomontage outputs).
- The turbine layout has been designed to create a coherent cluster, contiguous and connected to each other visually and with consistent spacing.
- The turbine layout and scale has been designed to fit with the existing and permitted turbines located in the vicinity of the development which are at a similar elevation and with similar turbine size envelopes to the proposed development.
- All turbines have been located greater than 4x tip height from sensitive receptors in order to protect residential visual amenity.

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. The site location and current layout minimises the potential for visibility from sensitive receptors and the site visits and assessment tools show that the actual visibility is far less than the theory. Where visibility does occur, the design is in accordance with best practice and a coherent project, sympathetic to its neighbouring wind turbines, is evident.

## 12.2.2 Assessments of other alternative turbine designs

This LVIA also assessed whether different turbine designs may give rise to visual effects. For the purpose, one viewpoint was chosen as a representative viewpoint and an additional photomontage was prepared using different turbine dimensions, e.g. lower hub height with longer rotor diameter. The two different turbine designs shown from the same viewpoint were then compared to see if a different turbine design would change the assessment of visual effects of the proposed development.

## 12.2.3 Scoping Replies/Pre-Planning Meetings

A scoping and consultation exercise has been carried out by MKO, as detailed in Chapter 2 of this EIAR. Pre-planning meetings were held with An Bord Pleanála on 12<sup>th</sup> March 2019 and Offaly County Council on 29<sup>th</sup> August 2018 and 6<sup>th</sup> March 2019 details of which are also outlined in Chapter 2 of this EIAR.

## 12.3 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 12.1. There are four main sections to this assessment:

- Landscape Baseline
- Visual Baseline
- Cumulative Baseline
- Likely and Significant Effects – outlining the assessment of landscape, visual and cumulative effects

### 12.3.1 Scope and Definition of Landscape and Visual Impact (LVIA) Study Area

For the purposes of this chapter, where the ‘proposed development site’ or ‘the site’ is referred to, this relates to the primary study area for the proposed development, as shown on Figure 1.1. The proposed development site is discussed in some detail in terms of its landscape character.

However, the landscape and visual baseline mapping and viewpoint selection are based on wider study areas. On the basis of the desktop study and survey work undertaken, the professional judgement of the assessment team, experience from other relevant projects and policy guidance or standards (Appendix 3, DoEHLG ‘Draft Revised Wind Energy Development Guidelines’ 2019 and GLVIA 2013, see below) the LVIA study area has been chosen as 20 kilometres for visual and landscape effects and 15 kilometres from the proposed wind turbines for effects on landscape character. These are the study areas for which the baseline maps and viewpoint locations are produced and are referred to as the ‘study area’. Furthermore, on the basis of desk studies and survey work undertaken, the professional judgement of the assessment team, experience from other relevant projects and policy guidance or standards, the following topic areas have been scoped 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 landscapes beyond a 20km radius from the proposed development, 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 beyond a 15km radius from the proposed development, where it is judged that potential significant effects on landscape character are unlikely to occur;
- Effects on visual receptors beyond a 20km radius from the proposed development, where it is judged that potential significant effects are unlikely to occur;
- Cumulative effects in relation to single turbines (except where otherwise stated);
- Cumulative landscape effects beyond a 15km radius and cumulative visual effects beyond a 20km radius from the proposed development, where it is judged that potential significant effects on landscape character are unlikely to occur;
- All potential effects occurring during decommissioning of the Proposed Development.
- Areas in Counties Roscommon, Westmeath and Laois due to distance from the proposed development and the lack of significant visual or landscape receptors within the small area of the county falling within the study area

### 12.3.2 Guidelines

While the legislation and general guidance on Environmental Impact Assessment is set out in Chapter 1 of this report only guidance specifically pertaining to the Landscape and Visual Impact are outlined below.

Ireland signed and ratified the European Landscape Convention (ELC) in 2002, which introduces a pan-European concept which centres on the quality of landscape protection, management and planning. The Department of Arts, Heritage and the Gaeltacht has published a National Landscape Strategy for Ireland in 2015. The Strategy aims to ensure compliance with the ELC and contains six main objectives, which include developing a national Landscape Character Assessment and Developing Landscape Policies.

In 2000, the Department of the Environment and Local Government published ‘Landscape and Landscape Assessment: Consultation Draft of Guidelines for Planning Authorities’, which recommended that all Local Authorities adopt a standardised approach to landscape assessment for incorporation into Development Plans and consideration as part of the planning process. However, this DoEHLG 2000 guidance remains in draft form.

The landscape and visual impact assessment was primarily based on the *Guidelines for Landscape and Visual Impact Assessment* or GLVIA (The Landscape Institute/Institute of Environmental Management and Assessment, UK, 2013). A range of other guidelines also inform the preparation of this landscape and visual impact assessment, which include:

- Wind Energy Development Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government, 2006),
- Draft Revised Wind Energy Development Guidelines (Department of the Environment, Heritage and Local Government, 2019),
- Visual Assessment of Wind Farms: Best Practice (Scottish Natural Heritage, 2002).
- Visual Representation of Wind Farms: Version 2.2 (Scottish Natural Heritage, 2017).
- Siting and Designing Wind Farms in the Landscape, Version 3a (Scottish Natural Heritage, 2017).
- Assessing the Cumulative Impact of Onshore Wind Energy Developments. (Scottish Natural Heritage, 2012)
- Photography and photomontage in landscape and visual impact assessment (Landscape Institute Advice Note 01/11, 2011)
- Visual representation of development proposals (Landscape Institute Technical Guidance Note 02/17, 2017)

- Assessing the Cumulative Impact of Onshore Wind Energy Developments (Scottish Natural Heritage, 2012)
- Spatial Planning for Onshore Wind Turbines – natural heritage considerations (Scottish Natural Heritage, 2015)
- Siting and Designing Wind Farms in the Landscape Version 3a (Scottish Natural Heritage, 2017)
- Cumulative Impact of Wind Turbines on Landscape and Visual Amenities (Carmarthenshire County Council, 2013)
- Offaly County Development Plan 2014-2020 (Offaly County Council, 2014)
- Wind Energy Strategy for County Offaly - Methodology Statement 2014 (Offaly County Council, 2014)
- Tourism Strategy for County Offaly 2017-2022 (Offaly County Council, 2017)
- Galway County Development Plan 2015 to 2021 (Galway County Council, 2015)
- Landscape and Landscape Character Assessment for County Galway for the Galway County Development Plan 2015-2021 (Galway County Council, 2015)
- North Tipperary County Development Plan 2010 – 2016 (As Varied) (Tipperary County Council, 2015)
- Landscape Character Assessment of Tipperary 2016 (Tipperary County Council, 2016)

### 12.3.3 Baseline Landscape and Visual Information

In order to carry out this assessment, an initial desk study was undertaken which identified:

#### Landscape

- Landscape Receptors
- Policies and objectives contained in the relevant county development plans pertaining to landscape and wind energy
- Landscape designations in the study area
- Landscape character of the study area
- Landscape character of the proposed development site based on
  - Site Surveys undertaken in Winter 2018 and Spring and Summer of 2019
  - Landscape Character Types identified in 'Landscape and Landscape Assessment: Consultation Draft of Guidelines for Planning Authorities' (Department of the Environment and Local Government, 2006)

#### Visual

- Identification of Visual Receptors
- Zone of Theoretical Visibility (ZTV) mapping

### 12.3.4 Assessment of Potential Impacts

The methodology includes clearly documented methods based on the GLVIA guidelines, in order to arrive at an assessment. These include 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. Throughout this chapter 'theoretical visibility, is referred to. This is based on Zone of Theoretical Visibility (ZTV) mapping. Further details of which along with other information on the methodology of landscape and visual impact assessment are presented in Appendix 12.1.

## 12.4 Landscape Baseline

This part of the LVIA focusses on identifying the key landscape receptors that should form part of the assessment. As the LVIA study area includes significant areas of Counties Tipperary and Galway along with County Offaly, landscape policy for all three counties was referenced in this section.

Baseline Landscape Receptors:

- **Landscape Designations** based on:
  - Offaly County Development Plan 2014-2020
  - Galway County Development Plan 2015 to 2021
  - North Tipperary County Development Plan 2010 – 2016
- **Landscape Character of the Proposed Development Site** and its immediate environment based on:
  - Landscape Type identified using DoEHLG Guidelines 2006
  - Site Visits
- **Landscape Character of the Study Area** based on:
  - Provisional Landscape Character Assessment of County Offaly areas within the LVIA study area (prepared by MKO)
  - Landscape and Landscape Character Assessment for County Galway
  - Landscape Character Assessment of Tipperary 2016

### 12.4.1 Landscape Designations and Policy

The County Development Plans of Offaly, Galway and Tipperary were consulted to identify landscape designations and policy.

While the policy on designated views and scenic routes is outlined for the respective counties below, the list of views and scenic routes within 20km of the proposed turbines, mapped in Figure 12.1 are set out under the Visual Baseline, as they are in their nature a visual designation, and assessed and form part of the basis of viewpoint selection.

*Figure 12.1 Landscape Designations*

## 12.4.1.1 County Offaly

### 12.4.1.1.1 Landscape Policy

Offaly County Council Development Plan 2014-2020 (CDP) sets out policies on landscape in *Chapter 7 Heritage and Landscape*. The following policies and objectives deal with the Offaly landscape generally:

***NHP-08*** It is Council policy to protect, conserve and enhance the county's biodiversity and natural heritage including wildlife (flora and fauna), habitats, landscapes and/or landscape features of importance to wildlife or which play a key role in the conservation and management of natural resources such as water.

***LAP-01*** It is Council policy that landscape considerations will be an important factor in all land use policy and decision making for the county, ensuring that a pro-active view of development is undertaken whilst maintaining respect for the environment and heritage, as per the general principles of sustainable development. Further it is policy to conserve, protect and enhance the landscape of Offaly at a number of levels:

- The value of the landscape itself, as open countryside and the associated form and character of settlements.
- The value of the landscape as a resource for economic growth in accordance with its physical and visual attributes.
- The value of the landscape and its role with habitats and species whose diversity enriches the environment.

***LAO-01*** It is an objective of the Council to preserve and enhance the character of the county's landscape where, and to the extent that in the opinion of Offaly County Council, the proper planning and sustainable of the area requires it.

### Areas of High Amenity

The CDP classifies 'Areas of High Amenity' as areas with scenic and amenity value worthy of special protection. Twelve are listed and shown on Map 7.17 in the CDP They are also shown on Figure 12.1. Those wholly or partially within the LVIA study are:

- Slieve Bloom Mountains
- Clonmacnoise Heritage Zone
- Shannon River and Callows
- Lough Boora Parklands
- Grand Canal
- Pallas Lake
- Clara Bog
- Eiscir Riada, other eskers
- Mushroom Stones.

The eastern portion of the site falls within the Lough Boora Parklands High Amenity Area as illustrated in Figure 12.2 below.

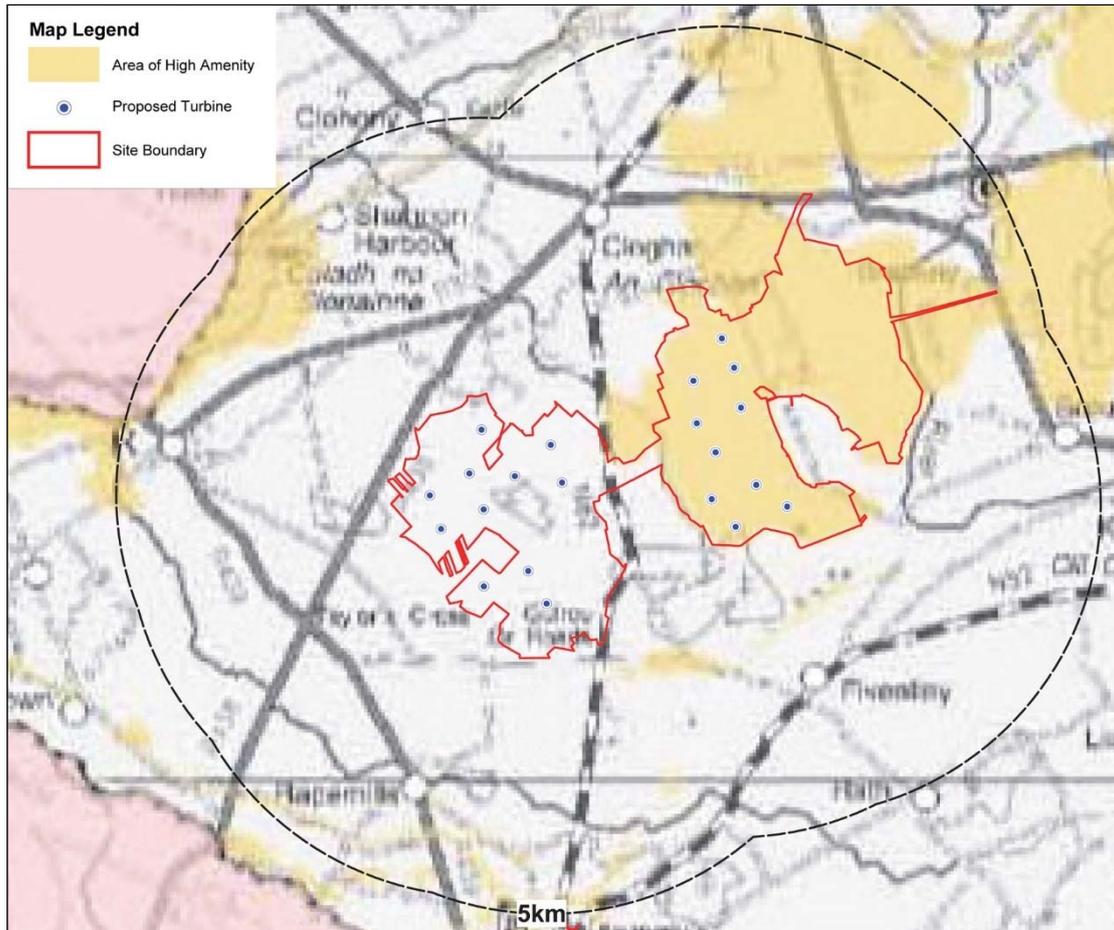


Figure 12.2 County Offaly Areas of High Amenity within 5 km of the proposed turbines (not to scale)

It is the council’s priority to protect and preserve these areas. Policies and objectives relating to Areas of High Amenity are as follows:

**AHAP-01** It is Council policy to protect and preserve the county’s primary areas of high amenity namely the Slieve Bloom Mountains, Clonmacnoise Heritage Zone, Durrow High Cross, Abbey and surrounding area, the River Shannon, Lough Boora Parklands, Grand Canal, Croghan Hill, Raheenmore Bog, Pallas Lake, Clara Bog and Eskers, Eiscir Riada and other eskers. These areas are indicated on Map 7.17.

Notwithstanding the location of certain settlements, or parts of, for which there are settlement plans (towns, villages, ‘sráids’), within the Areas of High Amenity, it is not the intention of this policy to hinder appropriate sustainable levels of development (as set out in the plans and subject to proper planning). Further, it is policy to facilitate the sustainable extension and expansion of existing visitor, tourist related or other rural enterprises within the Areas of High Amenity, where such development is appropriate and where it can be demonstrated that it gives ‘added value’ to the extending activity and to the immediate area which is the subject of the ‘Area of High Amenity’ designation.

**AHAP-02** It is Council policy, in both cases above, to ensure that issues of scale, siting, design and overall compatibility (including particular regard to environmental sensitivities) with the site’s location within an Area of High Amenity are of paramount importance when assessing any application for planning permission. The merits of each proposal will be examined on a case-by case basis.

**AHAO-01** It is an objective of the Council to protect and preserve the county’s primary areas of high amenity namely the Slieve Bloom Mountains, Clonmacnoise Heritage Zone, Durrow High Cross, Abbey & surrounding area, the River Shannon, Lough Boora Parklands, Grand

*Canal, Croghan Hill, Raheenmore Bog, Pallas Lake, Clara Bog and Eskers, Eiscir Riada and other eskers.*

The proposed development site comprises mainly cutover bog and forms part of the Lough Boora Bog Group. However, in Section 2.11.5 *Peatlands* of the CDP it is stated that promotion of the existing Lough Boora facilities ‘*and their expansion and also that any development of wind energy on cutaway bog should provide increased access and education*’ will be an objective.

### Landscape Sensitivity

In the CDP, landscape sensitivity is described as a measure of a landscape’s ability ‘*to accommodate change or intervention without suffering unacceptable effects to its character and values*’. The three different categories of landscape sensitivity Low, Moderate and High, are marked on Map 7.15 *Landscape Classification* and described in Tables 7.11.1 to 7.11.4 of the CDP. The following policy relates to landscape sensitivity:

**LAP-02** *It is Council policy to control development as per the county’s landscape classification listed in Tables 7.11.1-7.11.4.*

The western portion of the proposed development is located within an area designated ‘Moderate’ sensitivity, as shown in Figure 12.3 below. Landscape characteristics of ‘Moderate’ sensitivity areas are described in Table 7.11.1 of the CDP these areas are described as ‘*generally ‘open’ in character with intrinsic quality and moderate capacity to absorb new development*’. Furthermore, in Table 7.11.3 of the CDP it is conceded that ‘*some of these cutaway bogs may be appropriate for other sensitively designed and located developments including renewable energy (wind farms, biomass crops) and/or industrial use*’.

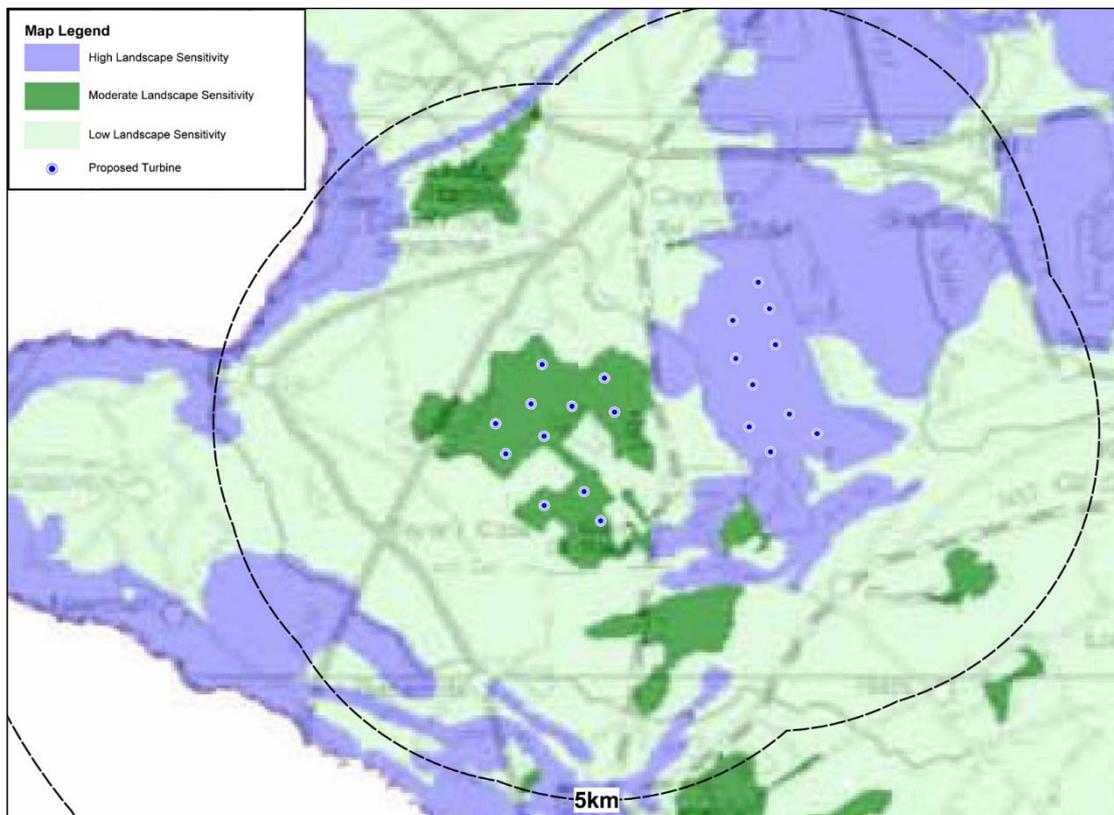


Figure 12.3 County Offaly Landscape Sensitivity within 5 km of the proposed turbines (not to scale)

The eastern portion of the proposed development is located within the Lough Boora High Amenity Area which is categorised as High Sensitivity. Table 7.11.1 of the CDP describes High Sensitivity Areas

as having “*extremely low capacity to absorb new development*” and generally correlate to Areas of High Amenity. Table 7.11.4 of the CDP gives details specific to the type of high amenity area and for ‘Wetlands’ states that ‘*any development proposed which occurs within these areas, should demonstrate a necessity to be developed in this location, be very small scale and have minimum visual impacts*’. Furthermore, various areas of the ‘Lough Boora Parklands’ including ‘Turraun Wetlands, Finnamore Lakes Area and Loch Clochan Wetlands’ are singled out for specific mention in Table 7.11.4 under ‘C Wetlands’, however, the parts of the proposed development site are not referenced.

### Scenic Routes and Views and Prospects

Protected views and prospects are identified on Map 7.18 and listed in Table 7.11.6 of the CPD. There is one objective set out in the CPD in relation to views and prospects:

***LAO-02*** It is an objective of the Council to preserve scenic views and prospects throughout the county which will be assessed on a case-by-case basis, as part of the development management process. (Views are listed in Table 7.11.5 and shown on Map 7.18).

Map 7.19 of the CDP shows two scenic routes throughout the county (referred to as the Northern and Southern Scenic Amenity Routes in this LVIA chapter):

- ***Northern Scenic 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 Parklands and the callows area of the River Shannon in particular.
- ***Southern Scenic Amenity Route (R440 and R421 Birr to Kinity and Ballard to Kinity)*** - 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.

Both fall within the LVIA study area with the R357 Blueball to Shannonbridge being the closest to the development site, approximately 2.3 km north of the nearest turbine at its closest point.

Offaly County has set out the following policies and objectives regarding protected views and scenic routes:

***LAP-03*** It is Council policy to protect the county’s scenic amenity routes from insensitive levels of roadside development and excessive levels of development. For development directly accessing onto restricted regional routes (key amenity routes) as shown on Map 7.19 (Chapter 4, Infrastructure and Environment Strategy) and on map 4.1, restrictions as per policy STAP-19 will apply.

Views and prospects as well as scenic routes within 20km of the proposed turbines are mapped in Figure 12.8 and, as outlined above, listed in Section 0 *Visual Baseline* and assessed in that section of the landscape and visual impact assessment chapter.

### Green Infrastructure

The CDP defines green infrastructure “*as strategically planned and interconnected networks of green space and water capable of delivering ecosystem services and quality of life benefits to people*”. Green infrastructure can include parks, open spaces, farmland and rivers which are designed to provide and enhance economic, environmental and quality of life benefits for local communities. Conservation and enhancement of ecological features such as hedgerows result in corridors which allow for the exchange and movement of species between conservation areas.

The Proposed Development is located within Green Infrastructure area ‘Bord na Móna Railway’ and is illustrated on Map 7.15 of the CDP. Relevant Green Infrastructure policies and objectives are listed below:

**GIP-01** *It is Council policy to recognise the economic, social, environmental and physical value of Green Infrastructure.*

**GIP-02** *It is Council policy to protect existing green infrastructure within the county and to provide additional green infrastructure, where possible.*

**GIP-03** *It is Council policy to require that all land use plans protect, manage and provide where possible green infrastructure in an integrated and coherent manner to integrate Green Infrastructure into future developments and ensure developments are cohesive with Green Infrastructure corridors linking adjoining lands.*

**GIO-03** *It is an objective of the Council to encourage, pursuant to Article 10 of the Habitats Directive, the management of features of the landscape, such as traditional field boundaries, important for the ecological coherence of the Natura 2000 site network and essential for the migration, dispersal and genetic exchange of wild species.*

**GIO-04** *It is an objective of the Council to develop and support the implementation of Green Infrastructure Strategy for Offaly working with chief stakeholders including Bord na Móna, NPWS, Coillte, WWI and Farmers, community groups and NGOs, where appropriate.*

#### 12.4.1.1.2 Wind Energy Policy pertaining to Landscape

County Offaly policy on wind energy can be found in Chapter 3 Energy Strategy of the CDP as well as the *Wind Energy Strategy for County Offaly Methodology Statement* (WESO).

Policies and objectives related to landscape for the siting of wind energy developments can be found below:

**EP-02** *It is Council policy to facilitate the continual development of renewable energy sources having regard to the proper planning and sustainable development of the area concerned, the protection of amenities, landscape sensitivities, European Sites, biodiversity, natural heritage, and built heritage, and where such proposals comply with policy contained in the County Development Plan, in the interests of proper planning and sustainable development.*

**EP-03** *It is Council policy to encourage the development of wind energy in suitable locations, on cutaway bogs within the wind energy development areas open for consideration identified in Map 3.2, in an environmentally sustainable manner and in accordance with Government policy, having particular regard to the Wind Energy Strategy for the County and Section 3.5.1, which states that appropriate buffers should be provided, which shall be a minimum of 2km from Town and Village Cores, European designated sites, including Special Areas of Conservation (SAC) and Special Protection Areas (SPA), and national designations, Natural Heritage Areas (NHA). Wind Energy developments on cutaway bogs should generally be developed from the centre out.*

**EP-04** *Cumulative effects of wind farm development can arise as the combined consequences of proposals for more than one wind energy development within an area or proposal(s) for new wind energy development(s) in an area with one or more existing or permitted developments. Offaly County Council will monitor cumulative impact assessments of wind energy proposals over the lifetime of the plan and cumulative impacts will be a material consideration in the assessment of any planning application for wind energy development.*

**EO-01** - It is an objective of the Council to achieve a reasonable balance between responding to government policy on renewable energy and in enabling the wind energy resources of the county to be harnessed in an environmentally sustainable manner. This will be implemented having regard to the Council’s Wind Energy Strategy as follows:

1. 1. In Areas open for consideration for Wind Energy Development, as identified in Map 3.2, the development of Wind Farms and smaller wind energy projects shall be open for consideration.
2. In all other areas Wind Energy Developments shall not normally be permitted – except as provided for under exemption provisions and as specifically described in Section 5.4 of the Wind Energy Strategy and Policy EP – 05.

The wind strategy was arrived at through ‘sieve mapping’ analysis of the key environmental, landscape, technical and economic criteria, resulting in Map 3.2 in the CDP showing areas ‘open for consideration for wind energy development’. The proposed development site is located within a rural setting on large areas of cutaway and cutover bog connected via rail links. Parts of both the eastern and western portion of the proposed development site fall within an area designated as suitable for wind energy development as illustrated on map 3.2 of the Offaly CDP and shown on Figure 12.4 below.

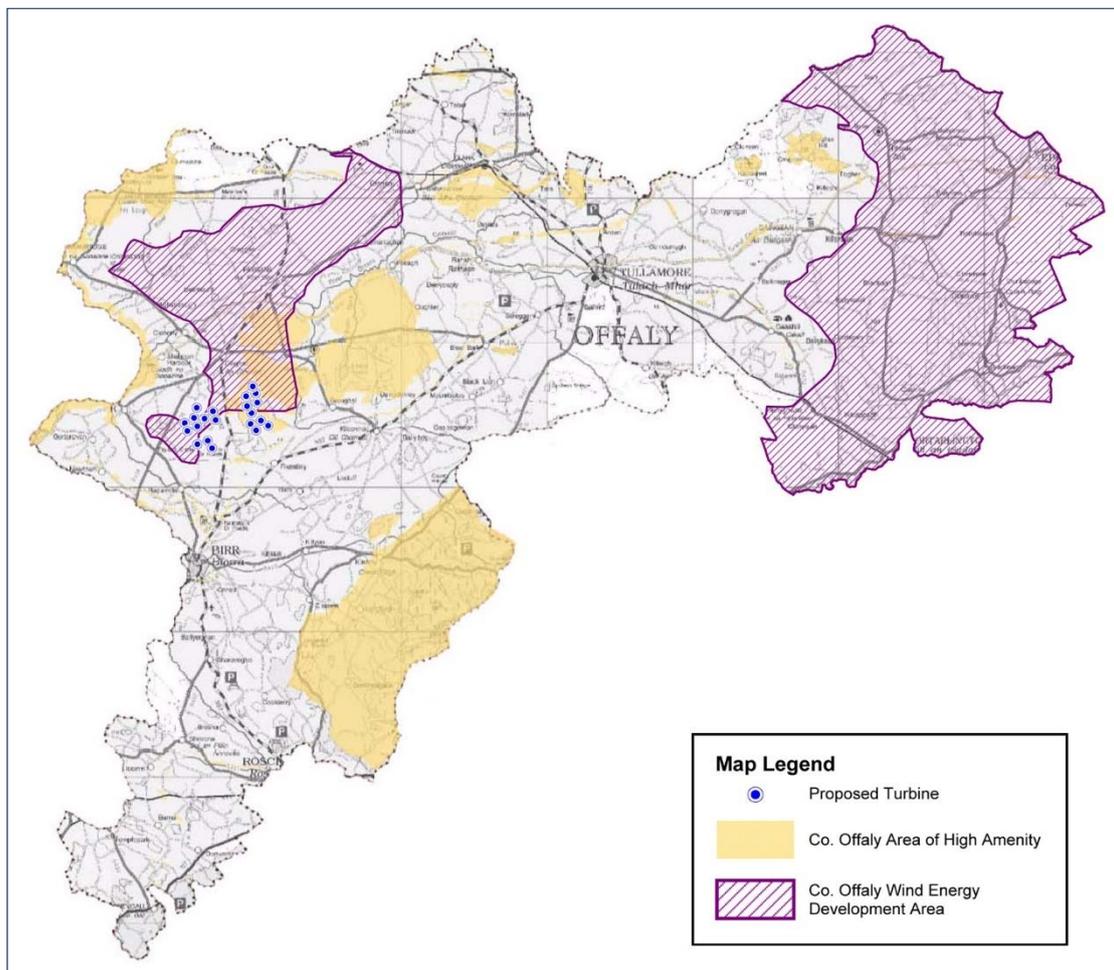


Figure 12.4 County Offaly Areas of High Amenity and Wind Energy Development Area (not to scale)

In Section 3.5 of the CDP it is stated that ‘the characteristics of cutaway bog appear to be particularly suitable for wind development’, as they are ‘generally large, uninterrupted by hedgerows, streams and natural features’. Furthermore, they are ‘already connected to each other via corridors i.e. bog railway routes, which will allow for transmission infrastructure and roadways to be built between sites, avoiding impacts on the public road in terms of traffic or visual impact’. Their suitability is further underlined by their being ‘the least densely populated areas of the county’. Section 2.3.2 Peatlands of the CDP states

that peatlands ‘*could potentially accommodate large scale energy production in the form of wind farms*’ and adds further that ‘*the Council will encourage the sustainable and appropriate use of the peatlands for employment generating uses when all other planning and environmental considerations are met*’.

In Figure 3 of the WESO all the areas of the proposed development site are marked as ‘Cutaway Peat’, which is described in the document as ‘*areas generally having visually degraded landscape character, very low levels of residential settlement and large landholdings which give them a high potential for the development of windfarms – while avoiding conflicts with neighbours or scenery*’

In Table 1 the ‘*Area South of Cloghan*’ is listed as one of the 12 main areas having wind energy development potential and is in fact deemed suitable for ‘*large scale wind farms*’ due to its having ‘*low levels of adjacent dwellings, reasonable access to grid, proximity to access and areas of cut-over bog*’.

Furthermore, as can be seen in Figure 12.4 above, no significant Areas of High Amenity other than the eastern parts of the Lough Boora Parklands and some small areas of eskers and a section of the Grand Canal have been included in the ‘*Wind Energy Development Areas*’. This suggests that this Area of High Amenity is not sensitive to wind energy development.

In the WESO, landscape sensitivity is accommodated by a 2 km set-back distance from visually sensitive areas, which is deemed appropriate as it was assumed that ‘*at distances in excess of 2km, the turbines will not be visually dominant*’.

#### 12.4.1.2 County Tipperary

Tipperary County Council was established on the 1<sup>st</sup> June 2014, following a decision in 2011 by the Department of Environment, Community and Local Government (DECLG) to amalgamate North and South Tipperary County Councils.

Therefore, Tipperary has at present two County Development Plans, these are:

- South Tipperary County Development Plan 2009, adopted in February 2009.
- North Tipperary County Development Plan 2010, adopted in July 2010.

The 20km study zone for the proposed development falls into the north of County Tipperary; thus, the North Tipperary County Development Plan (CDP) 2010 (as varied) is considered in this assessment.

#### North Tipperary County Development Plan 2010 (as varied)

Chapter 7 of the North Tipperary CDP relates to Landscape, Water Quality and Heritage and is informed by the county-wide Landscape Character Assessment 2016 (please see Section 12.4.4.9 below). The landscape of County Tipperary is considered as an important economic, community and cultural resource and following the National Landscape Strategy 2015-2030, it is an objective of the council to preserve and protect the landscape character of the county, while recognising the need for sustainable development in accommodating areas. The core aim of Tipperary County Council in relation to the natural and built heritage is as follows:

*“To safeguard the natural and built heritage of the county, to maintain a high-quality environment while promoting sustainable appropriate developments to showcase the county’s unique assets.”*

Policies pertaining to the county-wide objectives are:

***Policy LH1: Landscape Management and Protection*** *It is the policy of the Council to facilitate new development which integrates and respects the character, sensitivity and value of the*

*landscape in accordance with the designations of the County Landscape Character Assessments (or any review thereof).*

The North Tipperary CDP has identified Primary and Secondary Amenity Areas which are notable for their scenic and visual quality and offer tourist and recreational opportunities.

***Policy LH2: Protection of Visual Amenity and Character of Primary and Secondary Amenity Areas.*** *It is the policy of the Council to ensure the protection of the visual amenity, landscape quality and character of designated Primary and Secondary Amenity Areas. Developments which would have an adverse material impact on the visual amenities of the area will not be permitted. 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 ensure that the development integrates with the landscape through careful use of scale, form, finishes and colour. c) Existing landscape features, including trees, hedgerows and distinctive boundary treatment shall be protected and integrated into the design proposal. d) Developments shall comply with the development standards set out in Chapter 10 and, as appropriate, the Rural Housing Design Guidelines contained in Appendix 5.*

There is one Primary Amenity Area and no Secondary Amenity Area within the study area as illustrated in Figure 12.1. This Primary Amenity area is approx. 14.3 kilometres from the nearest turbine and based on this distance, the ZTV mapping, local topography and vegetation it is highly unlikely that any of the proposed turbines will be visible from this area.

### Scenic Routes and Views

Tipperary Council has designated views throughout the county which represent key views of natural and built heritage, provide visual amenity and attract tourism to the county and the following policy item applies to these:

***Policy LH3: Protection of Views of Scenic Value***  
*It is the policy of the Council to protect and enhance views identified in Appendix 4 Listed Views in Tipperary, and views to and from lakelands and waterways. The Council will not permit development which would obstruct or have a significant adverse impact on these views.*

There are 15 scenic routes listed in Appendix 4 of the North Tipperary CDP and 60 Scenic Routes and Views as well as 10 proposed Scenic Routes and Views listed for the whole of Tipperary in Appendix 2 of the Landscape Character Assessment of Tipperary. One of these, View 54, is within the study area and is shown on Figure 12.8 and as outlined above listed in in Section 0 Visual Baseline and assessed in that section of the landscape and visual impact assessment chapter.

### Public Rights of Way and Way-Marked Ways

North Tipperary offers several way-marked ways and rights of ways in along waterways and areas of natural scenic beauty. The council is continually seeking to identify suitable areas to create way-marked ways and in particular, ‘Blue Ways’ along water features in the region.

***Policy LH4: Public Rights of Way and Way-Marked Ways*** *It is the policy of the Council to preserve and protect existing public rights-of-way and waymarked ways which give access to lakeshores, mountains, riverbanks or other places of natural beauty or recreational, tourism or heritage amenity, and to create new formal public rights-of-way as appropriate.*

There are no waymarked trails within the LVIA study area and the nearest Blueway is Lough Derg Blueway approximately 19.5 kilometres from the nearest turbine. The proposed turbines will not be visible from Lough Derg Blueway.

### Green and Blue Infrastructure Masterplan Roadmap for Tipperary Waterways 2018

Tipperary Council has produced a draft infrastructure plan to connect and enhance green corridors and green spaces and waterways such as rivers, lakes, and pond systems. The aim of the masterplan is to enhance the existing natural heritage for the local communities and boost tourism and job creation in the region. Planning of water and shoreline activities is critical for the maintenance of tourism and health. Portions of the Upper Lough Derg and Shannon Callows LCAs which fall within the 20km study zone contain green and blue infrastructure areas which are noted for their ecological significance.

**SO5-12** It is an objective of the Council to support and seek funding opportunities for the development of greenway/blue ways, walking and cycling trails.

### Land-Use Compatibility

In Table 6.2 of the Landscape Character Assessment of Tipperary also gives ‘generalised guidance on the likely compatibility – based on landscape sensitivity – between the Landscape Character Areas of the County and the most common types of land-uses’, which is reproduced here for the LCAs within the study area in Figure 12.5. Here, ‘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]. Figure 12.5 below, is a reproduction of Table 6.2. showing only LCAs 7 and 11, where the compatibility of LCAs 7 and 11 are low and least, respectively. However, this must be qualified by adding that these areas were assessed for their compatibility in terms of wind turbines being constructed within the LCA and did not address wind turbines being seen from them.

Compatibility Key		Sensitivity Class	AGRICULTURE AND FORESTRY		HOUSING		URBANISATION		INFRASTRUCTURE	EXTRACTION		ENERGY	
Most	High		Agriculture	Forestry	Rural Housing	Urban Expansion	Industrial Projects	Tourism Projects	Major Powerlines	Sand & Gravel	Rock	Windfarm	Solar
Medium	Low												
Least													
Landscape Character Areas													
7. Borrisokane Lowlands		2											
11. The Shannon Callows		3											

Figure 12.5 Compatibility between LCA 1 and Land-use Types (reproduced from Landscape Character Assessment of Tipperary)

#### 12.4.1.2.1 Wind Energy Policy pertaining to Landscape

Tipperary Council have produced a county wide Renewable Energy Strategy which sets out the county’s aim for reaching green energy targets by improving the sustainability of the county’s energy, supporting enterprises in energy and growing the renewable energy sector. Tipperary has a substantial wind resource and are open to potential wind developments in areas considered suitable to this particular type of development.

**Policy RE2:** It is the policy of the Council to facilitate new development which integrates with and respects the character, sensitivity and value of the landscape in accordance with the

*guidelines set out in the Tipperary Landscape Character Assessment 2016 and the policies as set out in the County Development Plan (as varied) and the Development Management standards set out in Chapter 10.*

Appendix 1 of the Tipperary Renewable Energy Strategy contains the county-wide ‘Tipperary Wind Energy Strategy 2016’. This strategy builds on the Tipperary Landscape Character Assessment 2016, The North and South County Development Plans, the 2006 DoEHLG guidelines and Wind Energy Strategies of adjoining counties Limerick, Cork, Waterford, Laois, Galway, Clare and Offaly. Map 11 of the *Tipperary Wind Energy Strategy 2016* shows the areas ‘Unsuitable’ and ‘Open for Consideration’ for new wind energy development. The area of this map included in the study area has been reproduced in Figure 12.6 below.

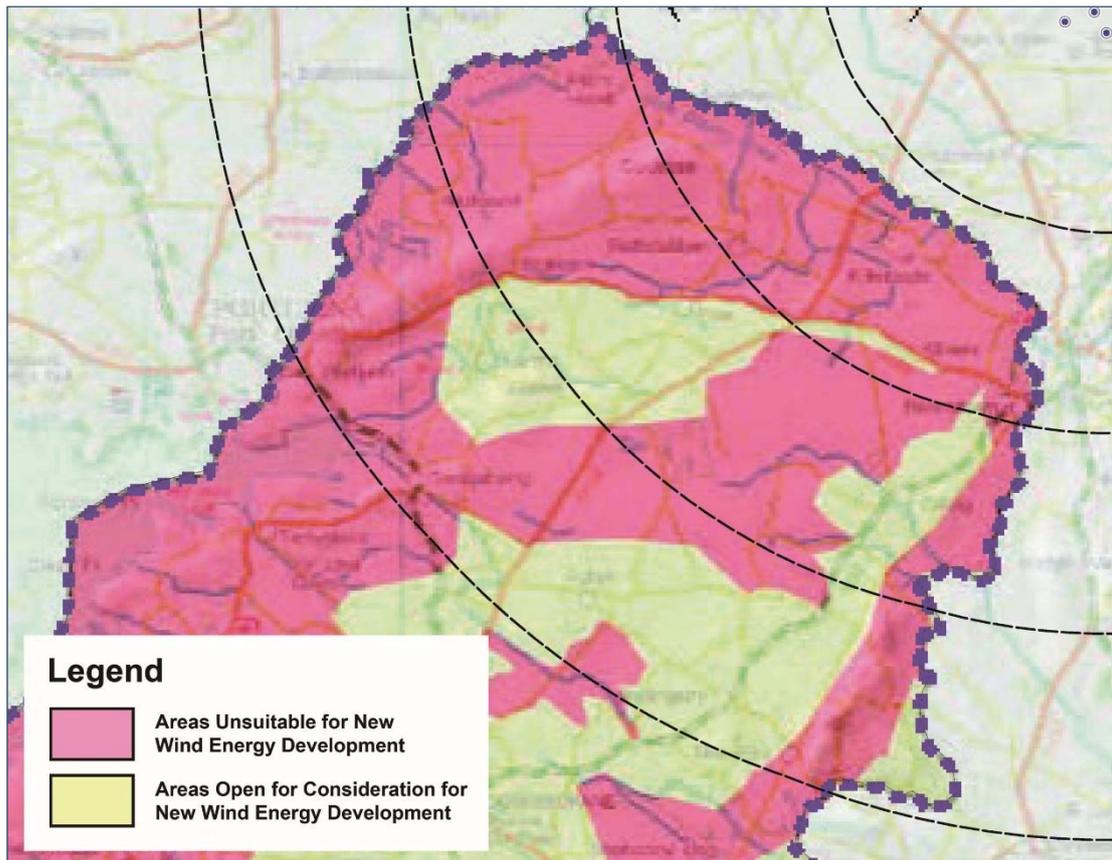


Figure 12.6 Tipperary Wind Energy Policy Areas in LVIA Study Area (Source: Tipperary Renewable Energy Strategy 2016)

The Tipperary Wind Energy Strategy 2016 lists county boundary areas which may be unsuitable for wind energy development. The wet lowlands and callows of South Offaly and north Tipperary which comprises the Shannon Callows and Borrisokane area included in these areas.

***TWIND 4.1*** *Proposals shall demonstrate conformity with existing and approved wind farms to avoid visual clutter. In this respect, developers should consider the cumulative impact of new development in the context of the location of both existing and permitted developments.*

***TWIND 4.2*** *Proposals in Areas ‘Open for Consideration’ shall be sited having consideration to the landscape sensitivity and capacity analysis set out in the Tipperary Landscape Character Assessment 2016 and the provisions of the County Development Plan (as varied) in relation to landscape (Chapter 7). All applications shall have regard to the visual impact of turbines and ancillary development (such as access roads, boundary fencing, control buildings and grid connections).*

**TWIND 4.6** All proposals for wind energy development will have regard to the cumulative effect of the development on the environment when considered in conjunction with other existing and permitted wind energy developments in the area.

**TWIND 4.8** All applications will have regard to the impact of any proposal for wind energy development on surrounding tourism and recreational related activities and the compatibility of same will be carefully considered in the assessment of any planning application.

### 12.4.1.3 County Galway

Chapter 9 of the Galway County Development Plan 2015-2021 relates to Heritage, Landscape and Environmental Management and sets out the county’s policies and objectives for landscape protection, management and enhancement:

**Policy LCM 1 – 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.

**Objective LCM 1 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 2 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.

The five Landscape Sensitivity classes are Low, Moderate, High, Special and Unique. Map LCM2 of the CDP shows that the areas of County Galway within the LVIA study area are rated as predominantly low sensitivity with narrow strips of moderate and high sensitivity areas along the River Shannon. Landscape value of the county has also been assessed and is shown on Map LCM1 of the CDP. This map shows all areas within the study area to be of low landscape value with a narrow corridor along the River Shannon being classed as of medium value.

### Focal Points and Views

Galway County Council have attributed important focal points throughout the county from which views of high scenic quality are possible. The council recognises the importance of these views for amenity, tourism and economic and cultural value.

**Objective FPV 1 Development Management** Preserve the focal points and views as listed in Map FPV1 from development that in the view of the Planning Authority would negatively impact on said focal points and views. This shall be balanced against the need to develop key infrastructure to meet the strategic aims of the plan and have regard to the zoning objectives of serviced development land within the Galway Metropolitan Area.

Two focal points fall within the 20km study area, shown on Figure 12.8 and listed in

Table 12.8 Table 12.8 in Section 12.5 *Visual Baseline*. Both focal points and views are over 17km from the nearest turbine and are focused away from the direction of the proposed development.

### County Galway Wind Energy Strategy

The County Galway Wind Energy Strategy (WES) forms Appendix 4 of the current Galway County Development Plan 2015-2021. A Strategic Environmental Assessment (SEA) and Habitats Directive Assessment (HDA) were undertaken when the WES was first adopted in 2011 and for each subsequent iteration of the County Development Plan. The WES was informed by both the County Galway Development Plan and the Landscape and Landscape Character Assessment for County Galway 2002. Section 2.2.9 of the WES states:

*Landscape policies and designations in the GCDP were considered in the strategy and included in the GIS. These include areas designated as landscapes of high value or sensitivity and important focal points / views. In addition, the Landscape and Landscape Character Assessment for Galway County 2002 was used as a baseline to assess capacity for areas to accommodate wind farm developments.*

Wind Energy policies and objectives relating to landscape include the following:

***Policy WE6 Wind Energy Infrastructure*** *Proposals for the development of infrastructure for the production, storage and distribution of electricity through the harnessing of wind energy will be considered in appropriate sites and locations, subject to relevant legislation and policy, environmental, landscape and amenity considerations, electricity infrastructure, settlement patterns and wind energy potential and the guidance in the WES. This will include, inter alia, requirements and considerations in relation to Natura 2000 sites and the Habitats Directive (in particular Article 6 (3) and (4)), biodiversity and the SEA Directive and the objectives of the WRBD River Basin Management Plan.*

***Policy WE7 Implementation of Wind Energy Strategy*** *Proposals for Wind Energy development can be considered in all areas subject to meeting the specific requirements outlined in this Wind Energy Strategy. However it is anticipated that most development proposals will be located in the Strategic Areas, Acceptable in Principle Areas and areas Open to Consideration and it is the policy of the Council to maximise Wind Energy development in all three of these areas on a case by case basis subject to meeting the specific requirements of this Wind Energy Strategy and taking account of any guidance contained in the Strategy.*

***Objective WE6 Wind Energy Development and Guidance*** *Facilitate wind energy developments and necessary support infrastructure in appropriate sites and locations, subject to relevant policy, legislation, environmental, landscape and amenity considerations. This shall include the guidance in this WES and other relevant guidance where applicable, including, inter alia, the Guidelines for Planning Authorities on Wind Energy Development (DoEHLG, 2006) (and any updated document), the Best Practice Guidelines for the Irish Wind Energy Industry (IWEA, 2012), the European Best Practice Guidelines for Wind Energy Development (EWEA, 2002) and the Guidance Document: Wind Energy Developments and Natura 2000 (EC, 2010).*

***Objective WE7 Wind Energy Development Projects*** *Planning applications for wind energy developments will be guided by, and assessed in accordance with, the wind energy policies and objectives in this section, the landscape capacity considerations in Section 4 and the development management considerations, guidelines and standards outlined in Section 5. Where appropriate, planning applications for wind energy developments will also need to consider the landscape, biodiversity/ecological receptors, environmental and amenity impacts on the areas of adjoining Local Authorities.*

The WES also states that viewshed analysis was undertaken for certain upland areas with strategic potential for wind farms, noting that while these viewsheds are a useful guide, they do not take account

of screening offered by vegetation or buildings so should not be considered definitive and do not replace more detailed modelling required for site specific wind farm developments.

The WES used five classifications for wind farm developments in County Galway, with specific objectives pertaining to each. The five classifications are as follows:

- Strategic Areas (SA) – Considered to be most suitable for wind farm development.
- Acceptable in Principle (AP) – Considered suitable for wind farm development.
- Open for Consideration (OC) – Areas to be evaluated on a case-by-case basis.
- Not Normally Permissible – Areas not normally considered suitable for wind farm development.
- Low Wind Speed Areas – Areas generally not considered viable.

The classification zones can be found on Figure 5 and 5a of the County Galway WES. The 20km study zone for the proposed development falls within areas categorised as Not Normally Permissible and Low Wind Speed Areas.

**Objective WE4 Not Normally Permissible Areas (NP)** *These areas are not normally considered suitable for wind farm development due to their overall sensitivity and constraints arising from landscape, ecological, recreational, settlement, infrastructural and/or cultural and built heritage resources. The HDA and SEA process in particular helped to inform the identification of these areas. Future wind farm developments will accordingly only be considered in these areas where project level HDA and EIA can demonstrate to the satisfaction of the planning authority that environmental and other impacts can be successfully avoided, minimised and/or mitigated. The approach taken to the compilation of the Wind Energy Strategy is based on a consistent and robust methodology which was not varied to take account of individual planning permissions which have been fully assessed under Habitats Directive Assessment. However, where any project has been granted planning permission following Habitats Directive Assessment which shows that the project complies with the Habitats Directive and the Birds Directive, it is considered that this project is consistent with and in full compliance with this Wind Energy Strategy.*

**Objective WE5 Low Wind Speed Areas (LW)** *These areas are generally not considered viable for wind farm development and in many cases may not be suitable due to their overall sensitivity and constraints arising primarily from amenity, settlement, infrastructural, recreational and/or cultural and built heritage resources. Any applications received for wind energy developments in these areas will be evaluated on a case by case basis subject to viable wind speeds, environmental resources and constraints and amenity, safety and cumulative impacts.*

However, it should be stressed that these classifications are aimed at assessing the suitability of these areas in County Galway to absorb wind turbines, but not the potential impact of wind turbines being visible in these areas.

#### 12.4.1.4 Summary of Potential Landscape Receptors – Landscape Designations

As outlined above scenic routes and views are assessed as visual receptors in this LVIA, leaving only County Offaly High Amenity Areas and County Tipperary Primary and Secondary Amenity. All landscape receptors within the study area have been listed in Table 12.1 below. It should be noted that ‘Eiscir Riada, other eskers’ and ‘Mushroom Stones’ High Amenity Areas are not single cohesive areas, but multiple very small areas dotted around the county. Hence assessment of the visual and landscape effects on all these individual locations is beyond the scope of this LVIA study. While it is possible that in some cases there may be limited visibility, the impact is anticipated to be very limited and therefore these two High Amenity Areas will not be included in the landscape receptors.

Table 12.1 Landscape Receptors – Landscape Designations

Description	County	Landscape Designation	Theoretical Visibility (ZTV)	Actual Visibility
<b>up to 5 km</b>				
Lough Boora Parklands	Offaly	Area of High Amenity	Full	Anticipated
Shannon River and Callows	Offaly	Area of High Amenity	Partial	Not anticipated
Grand Canal	Offaly	Area of High Amenity	Full	Very limited
<b>10 to 15 km</b>				
Slieve Bloom Mountains	Offaly	Area of High Amenity	Partial	Very limited
Clonmacnoise Heritage Zone	Offaly	Area of High Amenity	Predominantly no visibility	Not anticipated
Lough Derg & Environs	Tipperary	Primary Amenity Area	Partial	Not anticipated
<b>15 to 20 km</b>				
Clara Bog	Offaly	Area of High Amenity	Predominantly no visibility	Not anticipated
Pallas Lake	Offaly	Area of High Amenity	Predominantly no visibility	Not anticipated

## 12.4.2 Landscape Character of the Proposed Development Site

### 12.4.2.1 DoEHLG- ‘Draft Revised Wind Energy Development Guidelines’ (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 include ‘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.

The proposed development site, the areas surrounding as well as many other areas within the study area can be described as ‘flat peatland’, however, there are also areas of flat farmland within the study area. Although in some cases the turbines will be viewed from this other landscape type, it is considered that in terms of the siting and design the ‘flat peatland’ landscape type most strongly influences the siting and design of the proposed development. Further details of this landscape character types are provided below.

#### 1.1.1.1.2 Flat Peatland



Plate 12.1 View showing flat peatland on the proposed development site

The key characteristics of the flat peatland landscape type 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’ in the DoEHLG guidelines 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.’

### Spatial Extent

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

### Spacing

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

### Layout

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

### Height

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

### Cumulative Effect

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

The proposed development is in accordance with the above guidance in terms of location (turbines located away from roadsides) spatial extent (moderate to large scale of the wind energy development) spacing (regular), layout (clustered grid) height (in keeping with the landscape scale and on an even profile) and cumulative effect (adjacent wind developments will be of a similar design and height and visually read as one wind farm).

## 12.4.2.2 Site Visit Findings

### 12.4.2.3 Topography

The local topography of the area is predominantly flat and low lying with very small and gradual variations in levels as seen in Plate 12.2 below. The lowest area is in the far eastern part of the site at approximately 47 metres O.D. (Ordnance Datum) and the highest level is in the south-western part of the site at 65 metres O.D.



Plate 12.2 Image indicating the topography of the proposed development site.

#### 12.4.2.4 Drainage

The topography of the proposed development site is relatively flat with an elevation range of between approximately 53 and 62mOD (metres above Ordnance Datum). Along the majority of the site boundaries, a ~1-2m high peat headland exists which is a remnant of the original bog. These headlands and in some areas remnant peat banks create a boundary berm, forming a basin effect within the extraction areas of the overall bogs. There are some areas of higher ground at the centre and southwest of Clongawny bogs and these are covered with conifer forestry.

The surface of Clongawny bog is drained by a network of northeast / southwest orientated drains that are typically spaced every 15 to 20m. Larger arterial drains run northwest-southeast which connect the smaller field drains. On the western Clongawny bog, these drains typically slope gently towards perimeter settlement ponds and surface water outfalls. Surface water outflows from Clongawny bog are located at the north and north-eastern edges, and also at the south and southwestern boundaries of the site. All bar the northern outfall are drained by gravity.

The surface of Drinagh bog is drained by a network of north / south orientated drains that are typically spaced every 15 to 20m. Larger arterial drains run north-south also, and these connect the smaller field drains. Surface water outflows from Drinagh bog are located at the northwest and southeast. Both outfalls are drained by gravity. Further detail on drainage of the site is included in Chapter 9: Hydrology and Hydrogeology.

#### 12.4.2.5 Landcover

Landcover is the term used to describe the combinations of vegetation and land-use that cover the land surface. It comprises the more detailed constituent parts of the landscape and encompasses both natural and man-made features.

The vast majority of the site, with the exception of small remnant sections of raised bog around the peripheries of the site, comprise of milled peat, as shown in Plate 12.3 below. These areas are dominated by bare peat with little growth of vegetation.



*Plate 12.3 Image showing areas of cutover bog with coniferous plantation in the background*

Where peat production/extraction has ceased for some time, these areas have begun to revegetate, predominantly by poor fen or birch dominated scrub/woodland as seen in Plate 12.4 below.



*Plate 12.4 Image showing an area where the cutover bog is revegetating with heath and scrub*

In addition, there were some areas of open water, see Plate 12.5 below, within the study area and were fringed by poor fen and reedbeds



*Plate 12.5 Waterbody with coniferous plantation in the background*

Other areas included secondary dry heath and wetter heath. The wetter heath covers a broad range of conditions from bare peat and dry but vegetated to much wetter areas that grade into poor fen.

The grasslands that are present within the study area are primarily limited in their extent to the sides of old trackways and railway lines. Many of the tracks and grasslands were surrounded by willow scrub and woodlands making them sheltered.

There are some remnant uncut raised bog habitats at the site of the proposed project. The areas of raised bog recorded within the site are typically small in area, have been historically drained and are relatively dry.

Coniferous plantation forestry on site are also accompanied by a small sections of ash trees in some areas.

Beyond the site boundary the landcover is predominantly pastoral agricultural fields separated by hedgerows and deciduous tree lines.

#### 12.4.2.6 Land Use

The land uses within the proposed development site are a mixture of bare cutover and cutaway peat, re-vegetation of bare peat, commercial forestry, telecommunications (a 30m Mast) and wind measurement (a single 100m anemometry mast on Clongawny Bog). There are also a number of Bord na Móna rail lines that pass through the bogs facilitating the transportation of milled peat to Derrinlough Briquette Factory which is located in the most western part of Drinagh bog.

The surrounding land uses and types comprise a mixture of forestry, agricultural land, a mosaic of active peat extraction, cutover and cutaway peatland, amenity (e.g. Lough Boora Parklands) and wind

energy. The operational Meenwaun Wind Farm is located adjacent to the southwestern boundary of the proposed development site.



Plate 12.6 Image indicating the land use of the proposed development site.

### 12.4.3 Landscape Value and Sensitivity of the Proposed Development Site

To determine the landscape sensitivity and value of the proposed development site the landscape issues pertaining to the site have been summarised in

Table 12.2 below. These in turn were then summed up in a landscape value and landscape sensitivity classification of Low, Moderate and High for the proposed development site.

Table 12.2 Indicators of Landscape Value

Indicator	Description
Landscape Designations	The eastern part of the proposed development site is included in the Lough Boora Parklands Area of High Amenity and as a result this area are classed as of High Landscape Sensitivity. The western part is considered of Moderate Landscape Sensitivity.
Landscape Quality/Condition	The condition of the landscape is generally degraded due to the past peat harvesting operations.
Wildness/naturalness	Due to the visible anthropological influences, such as turf cutting, peat production and briquette factory, within and around the proposed development site, any sense of naturalness or wildness has been greatly diminished.

Indicator	Description
Recreation Value	The majority of the proposed development site has no recreational value, however, some areas to the east are included in the Boora Parklands and may be developed for recreation in the future.

Due to the issues summarised in

Table 12.2 above the landscape value of the proposed development site is deemed Low and the landscape sensitivity as Low to Moderate.

#### 12.4.4 Landscape Character of the Study Area

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.

In the *Tipperary Landscape Character Assessment (2016)* and *Landscape and Landscape Character Assessment for County Galway (2002)* Counties Tipperary and Galway have identified Landscape Character Areas (LCAs) There is no published Landscape Character Assessment for County Offaly, therefore, for the purpose of this Landscape and Visual Impact Assessment, a provisional landscape character assessment for the LVIA study area was carried out by MKO, which is presented below. The LCAs falling within the LVIA study area are described below and shown in Figure 12.7, below.



*Figure 12.7 Landscape Character*

#### 12.4.4.1 Landscape Sensitivity

The approach to landscape sensitivity differs for the three counties as follows:

- **County Offaly:** Section 7.11 and Map 7.15 of the CDP identify three sensitivity categories:
  - Low
  - Moderate
  - High
- **County Tipperary:** Six classes of sensitivity are identified in the Tipperary Landscape Character Assessment 2016:
  - 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 to the landscape
- **County Galway:** Five landscape sensitivity classes were established and are listed in Chapter 9 of the CDP:
  - Class 1 – Low sensitivity •
  - Class 2 – Moderate sensitivity •
  - Class 3 – High sensitivity •
  - Class 4 – Special •
  - Class 5 – Unique

For the sake of consistency, the respective landscape sensitivity categories of each county were translated into the following four classes as set out in Appendix 12.1:

- Very High
- High
- Moderate
- Low

#### 12.4.4.2 County Offaly Landscape Character Areas (provisionally prepared by MKO)

Offaly County Council has not undertaken a Landscape Character Assessment The provisional LCAs, identified by MKO for the purpose of this Landscape and Visual Impact Assessment, are largely based on the ‘Areas of High Amenity’ as shown on Map 7.17 and their description in Section 7.8 of the CDP. The landscape sensitivity classification shown on Map 7.9 and their descriptions set out in Tables 7.11.1 to 7.11.4 of the CDP were also taken into consideration. Site visits and aerial photography also informed the process.

#### 12.4.4.3 Central Wetlands

Key characteristics:

- Previously cutaway bogs in the process of transition from industrial uses, after-use revegetation to wetland area
- Landscape pattern not clearly distinct
- Generally characterised by open, expansive vistas with sparse vegetation
- Largely free of buildings and associated installations such as overhead wires

Assigned Landscape Sensitivity: Moderate

#### 12.4.4.4 River Shannon and Callows

Key characteristics:

- Lands liable to flooding
- Water meadows, important breeding grounds for migrant birds
- Local scenic views along the river
- Includes local heritage sites such as Clonmacnoise and the Callows.

Assigned Landscape Sensitivity: High

#### 12.4.4.5 Grand Canal Corridor

Key characteristics:

- Linear landscape character area defined by the waterway and adjacent infrastructure such as towpaths
- Canal corridor mostly enclosed by hedgerow and tree lines often opens up to views across surrounding landscape
- Minimal topographical variation of waterway and ancillary elements, unlike the surrounding landscape
- The canal passes through and links a very wide range of landscape types
- Focus of a wide range of uses, in particular, for recreation and tourism purposes.

Assigned Landscape Sensitivity: High

#### 12.4.4.6 North-western Lowland Farmland and Marginal Peatland

- Lowland area with minor changes in level
- Contrast of large areas of degraded cutover bog and agricultural fields
- Area of eskers to the north

Assigned Landscape Sensitivity: Low

#### 12.4.4.7 Birr Plains

- Generally land gradually/gently rises eastwards towards the Slieve Bloom Mountains
- Series of hills running south-west to north-east parallel to Slieve Bloom Mountains including Kiltubbrid Island, Knockhill and Drinagh, Mountbolus
- Orderly agricultural field patterns predominant
- High degree of tree cover in the form of mature hedgerows
- Few isolated areas of forestry or bog

Assigned Landscape Sensitivity: Low

#### 12.4.4.8 Slieve Bloom Upland Area

Key characteristics:

- Extensive, mountainous uplands (only substantial uplands in County Offaly)
- Dramatic contrast to the county's otherwise flat landscape
- Spectacular views, forest and riverside walks
- Unbroken area of upland blanket peat (largest in Ireland) retains sense of isolation
- Extensive areas of coniferous forestry on lower slopes

- Includes Knockbarron to the west
- Very sparsely populated

Assigned Landscape Sensitivity: Very High

#### 12.4.4.9 County Tipperary Landscape Character Areas

The *Landscape Character Assessment of Tipperary 2016* identified 23 Landscape Character Areas (LCAs). The nearest Co. Tipperary LCA is LCA 11 Shannon Callows, all of which falls within the LVIA study area. The northern third of LCA 7 Borrisokane Lowlands also falls within the study area. The key characteristics, taken from *Landscape Character Assessment of Tipperary 2016*, for LCAs 11 and 7 are outlined below.

##### 12.4.4.9.1 LCA 11 Shannon Callows

Key characteristics:

- Strongly rural area much influenced by Rivers Shannon and Brosna.
- Historical importance of River Shannon crossing evidenced by siting of Redwood Castle, where one of the Annals of the Four Masters was written and Donal O’Sullivan Beara crossed the Shannon in 1603.
- Extensive raised bogs, river flood plains and nationally recognised ecological value of Shannon Callows.
- Isolated and rural character with settlement constrained by callows and raised bogs.
- Dispersed settlement with limited number of nucleated settlements (the villages of Rathcabbin and Riverstown present within the character area.
- Extensive views afforded southwards across flat plains towards Silvermines from regional road.
- Limestone ridges afford good views over to Counties Offaly and Galway and the meandering rivers Shannon and Brosna.

Assigned Landscape Sensitivity: High

##### 12.4.4.9.2 LCA 7 Borrisokane Lowlands

Key characteristics:

- Farmed landscape dominated by limestone pasture interspersed with major communication routes to Portumna and Birr in adjoining Counties.
- Occasional farmed ridges and gently undulating areas add landscape diversity to this large area.
- Long settlement history spanning from the Neolithic tombs at Ardcroney, and Dominican priory at Lorrha to the Cromwellian development of Cloughjordan and Borrisokane.
- Very high density of ‘Big Houses’ with tree lined avenues and cut stone outbuildings.
- Scattered settlement with principal nucleated settlement of Borrisokane located at junctions of major and regional roads.
- Due to generally low-lying landform, long views are afforded from occasional ridges across to Offaly, the western drumlin belt and the Silvermines.

Assigned Landscape Sensitivity: Moderate

#### 12.4.4.10 County Galway Landscape Character Areas

The Landscape and Landscape Character Assessment for County Galway, published by Galway County Council in 2002, divides the county into 25 distinct Landscape Character Areas (LCAs) as well as assigning a landscape value and landscape sensitivity to each LCA.

The nearest to the subject site is LCA 2. Shannon and Suck River Valley between Portumna and Ballinasloe, however a significant proportion of LCA 3. East central Galway (Athenry, Ballinasloe to Portumna) also falls within the study area. Relevant details along with landscape value and sensitivity assigned in the Landscape Character Assessment for both landscape character areas are outlined below.

##### 12.4.4.10.1 **Shannon and Suck River Valley between Portumna and Ballinasloe**

Key characteristics:

- Flat to undulating low-lying grassland with river as main landscape element.
- Some vegetation, including mature trees along the river edge environment.
- Distant views can be gained of the Slieve Aughty Mountains.
- Scenic quality is higher in this area than that found in the flat pastoral areas of the county (areas 1, 3 and 5), due to the unique features such as the rivers Shannon and Suck and the views of the Slieve Aughty Mountains.
- No national monuments to be found in this area.
- Medium Landscape Value in Landscape Character Assessment for County Galway (2002)

Assigned Landscape Sensitivity: High

##### 12.4.4.10.2 **East Central Galway (Athenry, Ballinasloe to Portumna)**

Key characteristics:

- Flat to undulating lowland
- Pastoral landscape of fields bounded by stone walls.
- Scattered patches of bogland containing scrub and scattered mature trees.
- Generally, not noteworthy in terms of scenic value
- Scenic route – R359 between Castleblakeney and Killaan Cross.
- Minor route between Mountbellewbridge and Ballyforan is scenic.
- 15 National monuments are located in this area. Many of these cannot be viewed from a distance and therefore contribute little in terms of wider scenic value. They are of interest at a very local level historically.
- Low Landscape Value assigned in Landscape Character Assessment for County Galway (2002)

Assigned Landscape Sensitivity: Low

#### 12.4.4.11 Summary of Potential Landscape Receptors – Landscape Character Areas

The LCAs falling within the study area have been listed in Table 12.3 below, where theoretical visibility obtained from ZTV mapping as well as actual visibility observed on site are also shown.

Table 12.3 Landscape Receptors – Landscape Character Areas

LCA	County	Theoretical Visibility (ZTV)	Actual Visibility
<b>up to 5 km</b>			
Central Wetlands	Offaly	Full	Partial
Grand Canal Corridor	Offaly	Mainly full	Very limited
River Shannon and Callows	Offaly	Full	Not anticipated
Shannon and Suck River Valley	Galway	Full	Not anticipated
Birr Plains	Offaly	Mainly full	Not anticipated
<b>5 to 10 km</b>			
North-western Lowland Farmland and Marginal Peatland	Offaly	Full with patches of no visibility	Very limited
East Central Galway	Galway	Full with patches of no visibility	Very limited
LCA 11 Shannon Callows	Tipperary	Full with patches of no visibility	Not anticipated
LCA 7 Borrisokane Lowlands	Tipperary	Full with patches of no visibility	Not anticipated
<b>10 to 15 km</b>			
Slieve Bloom Mountains Upland Area	Offaly	Full with patches of no visibility	Very limited

## 12.4.5 Landscape Receptor Preliminary Assessment

After identifying the landscape receptors in the study area based on landscape designations derived from the respective CDPs and Landscape Character Areas (LCAs) taken from the Tipperary and Galway Character Assessments and compiled for Offaly by MKO, a preliminary assessment will be carried out to screen out landscape receptors that will not or only very marginally impacted by the proposed development.

Using the Zone of Theoretical Visibility mapping shown on Figure 12.8 the landscape receptors that will have no theoretical visibility are screened out as shown in below.

Table 12.4 Landscape Receptors Screened Out - **No visibility** indicated by ZTV map

Landscape Receptor Category	County	Landscape Receptor with no visibility shown on ZTV
<b>Landscape Designations</b>	Offaly	Areas of High Amenity - Clonmacnoise Heritage Zone, Clara Bog and Pallas Lake

For the remaining landscape receptors, potential visibility was assessed on site. In the case of the landscape receptors shown in Table 12.5, views towards the turbines were either entirely screened or substantially screened. This along with, in some cases, distance to the proposed development site precluded these locations being selected as viewpoints.

Table 12.5 Landscape Receptors Screened Out - **No visibility** found on site

Landscape Receptor Category	County	Visual Receptor with no significant visibility found on site
Landscape Designations	Offaly	Areas of High Amenity - Shannon River and Callows, Slieve Bloom Mountains
	Tipperary	Lough Derg and Environs Primary Amenity Area
Landscape Character Areas	Offaly	Grand Canal Corridor, River Shannon and Callows, Birr Plains
	Tipperary	LCA 11 Shannon Callows, LCA 7 Borrisokane Lowlands
	Galway	Shannon and Suck River Valley

Following the pre-assessment exercise the landscape receptors shown in Table 12.6 below have been selected for assessment due to their significance within the study area and the potential landscape effects they may experience due to the proposed wind energy development.

Table 12.6 Landscape receptors screened in for full assessment

Landscape Receptor Category	County	Landscape Receptor
Landscape Designations	Offaly	Lough Boora Parklands Area of High Amenity
Landscape of Proposed Development Site	Offaly	Landscape of Proposed Development Site
Landscape Character Areas	Offaly	Central Wetlands
		North-western Lowland Farmland and Marginal Peatland
		Slieve Bloom Mountains Upland Area
	Galway	East Central Galway

## 12.5 Visual Baseline

### 12.5.1 Visual Receptors

The main purpose of establishing the visual baseline is to identify the key visual receptors that should be considered for viewpoint selection. To this end the following have been identified:

- > Designated Scenic Routes and Scenic Views
- > Settlements
- > Recreational and Tourist Destinations
- > Recreational Routes
  - Waymarked Walking Routes
  - Cycle Routes
  - Scenic Drives
  - Tourist Routes (e.g. Wild Atlantic Way)
- > Viewing Points (e.g. marked on OS Maps)
- > Transport Routes

These visual receptors are listed in tables in the following sections along with theoretical visibility at those locations indicated by the ZTV maps. All visual receptors are shown on Figure 12.8.



*Figure 12.8 Visual Baseline and Half-blade ZTV*

## 12.5.1.1 Designated Scenic Routes and Scenic Views

The designated scenic routes and views are separated by counties and were taken from the respective county development plans. In addition to theoretical visibility, whether the focus of the scenic route or view is directed towards the turbines is also indicated in the tables.

### 12.5.1.1.1 County Offaly

Protected views and scenic routes within the study area designated in the Offaly County Development Plan 2014-2020 are listed in

Table 12.7 below. The table lists the 15 views by number (the two scenic routes are identified by northern and southern scenic route), a description of the location, the focus of the view stated in the CDP, whether the view is directed towards the proposed turbine and if there is theoretical visibility indicated by the ZTV map.

Table 12.7 County Offaly Protected Views and Scenic Amenity Routes within 20 km

View No.	Description	Direction	Directed to Site?	Theoretical Visibility
<b>within 5 km</b>				
V5	N52 in the townland of Heath, Bunaterin, Derrydolney, Ballywilliam, Curraghmore, Ballynacard, Bally na Curra.	Slieve Bloom Mountains	No	Partial to Full
V6	R356 and Road No. L-07014 in the townlands of Cushcallow, Park, Mullaghakeeraun and Curralahan.	River Shannon and Boglands	No	None to Full
V11	Regional Road R357 in the townlands of Lumcloon, Bun, Rin, Leabeg and Leamore.	Southwards towards Slieve Bloom Mountains	Partial	Full
V12	Road No. L-07009 in the townland of Stonestown.	Over boglands and Slieve Bloom Mountains	Yes	Full
Northern Scenic Amenity Route	R357 from Blueball to Shannonbridge	Esker landscape, peatlands, undulating agricultural lands, Lough Boora Parklands and the callows area of the River Shannon	Partial	Full
<b>5 km to 10 km</b>				
V10	Road No. L-03004 in the townlands of Skehannagh, Killagally Glebe, Ballyclare	Southwards towards Slieve Bloom Mountains	Yes	Full
V13	Road No. L-03012 in the townlands of Glaster, Ballynasrah, Newtown, Kilmochonna.	Over Little Brosna and Callows	No	Full
V14	R440 in the townlands of Kyle, Cloghanmore, Streamstown, Ballinree, Killaun.	Towards Slieve Bloom Mountains	No	None to Partial

Southern Scenic Amenity Route	R440 and R421 Birr to Kinity and Ballard to Kinity	Open countryside, Slieve Bloom Mountains and foothills	Partial	None to Full
10 km to 15 km				
V16	Road No. L-04025 in the townlands of Clonee, Cumber Lower	Westward over farmland	Yes	Full
V17	Road No. L-06034 in the townlands of Knockhill and Drinagh.	Towards North East and North West over lowlands	Yes	None to Full
V18	Road No. L-08008 in the townlands of Grange, Belhill, Longford Big and Church Land.	Views towards Seir Keiran Monastic Site	No	Partial to Full
15 km to 20 km				
V2	Road No. L-08003 in the Slieve Bloom Mountains, townlands of Clough, Ballykelly, Coolcreen, Glenletter, Glenregan, Castletown, Forelacka and Glinsk.	Slieve Bloom Mountains, River Shannon northwards over lowlands	Yes	None to Full
V3	Pilgrims Road (Road No. L-07013) in the townlands of Clonmacnoise, Clonascra, Ballyduff and Bloomhill.	Clonmacnoise and River Shannon, Eskers, Mongan Bog and Finlough.	Partial	None to Partial
V4	Road No. R444 in the townlands of Clonmacnoise, Creevagh.	River Shannon and boglands	No	Partial to Full
V15	Road No. L-04006 in the townland of Knock	Slieve Bloom Mountains, Leap Castle	No	None
V19	Road No. L-02011 in the townlands of Rahan Demesne, Newtown.	Churches and Earthworks.	No	None to Partial

### 12.5.1.1.2 County Galway

The 122 Focal points and Views are shown and listed on Map FPV1 -Focal Points/Views of the Galway CDP. Only two are within 20 kilometres of the proposed turbines and they are listed in Table 12.8 below. The table lists the views by number, a description of the location and direction of the view, whether the view is directed towards the proposed turbine and if there is theoretical visibility indicated by the ZTV map.

Table 12.8 County Galway Vocal Points and Views within 20 km

View No.	Description	Directed to Site?	Theoretical Visibility
15 km to 20 km			
4	Townhouse at Junction of R355 and third-class road at Laurencetwon	No	Partial
5	Folly located southwest of Laurencetown	No	No

### 12.5.1.1.3 County Tipperary

Protected views are listed in Appendix 4 of the County Tipperary CDP and in Appendix 2 of the Landscape Character Assessment of Tipperary 2016. Only one of these falls within the LVIA study area and is listed in Table 12.9 below. The table lists the views by number, a description of the location and direction of the view, whether the view is directed towards the proposed turbine and if there is theoretical visibility indicated by the ZTV map.

Table 12.9 County Tipperary Protected Views within 20 km

View No.	Description	Directed to Site?	Theoretical Visibility
10 km to 15 km			
54	Views south on the R489 east of Lorrha marked on map	No	Full

### 12.5.1.2 Settlements

In order to identify which settlements within the study area should be considered for viewpoint selection the settlement strategies and hierarchies set out in the core strategies of the CDPs of Counties Offaly, Galway and Tipperary were consulted. The settlement hierarchies are presented by county below.

The hierarchy of towns, villages and other centres within Offaly is shown in *Map 1.2 Core Strategy Map* and listed in *Table 1.5 Settlement Hierarchy* of Offaly County Development Plan 2014 - 2020 as follows:

- > Midlands Gateway Town
- > Key Service Town
- > Service Town
- > Local Service Town
- > Villages

The settlement hierarchy for Galway is listed in section 2.6.1 in the Galway County Development Plan 2015 to 2021 as follows:

- > Galway Metropolitan Area
- > Hub Town
- > County Town
- > Key Towns/Other Towns
- > Other Villages
- > Small Settlements

The settlement hierarchy listed below was taken from Figure 3.2: County Settlement Hierarchy of the North Tipperary County Development Plan 2010:

- > Regional Town
- > Sub-Regional Towns
- > District Towns
- > Service Centres
- > Local Service Centres

Table 12.10 below lists the settlements identified from the respective CDPs 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 12.10 Significant Settlements within the Study Area

Settlement	County	Settlement Hierarchy	Theoretical Visibility
<b>up to 5 km</b>			
Banagher	Offaly	Local Service Town	Partial
Cloghan	Offaly	Village	Full
Shannon Harbour	Offaly	Village	Full
<b>5 to 10 km</b>			
Belmont	Offaly	Village	Full
Birr	Offaly	Key Service Town	Full
Crinkle	Offaly	Village	Partial
Ferbane	Offaly	Service Town	Full
Kilcormac	Offaly	Local Service Town	Full
Riverstown	Offaly/Tipperary	Village/Local Service Centre	Full
<b>10 to 15 km</b>			
Eyrecourt	Galway	Other Settlement	Full
Kinnitty	Offaly	Village	Full
Pollagh	Offaly	Village	Full
Rathcabbin	Tipperary	Local Service Centre	Partial
Shannonbridge	Offaly	Village	Partial
<b>15 to 20 km</b>			
Ballycumber	Offaly	Village	Full

Settlement	County	Settlement Hierarchy	Theoretical Visibility
Coolderry	Offaly	Village	Partial
Laurencetown	Galway	Other Settlement	Partial
Lorrha	Tipperary	Local Service Centre	Partial

### 12.5.1.3 Recreational and Tourist Destinations

Recreation and tourist destinations were identified after consulting the Tourism Strategy for County Offaly 2017-2022 as well as checking the most popular destinations in counties Offaly, Galway and Tipperary on Tripadvisor.ie. All are shown on Figure 12.8 and listed in Table 12.11 below, however, none are located within 5 kilometres of the proposed development

Table 12.11 Recreational and Tourist Destinations in the Study Area

Destination	County	County	Theoretical Visibility
<b>5 to 10 km</b>			
Birr Castle	Castle grounds and gardens open to the public	Offaly	Full
Lough Boora Discovery Park	Outdoor recreation and sculpture park	Offaly	Full
<b>15 to 20 km</b>			
Clonmacnoise	Sixth century monastic site	Offaly	None

### 12.5.1.4 Recreational Routes

Waymarked walking routes, cycle routes, scenic and drives were identified within the study area. The routes are shown on Figure 12.8 and are listed in Table 12.12 below along with theoretical visibility shown on ZTV mapping for the routes.

Table 12.12 Recreational Routes in the Study Area

Route Name	Description	Theoretical Visibility
<b>Up to 5 km</b>		
Lough Boora Walking and Cycling Trails	Various Walking Loops	Full theoretical visibility
Grand Canal and Way	Waterway and adjacent Waymarked Walking Route	Predominantly full theoretical visibility
<b>5 to 10 km</b>		
The Offaly Way	Waymarked Walking Route	Predominantly full theoretical visibility

Route Name	Description	Theoretical Visibility
<b>10 to 15 km</b>		
Knockbarron Eco Trail	Walking Loop	None
<b>15 to 20 km</b>		
Slieve Bloom Way	Waymarked Walking Route	Mainly no visibility, some patches of full theoretical visibility

### 12.5.1.5 Viewing Points

Within the LVIA study area four ‘Viewing Points’ are marked OSi Map in the Slieve Bloom Mountains, while they are not named or numbered, numbers have been assigned to them for the purpose of this study, which are shown on Figure 12.8 and used in Table 12.13 below. These viewing points also double as picnic areas, hence visual receptors are likely to be able to enjoy the view at their leisure.

Table 12.13 Viewing Points marked on OSI point in the study area

Location	County	Directed to Site?	Theoretical Visibility
<b>15 to 20 km</b>			
Viewing Point 1	Offaly	Partially	Partial
Viewing Point 2	Offaly	Partially	None
Viewing Point 3	Offaly	Yes	Partial
Viewing Point 4	Offaly	Yes	Full

### 12.5.1.6 Major Transport Routes

For the purpose of viewpoint selection national primary and secondary roads were assessed in detail. Preference was given to viewpoint selection on regional routes in cases where they passed through settlement areas or coincided with scenic routes to increase the number of visual receptors. Transport routes within 5 kilometres of the site were also assessed as part of the route screening analysis.

Table 12.14 Significant transport routes within the study area

Transport Route	Description	Theoretical Visibility
<b>Up to 5 km</b>		
N62		Full
N52		Full
<b>15 to 20 km</b>		
N65		None to Partial

## 12.5.2 Visual Receptor Preliminary Assessment

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

Using the Zone of Theoretical Visibility mapping shown on Figure 12.8 the visual receptors that will have no theoretical visibility are screened out as shown in Table 12.15.

Table 12.15 Visual Receptors Screened Out -No visibility indicated by ZTV map

Visual Receptor Category	County	Visual Receptor with no visibility shown on ZTV
Designated Scenic Routes and Scenic Views	Offaly	V3, V14, V15, V19
	Galway	View 5
Recreational and Tourist Destinations	Offaly	Clonmacnoise
Recreational Routes	Offaly/ Laois	Slieve Bloom Way, Knockbarron Eco Trail
OSi Viewing Points	Offaly	Viewing Point 2
Transport Routes	Tipperary	N65

Directions have been indicated for viewpoints shown on OSi maps and designated scenic views and scenic routes by either written text or on accompanying maps in the respective CDPs. Therefore, the viewing points, protected views and scenic routes within the study area, listed in Table 12.16, that are not directed towards the proposed turbines have been screened out from further assessment.

Table 12.16 Designated Scenic Views, Scenic Routes and Viewing Points Screened Out - Direction of View

Visual Receptor Category	County	Views, Scenic Routes and Viewing Points Screened Out
Designated Scenic Routes and Scenic Views	Offaly	V4, V5, V6, V13, V18
	Galway	View 4
	Tipperary	View 54

For the remaining visual receptors visibility was assessed on site. In the case of the visual receptors shown in Table 12.17 below views towards the turbines were either entirely screened or substantial screened. This along with in some cases distance to the proposed development site precluded these locations being selected as viewpoints.

Table 12.17 Visual Receptors Screened Out -no visibility found on site

Visual Receptor Category	County	Visual Receptor with no significant visibility found on site
Designated Scenic Routes and Scenic Views	Offaly	V2

Visual Receptor Category	County	Visual Receptor with no significant visibility found on site
Settlements	Offaly	Ballycumber, Belmont, Birr, Cloghan, Coolderry, Crinkle, Kilcormac, Kinnitty, Riverstown, Pollagh, Shannonbridge, Shannon Harbour
	Galway	Eyrecourt, Laurencetown
	Tipperary	Lorrha, Rathcabbin
Recreational and Tourist Destinations	Offaly	Birr Castle
Recreational Routes	Offaly	Grand Canal and Way
OSi Viewing Points	Offaly	Viewing Points 1, 3 and 4

*Following the pre-assessment exercise the visual receptors shown in*

Table 12.18 below have been selected as viewpoints due to their significance within the study area and the potential visual effects they may experience due to the proposed development.

*Table 12.18 Visual receptors screened in and selected as viewpoints*

Visual Receptor Category	Description	Viewpoint
Designated Scenic Routes and Scenic Views	V10	VP3
	V11	VP4
	V12	VP2
	V16	VP9
	V17	VP6
	Northern Scenic Amenity Route	VP4, VP16
	Southern Scenic Amenity Route	VP7
Settlements	Banagher	VP13
	Ferbane	VP3
Recreational and Tourist Destinations	Lough Boora Discovery Park	(VP5 and VP4)
Recreational Routes	Lough Boora Walking and Cycling Trails	(VP5 and VP4)
	The Offaly Way	VP4
Transport Routes	N62	VP1, VP10 and P11
	N52	VP8

Furthermore, in addition to the viewpoints listed above, which were selected according to the key visual receptors identified in the visual baseline additional viewpoints were selected within 5 km to assess the visual effects closer to the proposed development from various directions (Viewpoints VP12 and P15). One viewpoint on a section of the R356, where traffic travelling eastwards will have a clear view of part of the proposed development site (Viewpoint VP14) was also selected to provide an assessment of the visual effects within County Galway. Despite the ZTV map showing widespread visibility in County Tipperary, no locations with both clear visibility of the proposed development and significant visual receptors could be found.

12.6

## Cumulative Baseline

In terms of cumulative landscape and visual effects only other wind energy projects have been considered, as only these would be described as very tall vertical elements in the landscape and therefore give rise to significant cumulative effects. Other wind energy developments, within 20km of the proposed development, were identified by searching past planning applications lodged through the various Planning Authorities (Offaly County Council, Tipperary County Council, Galway County Council, Roscommon County Council, Westmeath County Council, Laois County Council 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 study area are listed in Table 12.19 below.

Table 12.19 Existing and Permitted Wind Farms within 20 kilometres

Wind Farm	Status	No of Turbines	Blade Tip Height (m)
<b>Co. Offaly</b>			
Meenwaun	> Existing	4	169
Meenwaun	> Permitted	1	169
Cloghan*	> Permitted/ Proposed	9	150/169
Leabeg	> Existing	2	124
<b>Co. Tipperary</b>			
Carrig	> Existing	3	91
Skehanagh	> Existing	5	91

\* The developer has applied for consent to increase the height of the permitted Cloghan, which have not been constructed to date, from 150 m to 169 m

The proposed Derrinlough turbines will be assessed alongside the above turbines to separately determine the cumulative landscape and visual effects.

## 12.7 Likely or Significant Landscape and Visual Effects

### 12.7.1 ‘Do-Nothing’ Scenario

In the Do-Nothing scenario, the proposed development of a renewable energy project at the proposed development site would be to leave the site as it is, with no changes made to existing land-use practices. If the proposed development were not to proceed, the site would continue to be managed under the requirements of the relevant IPC licence, and existing commercial forestry, telecommunications and wind measurement would continue. The rail lines that supply peat to Derrinlough Briquette Factory would continue to be used until the manufacture of peat briquettes ceases.

When peat extraction activity ceases, a Rehabilitation Plan will be implemented in accordance with the IPC licence requirements, to environmentally stabilise the site through encouragement of re-vegetation of bare peat areas, with targeted active management being used to enhance re-vegetation and the creation of small wetland areas (if required). It is anticipated that the proposed development site would not change significantly from its present state from a landscape and visual perspective.

In implementing the ‘Do-Nothing’ alternative, however, the opportunity to capture a significant part of County Offaly’s renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. The opportunity to generate local employment, a development contribution, rates and investment would also be lost. Also, the proposed amenity access points and associated carpark would not be constructed as part of the rehabilitation and therefore this recreational opportunity would be lost as well as the potential connectivity with Lough Boora Parklands. On the basis of the positive environmental effects arising from the project, the do-nothing scenario was not the chosen option.

### 12.7.2 Construction Phase Effects

It is estimated that the construction phase of the proposed development will last between approximately 24-30 months. This stage of the development will involve temporary construction compounds and the construction of site roads, electricity substation and onsite grid connection as well as the movement of construction and turbine transport vehicles into and out of the site, to allow the construction of the turbines and associated elements.

#### 12.7.2.1 Landscape Effects

It is considered that this is a Short-term, Imperceptible, Negative effect in terms of landscape effects.

#### 12.7.2.2 Visual Effects

During the construction phase, the ancillary project elements will give rise to a Short-term Slight, Negative visual effect.

For more details on the visual effects of the ancillary project elements see ‘Ancillary Project Elements’ in Section 12.7.3 Operational Phase Effects

## 12.7.3 Operational Phase Effects

### 12.7.3.1 Landscape Effects

#### 11.1.1.1.1 Landscape Designations

The only landscape designation brought forward as a landscape receptor likely to experience landscape effects is Lough Boora Parklands Area of High Amenity. Here the ZTV mapping shows widespread full theoretical visibility.

However, the examination of the landscape character of the site showed that this area is being allowed to revegetate. While at present there is sparse and generally low vegetation, in time this will make a greater contribution in screening the proposed turbines.

#### Areas of High Amenity and Landscape Sensitivity

The eastern portion of the site falls within the Lough Boora Parklands High Amenity Area as illustrated on Map 7.17 of the CDP. Areas of High Amenity are classed as ‘High Sensitivity’ areas as shown on Map 7.15 of the CDP. Hence, different sensitivity classifications apply to the two land parcels. The western Clongawny land area is marked as moderate sensitivity and the eastern Drinagh site is marked as a high sensitivity area.

However, during the site visit very little difference in landscape character and elements could be found between these two areas other than revegetation of the cutover bog was at a slightly more progressed in the Drinagh land parcel. Hence the description provided in Table 7.11.1 of the CDP for ‘Moderate Sensitivity’ as ‘*generally ‘open’ in character with intrinsic quality and moderate capacity to absorb new development*’ seems more apt to both areas than having ‘*identified features or areas of natural beauty or interest*’, which is how areas of ‘High Sensitivity’ are described as in the same table. Hence, it could be argued that both areas could be approached in a similar manner and that the Moderate Sensitivity rating may be more appropriate.

This modification to the landscape sensitivity classification of the Drinagh land parcel in relation to wind energy is also supported by:

- Section 2.11.5 *Peatlands* of the CDP, where it is stated that promotion of the existing Lough Boora facilities ‘*and their expansion and also that any development of wind energy on cutaway bog should provide increased access and education*’ will be an objective.
- Various areas of the ‘Lough Boora Parklands’ including ‘*Turraun Wetlands, Finnamore Lakes Area and Loch Clochan Wetlands*’ are singled out for specific mention in Table 7.11.4 under ‘C’ Wetlands’, however, the parts of the proposed development site are not referenced.
- In Section 3.5 of the CDP it is stated that ‘*the characteristics of cutaway bog appear to be particularly suitable for wind development*’, as they are ‘*generally large, uninterrupted by hedgerows, streams and natural features*’. Furthermore, they are ‘*already connected to each other via corridors i.e. bog railway routes, which will allow for transmission infrastructure and roadways to be built between sites, avoiding impacts on the public road in terms of traffic or visual impact*’. Their suitability is further underlined by their being ‘*the least densely populated areas of the county*’.
- Section 2.3.2 *Peatlands* of the CDP states that peatlands ‘*could potentially accommodate large scale energy production in the form of wind farms*’ and adds further that ‘*the Council will encourage the sustainable and appropriate use of the peatlands for employment generating uses when all other planning and environmental considerations are met*’.

In the description of Moderate Sensitivity in Table 7.11.3 of the CDP it is conceded that ‘*some of these cutaway bogs may be appropriate for other sensitively designed and located developments including renewable energy (wind farms, biomass crops) and/or industrial use.*’

Further support for wind energy development in the proposed development site can be found in the *Wind Energy Strategy for County Offaly Methodology Statement (WESO)*

In Figure 3 of the WESO all the areas of the proposed development site are marked as ‘Cutaway Peat’, which is described in the document as ‘*areas generally having visually degraded landscape character, very low levels of residential settlement and large landholdings which give them a high potential for the development of windfarms – while avoiding conflicts with neighbours or scenery*’

In Table 1 the ‘*Area South of Cloghan*’ (i.e. the Clongawny land area) is listed as one of the 12 main areas having wind energy development potential and is in fact deemed suitable for ‘*large scale wind farms*’ due to its having ‘*low levels of adjacent dwellings, reasonable access to grid, proximity to access and areas of cut-over bog.*’

Map 3.2 showing ‘*Wind Energy Development Areas*’ in the CDP is arrived at through ‘sieve mapping’ analysis shown in the WESO. In this map the only significant high amenity area included is the *Wind Energy Development Areas*’ is the Drinagh land parcel other than some small areas of eskers and a section of the Grand Canal, as seen in Figure 12.4, where the ‘*Wind Energy Development Areas*’ have been overlaid onto the Co. Offaly designated high amenity areas. This again suggests that the landscape value of this part of the Lough Boora Wetlands may not be considered as highly as other high amenity areas.

### 1.1.1.1.3 Landscape Character of the Proposed Development Site

The landscape character of the proposed development site will undergo a change in character by the introduction of vertical structures in a flat landscape. There will also be a minor localised change around the ancillary project infrastructure.

### 1.1.1.1.4 Landscape Character Areas

An assessment of the effects on landscape character was undertaken for the four LCAs within the study area that were identified as having significant visibility in the Landscape Receptor Preliminary Assessment above and listed in Table 12.6 of the same section. The individual assessments for each LCA are summarised in Table 12.20 below and included in detail in Appendix 12.2 Landscape Character Assessment Tables.

Table 12.20 Landscape character assessment summary

Landscape Character Area (LCA)	County	LCA Sensitivity to Wind Farm Development	Magnitude of Change	Significance of Landscape Character Effect
Central Wetlands	Offaly	Moderate	Moderate	Moderate
North-western Lowland Farmland and Marginal Peatland	Offaly	Low	Slight	Not Significant
Slieve Bloom Mountains Upland Area	Offaly	Very High	Negligible	Moderate
East Central Galway	Galway	Low	Negligible	Imperceptible

The greatest landscape effects (“Moderate”) will be experienced in the provisional LCA for Offaly *Central Wetlands*, where the turbines will be located. However, these potential effects are mitigated by partial, intermittent and generally reduced visibility of the project due to the design of the project and the characteristics of the site and surrounds as described in the LCA assessment included in Appendix 12.2.

Moderate landscape effects are predicted to occur in the Co. Offaly Provisional LCA *Slieve Bloom Mountains Upland Area*. However, this result is arrived at due to the sensitivity of the landscape receptor, as shown in Table 12.20 above, and not due to changes anticipated to the landscape character.

In the other two LCAs, i.e. North-western Lowland Farmland and Marginal Peatland and East Central Galway, the landscape effects are Not Significant and Imperceptible, respectively.

### 12.7.3.2 Cumulative Landscape Effects

After identifying the cumulative baseline and cumulative status for each LCA it was assessed whether the additional proposed turbines would change the status of the individual LCAs. Although, it was found that the proposed turbines would add to the cumulative landscape status in all LCAs, only in the LCA within which the proposed turbines will be located will the cumulative landscape status change.

Therefore, the cumulative landscape effects are considered Low in three of the LCAs brought forward for assessment and Moderate in the provisional Offaly LCA Central Wetlands in which the proposed turbines are to be located.

### 12.7.3.3 Visual Effects

#### 12.7.3.3.1 Summary of Viewpoint Assessment

An assessment of the visual effects of the proposed turbines was undertaken from the 16 viewpoint locations identified in Section 12.5.2 above using the assessment methodology described in Appendix 12.1. The locations of these viewpoints are shown in Figure 12.9, below. The individual assessments from the 17 viewpoints are presented in Appendix 12.3 and summarised in Table 12.21 below. Appendix 12.3 and Table 12.21 should be read in conjunction with the photomontage booklet forming Volume 2 of the EIAR.

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. The various locations where very limited or no visibility was observed are shown on Figure 12.9 for information purposes.

In general, flat midland wind farm sites and their surrounds tend to be capable of absorbing suitably designed wind farm projects of scale, due to some key reasons which are outlined below and will be evident in the photomontages:

1. ***The Flat Nature of the Site & its Surrounds***

*The level terrain results in an even overall height of all the wind turbines, this means that visual confusion caused by turbines at various heights does not arise. For Derrinlough, the visual receptors in the surrounding landscape are also at or slightly above the base level of the proposed turbines i.e. the turbines are not situated on elevated lands and so the potential for clear and open views of the project from*

*receptors at lower elevations does not arise. This topographic feature of the Derrinlough site and surrounds mitigates the potential for overbearing or domineering effects provided sufficient setback from receptors is designed into the project. It also means that separation distances between receptors and turbines becomes important as the turbines appear smaller in scale quickly when viewed in this planar view.*

**2. Presence of Mature Hedgerows, Mature Tree Lines and Commercial Forestry**

*The reduced potential for clear and open views and the associated potential domineering effects described in Point 1 above is subsequently compounded by the presence of mature hedgerows, mature tree lines and stands of commercial forestry which are a feature of this site and surrounds. This screening, located between visual receptors and the proposed turbines has the effect of either removing views altogether, obscuring large numbers of turbines (including the existing & permitted turbines) or making those views of the turbines intermittent in nature. The effect of this screening is amplified for turbines in flat landscapes in terms of impeding views of the turbines. The ZTV does not take into account this screening and hence ZTV mapping can only be considered accurate where no visibility is indicated. In areas where theoretical visibility is indicated this is very often not borne out by actual visibility on the ground, in particular for sites of flat topography such as Derrinlough.*

**3. The Derrinlough Sites Wide Expanse**

*The Derrinlough lands are vast in scale. The traditional pattern of rural development comprising scattered one-off housing and ribbon development has not encroached onto the site. The majority of the turbines are therefore at significant distance from visual or residential receptors. The centre of the bogs are being developed for wind energy and larger turbines require greater separation distances from each other and so fewer turbines are being brought forward for consent and as part of the design. The effect of this is reduced spatial extent and cluttering of the view. For example, receptors to the south west of the Drinagh cluster (See Photomontage P23) will only ever perceive 4 to 5 No. turbines. The remaining turbines (including the existing and permitted) will not form part of their perception of the wind farm as these turbines are many kilometres away, at the same ground level as the receptor and are screened by multiple layers of vegetative screening.*

Combined, these factors mean that significant visibility of the proposed Derrinlough turbines is limited at relatively short distances away from the project. This has meant that the majority of photomontages have been taken from within the 5km buffer area.

The visual effect of the proposed wind turbines 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 (2013) guidelines. This, in conjunction with a detailed review of the photomontages themselves and the ZTV maps, informed the visual effects assessment.

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 turbines however, i.e. 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.



*Figure 12.9 Viewpoint Locations*

Table 12.21 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 N62 national road in the townland of Stonestown.	E 207,683 N 217,765	2.17 km NW	Low	Moderate	Slight
2	View from the No. L-07009 local road in the townland of Stonestown, designated as County Offaly scenic view V12.	E 209,529 N 218,300	1.27 km NW	High	Moderate	Moderate
3	View from Chapel Lane on the outskirts of Ferbane Town in the townland of Ballyclare, designated as County Offaly scenic view V10.	E 209,889 N 224,339	7.28 km N	Medium	Moderate	Slight
4	View from the R357 regional road in the townland of Lea Beg, designated as County Offaly scenic view V16 and on Northern Scenic Amenity Route (R357 from Blueball to Shannonbridge).	E 217,829 N 220,500	8.7 km NE	Medium	No Effect	No Effect
5	View from the R437 in the townland of Broughal, on the western edge of Lough Boora Parklands.	E 214,590 N 216,796	4.5 km E	Low	Slight	Not significant
6	View from the No. L-06034 local road in the townland of Kilgolan Upper, designated as County Offaly scenic view V17.	E 220,753 N 212,875	10.0 km E	High	Slight	Slight
7	View from the R421 regional road in the townland of Coolacrease, on County Offaly Southern Scenic Amenity Route (R440 and R421 Birr to Kinitty and Ballard to Kinitty).	E 223,504 N 209,335	13.57 km SE	High	Slight	Slight
8	View from the N52 national road in the townland of Glenamony Glebe.	E 212,198 N 212,123	2.6 km SE	Low	Slight	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
9	View from the L-04025 local road in the townland of Cumber Lower, designated as County Offaly scenic view V16.	E 218,120 N 203,371	14.53 km SE	<b>High</b>	<b>Slight</b>	<b>Slight</b>
10	View from the N62 national road in the townland of Galros East.	E 207,688 N 210,542	2.35 km S	<b>Low</b>	<b>Slight</b>	<b>Not Significant</b>
11 East	View from the N62 national road in the townland of Derrinlough.	E 208,152 N 214,386	1.5 km W	<b>Medium</b>	<b>Moderate</b>	<b>Moderate</b>
11 West	View from the N62 national road in the townland of Derrinlough.	E 208,152 N 214,386	0.96 km SE	<b>Medium</b>	<b>Substantial</b>	<b>Moderate</b>
12	View from the R438 regional road in the townland of Glaster.	E 202,080 N 210,133	4.95 km SW	<b>Low</b>	<b>Substantial</b>	<b>Moderate</b>
13	View from the junction of Birr Road, Cluain Rynagh and the L7016 local road adjacent to the Banagher church of Ireland in the townland of Feeghs in Banagher Town.	E 201,396 N 214,812	3.75 km W	<b>High</b>	<b>Negligible</b>	<b>Slight</b>
14	View from the R356 regional road in the townland of Gortaloughane.	194,058 217,315	11.4 km W	<b>Low</b>	<b>Slight</b>	<b>Not Significant</b>
15	View from the L3010 local road in the townland of Coolfin.	E 203,202 N 215,944	2.4 km NW	<b>Medium</b>	<b>Slight</b>	<b>Slight</b>
16	View from the R357 regional road in the townland of Lecarrow.	E 199,848 N 224,017	10.4 km NW	<b>Medium</b>	<b>Negligible</b>	<b>Not Significant</b>

The assessment of visual effects determined the residual significance of the visual effects to range from ‘imperceptible’ to ‘moderate’, with the number at findings at each level of significance listed in Table 12.22, below. It should be noted that in the case of Viewpoint 11 the two residual visual effect assessments for east and west have been counted as one value here.

Table 12.22 Summary of Viewpoint Impact Assessment Results

Significance of Residual Visual Effect	Description	No. of Viewpoints
Profound	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment	0
Very significant	An effect which, by its character, magnitude, duration or intensity significantly 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	0
Moderate	An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends	3
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.	5
Imperceptible	An effect capable of measurement but without significant consequences	0

The significance of the residual visual effect was not considered to be “Profound”, “Very Significant” or “Significant” at any of the 16 viewpoint locations. A residual visual effect of “Moderate” was deemed to arise at three of the 16 viewpoint locations. All other viewpoints were assessed as resulting in Slight (7) and Not Significant (5) residual visual effects. The proposed turbines will not be visible from Viewpoint 12, hence ‘No Effect’ was recorded for this location.

The viewpoint assessment results will be discussed in more detail in the following sections.

### 12.7.3.3.2 Assessments of other alternative turbine designs

This LVIA also assessed whether different turbine designs may give rise to visual effects. For the purpose, Viewpoint 12 was chosen as a representative viewpoint and an additional photomontage was prepared using different turbine dimensions, e.g. lower hub height with longer rotor diameter. This additional photomontage is shown at the end of the photomontage booklet. The two different turbine designs shown from this viewpoint were compared to see if a different turbine design would change the assessment of visual effects of the proposed development.

The alternative photomontage prepared for Viewpoint 12 shows that the using an alternate turbine design would have an imperceptible visual impact.

### 12.7.3.3.3 **Visual Effects in the overall study area**

Generally overall visual effects are strongly guided by ZTV mapping (based purely on topography, in this case 10-meter contour data) as an indication of areas that will have no visibility of proposed turbines and areas that will have theoretical visibility. The level of certainty for areas where no visibility is indicated by ZTV is very high. On the contrary, in areas where the ZTV mapping shows theoretical visibility this will not have taken account of local variations in ground levels not represented by the 10 metre contour data and more importantly vertical objects such as vegetation, buildings and other structures that will block views of the proposed turbines.

The ZTV map for Derrinlough shows widespread theoretical visibility being greatest nearest to the proposed development with pockets of no visibility increasing in size and frequency as distance from the proposed turbines increases. This is to be expected in a LVIA study area with very little variation in levels and few upland areas. However, due the nature of the flat terrain elements in the landscape such as hedgerows and treelines will be more effective in screening even if they are positioned further away from the viewer.

One example is the southern County Offaly Scenic Route (R440 and R421 Birr to Kinitty and Ballard to Kinitty) where the ZTV maps shows full theoretical visibility for approximately half of the stretch between Birr and Kinitty and full theoretical visibility throughout nearly all of the remaining sections of the scenic route within the study area. However, when surveying the route during the site visit it was found that visibility towards the proposed development was blocked along the entirety of the route by intervening vegetation and local topography, save for an elevated stretch of the road north-west of Cadamstown, where Viewpoint 7 was taken from.

### 12.7.3.3.4 **Visual effects within five kilometres of the 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 developed termed Route Screening Analysis, and this was undertaken from all roads within a five-kilometre radius of the proposed turbines. The full methodology is outlined in Appendix 12.1 and the categories recorded were as follows:

- Little/no screening – mainly open and with some very light vegetation (see Plate 12.7)
- Intermittent/Partial Screening – light deciduous roadside vegetation and vegetation with short gaps which would allow intermittent or partial views (see Plate 12.8)
- Dense Screening – vegetation which is dense enough to block views e.g. coniferous forestry (see Plate 12.9)



Plate 12.7 Example of 'little/no screening' along the N62 between turbine clusters



Plate 12.8 Example of "intermittent/partial screening" along the N62 between both turbine clusters



*Plate 12.9 Example of Route Screening category – dense screening; marked as point 316 in Figure 12.10 on an unnamed local road south-of the site*

Figure 12.10 below outlines the route screening within a five-kilometre radius of the proposed turbines. This figure indicates that the majority of the roads within 5 kilometres of the site have intermittent/partial screening. Therefore, the full theoretical visibility indicated by the ZTV for these roads will be substantially reduced by screening. The presence of roadside screening is particularly important in contexts such as the proposed development site, where the site is at the same elevation or slightly lower to the surrounding roads.



*Figure 12.10 Route Screening Analysis*

Roads around the proposed development site within 1 kilometre are mainly local roads. Figure 12.10 shows that the dominant screening type is ‘intermittent/partial screening’ with some ‘little/no screening’ within 1 kilometre of the optimised turbines. The R438, passing to the west of the site, has ‘intermittent/partial screening’ towards the site. The N62, passing between the two proposed turbine clusters, is a mosaic of ‘little/no screening’ and ‘intermittent/partial screening’ as shown in Plate 12.7 and Plate 12.8 above. There are also stretches of this national road with open views across harvested peatland towards the site. Offaly protected view V12 is included within this area with ‘intermittent/partial screening’ effects from hedgerows obscuring views the site shown in Plate 12.10.



*Plate 12.10 Example of ‘intermittent/partial screening’ along the V12 scenic view route looking eastwards*

Within 1-3 kilometres of the site, ‘intermittent/partial screening’ remains the dominant category alongside some areas of ‘little/no screening’. Roads through the village of Cloghan to the north are included in this area and the ‘intermittent/partial screening’ of the village centre is shown in Plate 12.11. The part of the N52 which passes within 3 km of the proposed turbines to the southeast is a mixture of ‘little/no screening’ and ‘intermittent/partial screening’ as shown in Plate 12.12. All the regional roads are predominantly covered by ‘intermittent/partial screening’ with short stretches of ‘little/no screening’.



Plate 12.11 Example of 'intermittent/partial screening' within the village of Cloghan

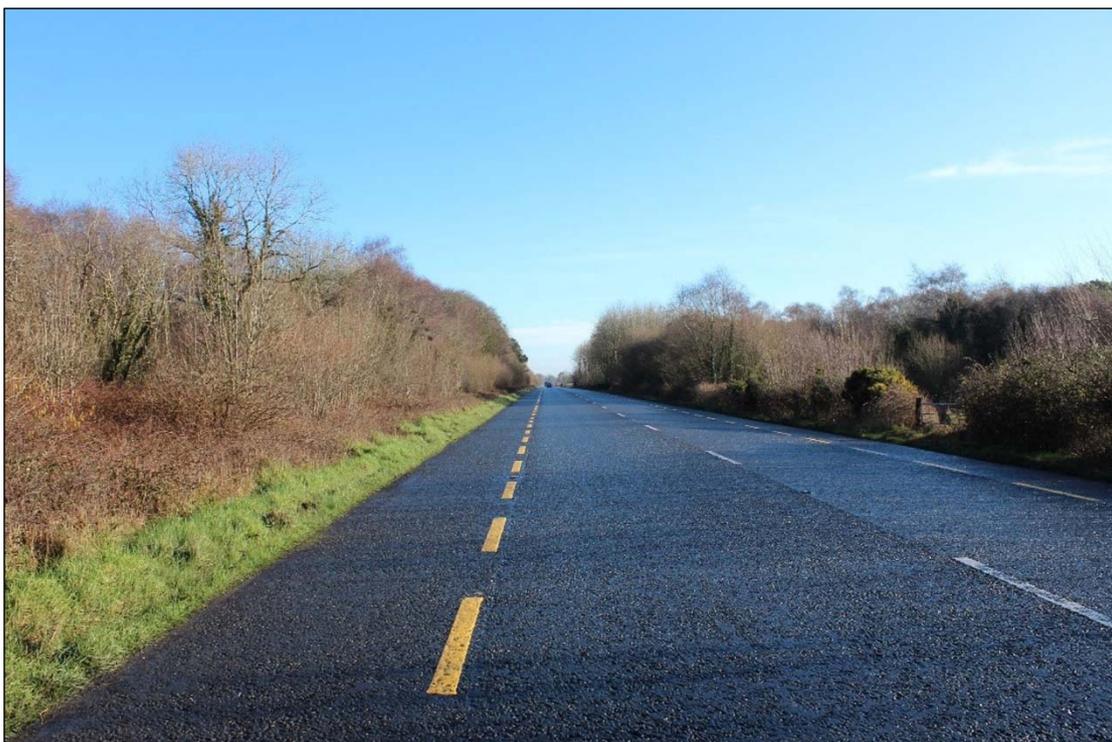


Plate 12.12 The N52 with 'intermittent/partial screening' along its length linking Kilcormac and Birr

Between 3 and 5 kilometres, 'intermittent/partial screening' remains the dominant category. Within this area is the town of Banagher and Shannon Harbour Village. The R356 and R439 regional roads entering and leaving the town of Banagher as well as its outskirts have 'intermittent/partial screening' with the centre of the village having a section of 'dense screening'. Plate 12.13 illustrates clearly the effect of 'dense screening' by buildings in Banagher Town and Plate 12.14 illustrates the 'intermittent/partial screening' of the outskirts. The local road entering and leaving the village of

Shannon Harbour mostly consists of ‘intermittent/partial screening’ as seen in Plate 12.15. The N52, and N62 national roads within this area are covered by the same level of screening as described above.



Plate 12.13 Example of dense screening within Banagher Town



Plate 12.14 Example of ‘intermittent/partial screening’ on the outskirts of Banagher Town



*Plate 12.15 Example of ‘intermittent/partial screening’ on roads into Shannon Harbour*

County Offaly scenic view V11, which is also part of the Northern Amenity Route is included within this area with ‘intermittent/partial screening’ effects from hedgerows obscuring views the site shown in Plate 12.16 below.



*Plate 12.16 Representative example of ‘intermittent/partial screening’ along the Northern Amenity Route and V11 scenic view route*

### Viewpoints (within 5km of the site)

Ten of the selected viewpoints fall within five kilometres of the proposed turbines. Of these, Viewpoint P32/38 is located on Co. Offaly designated protected view V12, Viewpoints 33/35 and 28 are in Cloghan and Banagher and Viewpoints 16, 40, 20 and 23 are located on the N62 and N52. Hence, these viewpoints will be discussed under the respective parts of Section 12.7.3.3.5 *Visual Effects on Specific Visual Receptors*.

The three remaining viewpoints, P14, P4 and P39, were assigned residual visual effects of Moderate, Slight and Not Significant, respectively.

### Ancillary Project Elements

For the purposes of this LVIA, a number of individual elements of the proposed development, ancillary to the proposed wind turbines, have been grouped together for the assessment of effects, given the similar nature of the works required. These operational project elements include the proposed roads and turbine hardstand areas, anemometry masts and the electricity substation compound (and ancillary elements thereto) may all give rise to potentially similar landscape and visual effects.

Due to the topography of the proposed development site and surrounding areas the lower ancillary project elements will be visible in their immediate surroundings, hence, any visual effects will be localised and predominantly confined to within the proposed development site.

Visual effects arising from the proposed ancillary project elements will be slight, localised and long-term where seen, but will remain largely unseen from within and outside the site.

### Electricity Substation

The electricity substation is to be located in the northern most corner of the eastern Drinagh. Plate 12.17 below shows while there is currently very little vegetation in the immediate environs of the proposed substation there are hedgerows, scrub and treelines on the site boundary that will partially or fully screen the substation from local visual receptors. Hence, the visual impact of the proposed electricity substation will be very localised, long-term, but only slight in significance.



Plate 12.17 Image taken from approximate position of proposed electricity substation looking northwards to the nearest road

### Road Construction and Turbine Hardstands

Every use will be made of the existing machine access tracks on site, however approximately 29 kilometres of new internal roads will need to be constructed. Some vegetation clearance will occur as a result of this construction. Details of the required works are contained in Chapter 4. The visual impact of these hard surfaces will be localised. The visual effect of this road construction is considered long-term, localised, but only slight in significance.

### Anemometry Masts

The two proposed permanent anemometry mast will be a slender structure up to 120 metres in height, and in itself will not be imposing structures in terms of visual impact. The landscape impact will primarily constitute vegetation clearance around the base of the mast. The visual effect of the proposed anemometry masts is considered to be long term but Not Significant, in that it will be significantly less visible than any turbine given its slender lattice form and will fade from view at a distance of anything more than a few kilometres.

## 12.7.3.3.5 Visual Effects on Specific Visual Receptors

### Designated Scenic Routes and Scenic Views

The Offaly CDP designates protected views along stretches of road in one or consecutive townlands. Hence, views are not limited to one location, but stretch over up to several kilometres of road. Of the 15 County Offaly protected views identified in the study area four were screened out as the ZTV mapping showed that intervening landform will screen views. Another five were excluded as the focus of the protected view was directed away from the proposed development and in the case of one view, no views towards the proposed turbines could be established during the site visit due to the presence of extensive adjacent forestry. The remaining five protected views, V10, V11, V12, V16 and V17, were brought forward for viewpoint assessment. Offaly CDP also has two scenic amenity routes, which were also assessed for visual effects.

County Offaly protected view V10 is along a stretch of road from Ferbane village westwards. The ribbon development alongside hedgerows and treelines mainly precluded views to the proposed development. Actual visibility could only be found from elevated parts of this protected view such as selected Viewpoint 4. In this view, the stated main focus of the view '*southwards towards Slieve Bloom Mountains*' are located to the left (barely visible in the 120-angle view), away from the proposed turbines. Due to screening by intervening vegetation and Cloghan Hill the residual visual effect was considered Slight.

Protected view V11 along the R357 and covering a stretch of road spanning five townlands, also included the northern Co. Offaly Amenity Route, is generally bordered by consistent roadside vegetation as shown in the Route Screening Analysis for the western part of V11. A viewpoint (Viewpoint 4) was selected in the eastern part of this view with an apparently open view towards the turbines, but subsequent preparation of the photomontage showed that all proposed turbines will be screened from this viewpoint.

V12 is approximately 1.27 km from the nearest turbine and therefore, the closest designated view to the proposed development. The Route Screening Analysis shows that roadside vegetation is intermittent along the length of protected view V12 and hence views towards the turbines will be either partial or only along short sections of the road. The viewpoint selected was along the section of the road with the highest elevation and most open views over the proposed development thus representing the 'worst case scenario' with a residual visual effect of 'Moderate'.

V16 in the townland of Lower Cumber is along an infrequently travelled local road with views 'westward over farmland' while the proposed turbines are at a north-westerly direction from this location. Distance in particular was a mitigating factor, resulting in a residual visual effect of 'Slight' for selected Viewpoint 9.

In the case of V17 the view is described as being in ‘Road No. L-06034 in the townlands of Knockhill and Drinagh’. This area falls into an area shown as having no visibility on the ZTV mapping, hence the viewpoint was chosen as close to the designated view as possible, but not actually at the protected view. Therefore, it could be concluded that V17 will not be impacted by the proposed development. Furthermore, due to a variety of mitigating factors nearby Viewpoint 6 was found to have a ‘Slight’ residual visual effect.

In addition to Viewpoint 4, discussed above for V11, another viewpoint (VP16) was selected to assess visual effects for the northern Co. Offaly Scenic Amenity Route. Here, residual visual effects were deemed ‘Not significant’ as most of the proposed wind farm will be screened by intervening vegetation.

As discussed in Section 12.7.3.3 direct views towards the proposed development on the County Offaly Southern Scenic Amenity Route (R440 and R421 Birr to Kinitty and Ballard to Kinitty) were difficult to find during the site visit due screening by roadside vegetation. Plate 12.18 shows a rare open view in the direction of the proposed turbines taken along this road. However, it was found that mature trees at the end of the fields would screen most if not all of the proposed wind farm. The only location where a clear view of the proposed turbines could be confirmed was at Viewpoint 7, on the most elevated section of this Scenic Amenity Route. Here the residual visual effect is considered ‘Slight’.



*Plate 12.18 View from the Southern Amenity Route towards the proposed development site*

## Settlements

Of the 18 settlements identified in the study area, 15 were screened out in the ‘Visual Receptor Preliminary Assessment’, as no visibility of the proposed development could be established on site. Hence, viewpoints were selected for the remaining three settlements Cloghan, Banagher and Ferbane.

A location in the southern part of Cloghan was considered for inclusion in the viewpoint assessment, the photomontage prepared is shown in Plate 12.19 below. . The image was taken on the N62 between the Breachach housing estate and adjacent sports grounds. Due to the limited visibility of the proposed turbines it was not included as a viewpoint in the accompanying booklet for the overall assessment. Nonetheless, it, along with the Route Screening Analysis illustrates the minor visual effects that will be experienced in some of the southern parts of Cloghan.

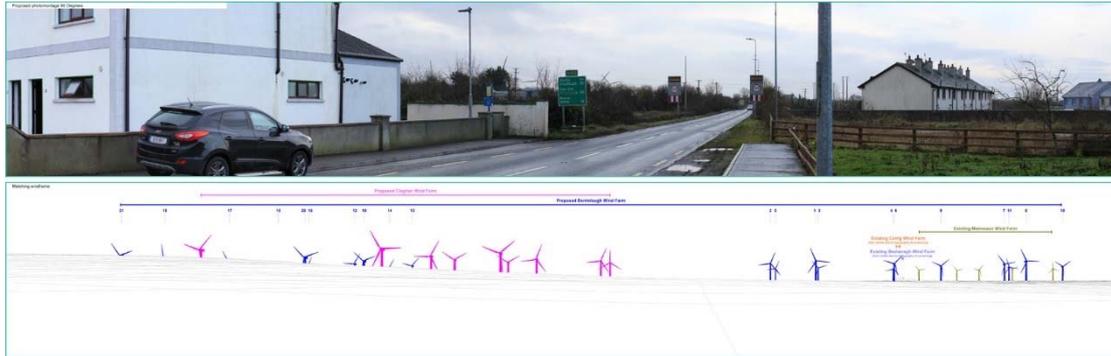


Plate 12.19 Photomontage showing proposed view of Proposed turbines taken in southern part of Cloghan

In Banagher ZTV mapping shows mainly partial visibility with pockets of no visibility to the north-east and south. Furthermore, local buildings and vegetation screens views in nearly all areas as shown in the Route Screening Analysis. Only in the highest most southern part of Banagher could visibility be established. The viewpoint (VP13) selected in this area is adjacent to the Banagher Church of Ireland and looks down a residential road. Buildings and vegetation along this road screen most of the development. The residual visual effect was deemed ‘Slight’.

The ZTV for Ferbane and its surrounds generally shows full theoretical visibility for the village with areas of no or partial visibility along the River Brosna and north of the L-03004. However, on the ground effective screening by buildings and vegetation as well as influence of individual hills, such as Cloghan Hill, obstructs views of the site. Viewpoint 3, taken from Chapel Lane, in an elevated position relative to other areas of Ferbane, presents perhaps the most open view of the site from this general area.

Birr is the largest settlement in the LVIA study area, hence particular attention was given to establishing whether residents would have views of the proposed turbines. No views of the site could be found within the town of Birr. The N52 and R439 in the northern parts of Birr Town leading towards the site were also surveyed and as can be seen in Plate 12.20 and Plate 12.21 extensive screening will preclude views towards the proposed development in both cases.



Plate 12.20 View towards the proposed turbines taken from adjacent the N52 on the northern outskirts of Birr Town



Plate 12.21 View towards the proposed turbines taken from the R439 adjacent to St. Brendan's Community School in the northern outskirts of Birr Town

### Recreational Routes and Destinations

Viewpoint 4 was selected to assess, amongst other visual receptors, the visual effects on the Offaly Way. While the ZTV mapping had shown predominantly full theoretical visibility for this recreation route, it was found that screening by roadside vegetation blocked views for a large part of the route. Viewpoint 4 is a relatively open view towards the proposed turbines. However, after preparation of the photomontage it was shown that there would be no view from this location.

For the assessment of Lough Boora Parklands and associated recreation routes, in addition to the nearby Viewpoint 4, Viewpoint 5 was selected. This viewpoint is approximately halfway between the Lough Boora Discovery Park entrance and the nearest turbine. Here, the residual visual effect was found to be Not Significant, due to intervening vegetative screening particularly of the furthest, western turbine group.

### Transport Routes

As the N62 runs between the two turbine clusters, three viewpoints were selected along this national road. One each approaching the proposed wind development from the north (Viewpoint 1) and one from the south (Viewpoint 10) as well as one (Viewpoint 11, with two photomontages one to the western and another to the eastern turbines) in between the two groups of turbines. The residual visual effects were Slight from Viewpoint 1, Not Significant from Viewpoint 10 and Moderate from Viewpoint 11, partially due to lower visual receptor sensitivity and mitigation factors such as significant screening by roadside vegetation reducing the residual visual effect.

One viewpoint (Viewpoint 8) was selected along the closest section of the N52. Here, after taking mitigation factors into consideration the residual visual effect was deemed Not Significant.

### 1.1.1.2 Cumulative Visual Effects

The proposed turbines alongside the existing and permitted turbines Meenwaun and Cloghan turbines are very similar in terms of scale and design. Furthermore, due to their proximity, spacing and layout they visually read as one wind farm or in some cases as two equal clusters of wind turbines with the individual wind energy projects indistinguishable. This is in keeping with the *Draft Revised Wind Energy Development Guidelines December 2019*, where in Section 6.6 *Cumulative Effect* ‘similarity in the siting and design approach is preferred where a number of wind energy developments are located in the same landscape character area’ and ‘different wind energy developments can appear as a single collective unit if located near each other’. The guidelines propose avoiding visual stacking, where turbines are seen ‘one behind another, when viewed from highly sensitive key viewpoints’. The selected 16 Viewpoints show that through careful design this visual effect has predominantly been avoided.

With the above in mind the proposed wind turbines have been assessed alongside the adjacent existing and permitted turbines as ‘one collective unit’. Furthermore, the proposed amendments to Cloghan Wind Farm have been considered and if permitted it is not considered that the cumulative impact of Derrinlough together with the amended Cloghan WF result in any change to the cumulative impact of Derrinlough with the existing consented developments outlined above.

A comparative ZTV (Figure 12.11 below) shows that the cumulative visibility over that of the existing and permitted turbines will only increase in a small number of tiny pockets due to the addition of the proposed Derrinlough turbines, and therefore it is considered that the proposed turbines will not have a significant impact on the extent of cumulative visibility within the overall study area.

### 12.7.4 Decommissioning Phase Effects

The landscape and visual effects during decommissioning are anticipated to be the same as during the construction phase.

*Figure 12.11 Comparative ZTV*