

## 12 LANDSCAPE AND VISUAL ASSESSMENT

### 12.1 INTRODUCTION

The Landscape and Visual Impact Assessment (LVIA) was prepared by Cunnane Stratton Reynolds.

The assessment was informed by a desktop study of the project and a survey of the proposed development site and receiving environment in July and September 2018, as well as February and November 2019. The assessment is in accordance with the methodology prescribed in the Guidelines for Landscape and Visual Impact Assessment, 3rd edition, 2013 (GLVIA) published by the UK Landscape Institute and the Institute for Environmental Management and Assessment. The assessment also refers to specialised guidance relating to Wind Farms including the Department of the Environment Wind Energy Guidelines (2006) and Public Consultation Draft (2019) and Scottish Natural Heritage Visual Representation of Wind Farms (February 2017).

This report identifies and discusses the landscape and visual constraints, as well as likely landscape and visual effects in relation to the Carrownagowan Wind Farm project in east Co. Clare. (Please refer to section 2.3 of chapter 2 for a full description of the project and the proposed development).

#### 12.1.1 Scope of assessment

The assessment of Landscape and Visual Effects assesses the effects of the development on the landscape as a resource and on the fabric and character of the landscape. Assessment of visual effects relates to the change in views and visual amenity experienced by groups of people. The assessment includes the review of the proposed development, desktop study, and several site visits both to the site and the wider landscape.

A number of tools are used to assist in the assessment of visual effects. These include Zone of Theoretical Visibility (ZTV) Maps, which are maps generated to show the areas from which the proposed wind farm will be potentially or theoretically visible, and how many turbines will be theoretically visible. Further limitations of ZTVs are discussed in Section 12.1.3.

Photomontages are also used as a tool to assist in the assessment of visual effects. They are used in the development of the wind farm design; and can help to illustrate the location and nature of a proposed wind farm. Further details on the photomontages are contained in Section 12.1.3 as well as the assessment in 12.3. The Photomontage Booklet is Volume IV.

#### Study Area

The Zone of Theoretical Visibility (ZTV) maps extend to a radius of 30 kilometres, so the extent over which the turbines are theoretically visible are represented for this distance on these maps. However the assessment of landscape and visual effects is concentrated on an area approximately 25 kilometres radius from the proposed turbines, as shown in Figure 12.1. The Wind Energy Development Guidelines (2006) and the Draft Wind Energy Guidelines (2019) both state that for turbines of over 100m in height, a radius of 20km for the ZTV is adequate, while in areas where landscapes of national or international renown are within 25km of a proposed wind energy development, 25km is recommended. The ZTV extends to 30km, this in excess of this recommendation. The study of the landscape extends to 25km, as beyond this distance, the visual and landscape effects are not likely to give result in significant effects.

### 12.1.2 Methodology

Ireland is a signatory to the European Landscape Convention (ELC). The ELC defines landscape as ‘an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors’. This definition is important in that it expands beyond the idea that landscape is only a matter of aesthetics and visual amenity. It encourages a focus on landscape as a resource in its own right - a shared resource providing a complex range of cultural, environmental and economic benefits to individuals and society.

*The Guidelines for Landscape and Visual Impact Assessment (GLVIA)* notes that as a cultural resource, the landscape functions as the setting for our day-to-day lives, also providing opportunities for recreation and aesthetic enjoyment and inspiration. It contributes to the sense of place experienced by individuals and communities and provides a link to the past as a record of historic socio-economic and environmental conditions. As an environmental resource, the landscape provides habitat for fauna and flora. It receives, stores, conveys and cleans water, and vegetation in the landscape stores carbon and produces oxygen. As an economic resource, the landscape provides the raw materials and space for the production of food, materials (e.g. timber, aggregates) and energy (e.g. carbon-based fuels, wind, solar), living space and for recreation and tourism activities.

### Forces for Landscape Change

The GLVIA also notes that landscape is not unchanging. Many different pressures have progressively altered familiar landscapes over time and will continue to do so in the future, creating new landscapes. For example, within the receiving environment, the environs of the proposed development have altered over the last thousand years, from wilderness to agriculture, forestry and settlement.

Many of the drivers for change arise from the requirement for development to meet the needs of a growing population and economy. The concept of sustainable development recognises that change must and will occur to meet the needs of the present, but that it should not compromise the ability of future generations to meet their needs. This involves finding an appropriate balance between economic, social and environmental forces and values.

The reversibility of change is an important consideration. If change must occur to meet a current need, can it be reversed to return the resource (in this case, the landscape) to its previous state to allow for development or management for future needs. It should be noted that the proposed development can be considered reversible as the removal of turbines can reverse the main landscape and visual effects.

Climate change is one of the major factors likely to bring about future change in the landscape, and it is accepted to be the most serious long-term threat to the natural environment, as well as economic activity (particularly primary production) and society. The need for climate change mitigation and adaptation, which includes the management of water and more extreme weather and rainfall patterns, is part of this.

### Guidance

Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people’s views and visual amenity.

The methodology for assessment of the landscape and visual effects is informed by the following key guidance documents, namely:

- *Guidelines for Landscape and Visual Impact Assessment*, 3rd Edition 2013, published by the UK Landscape Institute and the Institute of Environmental Management and Assessment (hereafter referred to as the GLVIA).
- The EPA Draft Guidelines for Information to be Contained in Environmental Impact Assessment Reports Draft (2017)
- *Wind Energy Development Guidelines* (Department of the Environment, Heritage and Local Government 2006)
- *Wind Energy Development Guidelines Public Consultation Draft* (Department of Housing, Planning and Local Government 2019)
- *Guide to Visual Representation of Wind Farms* (Scottish Natural Heritage, 2017)
- County Development Plans

References are also made to the '*Landscape and Landscape Assessment – Consultation Draft of Guidelines for Planning Authorities*' document, published in 2000 by the Department of Environment, Heritage and Local Government.

### **Use of the Term 'Effect' vs 'Impact'**

The GLVIA advises that the terms 'impact' and 'effect' should be clearly distinguished and consistently used in the preparation of an LVIA.

'*Impact*' is defined as the action being taken. In the case of the proposed works, the impact would include the construction of the proposed development.

'*Effect*' is defined as the change or changes resulting from those actions, e.g. a change in landscape character, or changes to the composition, character and quality of views in the receiving environment. This report focusses on these effects.

### **Distinguishing 'Landscape' and 'Visual' Effects**

Another key distinction to make in a LVIA is that between landscape effects and the visual effects of development.

'Landscape' results from the interplay between the physical, natural and cultural components of our surroundings. Different combinations of these elements and their spatial distribution create distinctive character of landscape in different places. 'Landscape character assessment' is the method used in LVIA to describe landscape, and by which to understand the potential effects of a development on the landscape as 'a resource'. Character is not just about the physical elements and features that make up a landscape, but also embraces the aesthetic, perceptual and experiential aspects of landscape that make a place distinctive.

Views and 'visual amenity' refer to the interrelationship between people and the landscape. The GLVIA prescribes that effects on views and visual amenity should be assessed separately from landscape, although the two topics are inherently linked. Visual assessment is concerned with changes that arise in the composition of available views, the response of people to these changes and the overall effects on the area's visual amenity.

The assessment of landscape and visual effects included a desktop study, review of the proposed development drawings and visualisations, and a number of site visits which were carried out in 2018 and 2019.

### 12.1.3 Assessment Criteria

#### Methodology for Landscape Assessment

In Section 12.3 of this report the landscape effects of the development are assessed. Landscape impact assessment considers the likely nature and scale of changes to the main landscape elements and characteristics, and the consequential effect on landscape character. Existing trends of change in the landscape are taken into account. The potential effect is assessed based on measurement of the landscape sensitivity against the magnitude of change which would result from the development.

#### Sensitivity of the Landscape Resource

**Landscape Sensitivity:** Landscape sensitivity is a function of its land use, landscape patterns and scale, visual enclosure and distribution of visual receptors, scope for mitigation, and the value placed on the landscape. It also relates to the nature and scale of development proposed. It includes consideration of landscape values as well as the susceptibility of the landscape to the proposed change.

Landscape values can be identified by the presence of landscape designations or policies which indicate particular values, either on a national or local level. In addition, a number of criteria are used to assess the value of a landscape. These are described further below.

Landscape susceptibility is defined in the GLVIA as the ability of the landscape receptor to accommodate the proposed development without undue consequences for the maintenance of the baseline scenario and/or the achievement of landscape planning policies and strategies.

Susceptibility also relates to the type of development – a landscape may be highly susceptible to certain types of development but have a low susceptibility to other types of development. Landscape susceptibility in relation to wind energy developments can include consideration of:

- Topography and skyline – uplands can absorb wind energy development depending on siting and design
- Landscape pattern and landcover– a simple landscape pattern can be less susceptible than a complex pattern, including varying types of landcover
- Settlement pattern – this can influence susceptibility

Sensitivity is therefore a combination of Landscape value and Susceptibility. Landscape Values are discussed in Section 12.2, while Landscape Susceptibility and the overall Sensitivity is discussed in Section 12.3.

For the purpose of assessment, five categories are used to classify the landscape sensitivity of the receiving environment.

Table 12.1: Categories of Landscape Sensitivity

Sensitivity	Description
Very High	Areas where the landscape exhibits a very strong, positive character with valued elements, features and characteristics that combine to give an experience of unity, richness and harmony. The character of the landscape is such that its capacity for accommodating change in the form of development is very low. These attributes are recognised in landscape policy or designations as being of national or international value and the principle management objective for the area is protection of the existing character from change
High	Areas where the landscape exhibits strong, positive character with valued elements, features and characteristics. The character of the landscape is such that it has limited/low capacity for accommodating change in the form of development. These attributes are recognised in landscape policy or designations as being of national, regional or county value and the principle management objective for the area is conservation of the existing character.
Medium	Areas where the landscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong. The character of the landscape is such that there is some capacity for change in the form of development. These areas may be recognised in landscape policy at local or county level and the principle management objective may be to consolidate landscape character or facilitate appropriate, necessary change
Low	Areas where the landscape has few valued elements, features or characteristics and the character is weak. The character of the landscape is such that it has capacity for change; where development would make no significant change or would make a positive change. Such landscapes are generally unrecognised in policy and where the principle management objective is to facilitate change through development, repair, restoration or enhancement.
Negligible	Areas where the landscape exhibits negative character, with no valued elements, features or characteristics. The character of the landscape is such that its capacity for accommodating change is high; where development would make no significant change or would make a positive change. Such landscapes include derelict industrial lands or extraction sites, as well as sites or areas that are designated for a particular type of development. The principle management objective for the area is to facilitate change in the landscape through development, repair or restoration.

**Magnitude of Landscape Change:** The magnitude of change is a factor of the scale, extent and degree of change imposed on the landscape with reference to its key elements, features and characteristics (also known as ‘landscape receptors’). Five categories are used to classify magnitude of landscape change.

Table 12.2: Magnitude of Landscape Change

Sensitivity	Description
Very High	Change that is large in extent, resulting in the loss of or major alteration to key elements, features or characteristics of the landscape (i.e. landscape receptors), and/or introduction of large elements considered totally uncharacteristic in the context. Such development results in fundamental change in the character of the landscape with loss of landscape quality and perceived value.
High	Change that is moderate to large in extent, resulting in major alteration or compromise of important landscape receptors, and/or introduction of large elements considered uncharacteristic in the context. Such development results in change to the character of the landscape with loss of landscape quality and perceived value.

Medium	Change that is moderate in extent, resulting in partial loss or alteration of landscape receptors, and/or introduction of elements that may be prominent but not necessarily substantially uncharacteristic in the context. Such development results in change to the character of the landscape but not necessarily reduction in landscape quality and perceived value.
Low	Change that is moderate or limited in scale, resulting in minor alteration of landscape receptors, and/or introduction of elements that are not uncharacteristic in the context. Such development results in minor change to the character of the landscape and no reduction in landscape quality and perceived value.
Negligible	Change that is limited in scale, resulting in no alteration to landscape receptors, and/or introduction of elements that are characteristic of the context. Such development results in no change to the landscape character, quality or perceived value.

**Significance of Effects**

In order to classify the significance of effects, the predicted magnitude of change is measured against the sensitivity of the landscape/viewpoint, using the following guide, from the EPA Draft Guidance (2017).

There are seven classifications of significance, namely: (1) imperceptible, (2) not significant, (3) slight, (4) moderate, (5) significant, (6) very significant, (7) profound.

**Table 12.3: Significance of Landscape Effect**

		Sensitivity of the Resource				
		Very High	High	Medium	Low	Negligible
Magnitude of Change	Very High	Profound	Profound-Very Significant	Very Significant-Significant	Moderate	Slight
	High	Profound-Very Significant	Very Significant	Significant	Moderate-Slight	Slight-Not Significant
	Medium	Very Significant-Significant	Significant	Moderate	Slight	Not Significant
	Low	Moderate	Moderate-Slight	Slight	Not significant	Imperceptible
	Negligible	Slight	Slight-Not Significant	Not significant	Imperceptible	Imperceptible

Landscape effects are also classified as beneficial, neutral or negative/adverse. Development has the potential to improve the environment as well as damage it. In certain situations, there might be policy encouraging a type of change in the landscape, and if a development achieves the objective of the policy the resulting effect might be positive, even if the landscape character is changed.

(It is noted that the EPA definitions include qualitative references in the definition of significance, whereas in LVIA this is usually described separately.)

**Methodology for Visual Assessment**

In Section 12.3 of this report the visual effects of the development are assessed. Visual assessment considers the value of the views, and the visual susceptibility of the visual receptors (groups of people) and the changes to the composition and character of views. The assessment is made for a



number of viewpoints selected to represent the range of visual receptors in the receiving environment. The significance of the visual effects experienced at these locations is assessed by measuring the visual receptor sensitivity against the magnitude of change to the view resulting from the development.

#### Sensitivity of the Viewpoint/Visual Receptor

Visual receptor sensitivity is a function of two main considerations:

*Susceptibility of the visual receptor to change.* This depends on the occupation or activity of the people experiencing the view, and the extent to which their attention or interest is focussed on the views or visual amenity they experience at that location.

Visual receptors most susceptible to change include residents at home, people engaged in outdoor recreation focused on the landscape (e.g. trail users), and visitors to heritage or other attractions and places of community congregation where the setting contributes to the experience.

Visual receptors less susceptible to change include travellers on road, rail and other transport routes (unless on recognised scenic routes which would be more susceptible), people engaged in outdoor recreation or sports where the surrounding landscape does not influence the experience, and people in their place of work or shopping where the setting does not influence their experience.

*Value attached to the view.* This depends to a large extent on the subjective opinion of the visual receptor but also on factors such as policy and designations (e.g. scenic routes, protected views), or the view or setting being associated with a heritage asset, visitor attraction or having some other cultural status (e.g. by appearing in arts).

Visual receptor susceptibility and value of the viewpoints which are assessed, are discussed further in Sections 12.3 and 12.4. For the purpose of assessment, five categories are used to classify a viewpoint's sensitivity:

**Table 12.4: Visual Receptor Sensitivity**

Sensitivity	Description
Very High	Iconic viewpoints - towards or from a landscape feature or area - that are recognised in policy or otherwise designated as being of national value. The composition, character and quality of the view are such that its capacity for accommodating change in the form of development is very low. The principle management objective for the view is its protection from change.
High	Viewpoints that are recognised in policy or otherwise designated as being of value, or viewpoints that are highly valued by people that experience them regularly (such as views from houses or outdoor recreation features focussed on the landscape). The composition, character and quality of the view may be such that its capacity for accommodating compositional change in the form of development may or may not be low. The principle management objective for the view is its protection from change that reduces visual amenity.
Medium	Viewpoints representing people travelling through or past the affected landscape in cars or on public transport, i.e. viewing but not focused on the landscape which is regarded as moderately scenic. The views are generally not designated, but which include panoramic views or views judged to be of some scenic quality, which demonstrate some sense of naturalness, tranquillity or some rare element in the view.
Low	Viewpoints reflecting people involved in activities not focused on the landscape e.g. people at their place of work or engaged in similar activities such as shopping, or on heavily trafficked routes etc. The view may present an attractive backdrop to these activities but is not regarded as particularly scenic or an important element of these

	activities
Negligible	Viewpoints reflecting people involved in activities not focused on the landscape e.g. people at their place of work or engaged in similar activities such as shopping where the view has no relevance or is of poor quality.

### Magnitude of Change to the View

Classification of the magnitude of change takes into account the size or scale of the intrusion of development into the view (relative to the other elements and features in the composition, i.e. its relative visual dominance), the degree to which it contrasts or integrates with the other elements and the general character of the view, and the way in which the change will be experienced (e.g. in full view, partial or peripheral, or glimpses). It also takes into account the geographical extent of the change, the duration and the reversibility of the visual effects.

Five categories are used to classify magnitude of change to a view:

**Table 12.5: Magnitude of Visual Change**

Magnitude of Change	Description
Very High	Full or extensive intrusion of the development in the view, or partial intrusion that obstructs valued features or characteristics, or introduction of elements that are completely out of character in the context, to the extent that the development becomes the dominant the composition and defines the character of the view and the visual amenity
High	Extensive intrusion of the development in the view, or partial intrusion that obstructs valued features, or introduction of elements that may be considered uncharacteristic in the context, to the extent that the development becomes co-dominant with other elements in the composition and affects the character of the view and the visual amenity.
Medium	Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity
Low	Minor intrusion of the development into the view, or introduction of elements that are not uncharacteristic in the context, resulting in minor alteration to the composition and character of the view but no change to visual amenity
Negligible	Barely discernible intrusion of the development into the view, or introduction of elements that are characteristic in the context, resulting in slight change to the composition of the view and no change in visual amenity.

### Significance of Visual Effects

As for landscape effects, in order to classify the importance of visual effects, the magnitude of change to the view is measured against the sensitivity of the viewpoint. The seven categories as set out by the EPA (2017) are used to describe the significance of the effect.

Visual effects are also classified as beneficial, neutral or negative. This is an inherently subjective exercise. Visual receptors' attitudes to development of various types varies and this affects their perception of the visual effects of development.

### Quality and Timescale

The predicted effects are also classified as beneficial, neutral or adverse. This is not an absolute exercise; in particular, visual receptors' attitudes to development, and thus their response to the



impact of a development, will vary. However, the methodology applied is designed to provide robust justification for the conclusions drawn. These qualitative impacts/effects are defined as:

- Adverse – Scheme at variance with landform, scale, pattern. Would degrade, diminish or destroy the integrity of valued features, elements or their setting or cause the quality of the landscape(townscape)/view to be diminished;
- Neutral - Scheme complements the scale, landform and pattern of the landscape(townscape)/view and maintains landscape quality;
- Beneficial – improves landscape(townscape)/view quality and character, fits with the scale, landform and pattern and enables the restoration of valued characteristic features or repairs / removes damage caused by existing land uses.

Impacts/effects are also categorised according to their longevity or timescale:

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

A statement is made as to the appropriateness of the proposed development based on the combined assessment of the predicted landscape and visual effects. This methodology, in accordance with the various guidelines for LVIA, results in a conclusion as to the appropriateness of the proposed development based on objective assessment of its likely landscape and visual impacts.

#### **12.1.3.1 Zone of Theoretical Visibility (ZTV) Maps**

ZTV Maps are produced indicate theoretical visibility and are based on topographical information (the data supplies uses contours at 10 metres intervals) to indicate areas which may have views of the turbines. It is important to note that these maps, though useful, have limitations as they are based on topography alone, and represent a bare-earth scenario, that is, a landscape without any structures, buildings, or vegetation. In reality many of these elements combine to screen our views of the landscape, so the ZTV maps represent a greater extent of visibility than in reality.

It is important to note the limitations of ZTV maps which include those identified by Scottish Natural Heritage (SNH):

- ZTV maps do not include any vegetation, buildings or other structures in the landscape so are different to actual visibility
- ZTV maps give information on the likely extent and pattern of visibility but not the nature or magnitude - and what the visual effect is likely to be
- It is not easy to test the accuracy of a ZTV in the field, though some verification will occur during the assessment from viewpoints.

ZTV maps are useful to determine potential visual receptors and viewpoints, as they show areas which will not have any visibility of the proposed development. They also show the numbers of turbines likely to be visible, and how much of the turbines is potentially visible. However as they do

not take into account the presence of vegetation or structures in the landscape, and therefore areas showing theoretical visibility on the ZTV maps will not always have visibility in reality.

Several ZTV maps were produced. A ZTV map was produced for Hub Height, which show the areas where the turbine hubs or nacelles, are visible. Tip Height ZTV maps show all areas where the turbine up to the blade tip, is visible. Both are used in the assessment to describe the extent and pattern of visibility. These maps are described in Section 12.2.4 and also in 12.3.2 and illustrated in Figures 12.11 and 12.12.

#### **12.1.3.2 Zone of Theoretical Visibility (ZTV) Maps**

A set of 27 no. photomontages were produced from carefully selected viewpoints, to assist in assessing the visual effects, from various locations throughout the study area. These photomontages were produced by Innovision and are included in the Photomontage Booklet in Volume IV.

Where applicable, Innovision adheres to the guidelines as set out by the Scottish Natural Heritage - "Visual Representation of Wind Farms, February 2017". In order to generate a photomontage, the proposed development will be "placed" into the existing photography using professional GIS and 3D modelling software. Once placement has been achieved, a photo-realistic render is output depicting what the proposed development will look like if built. The resulting output is a highly accurate, verifiable photomontage formatted to a standard in accordance with the SNH guidance.

While these photomontages are extremely useful in giving an impression of the proposed turbines, and assist in the assessment as well as the layout of the proposed turbines, the SNH guidance notes the uses and limitations of visualisations. These include:

- Visualisations provide a tool for assessment, but should never be considered as a substitute for visiting a viewpoint in the field
- It must be noted that photographs cannot replicate a view as seen by the human eye. They also only represent a view from a single location, at a particular time and in particular weather conditions.)
- Static visualisations cannot convey the effect of turbine blade movement

#### **12.1.4 Statement on Limitations and Difficulties Encountered**

No difficulties were encountered.

#### **12.1.5 Competency of Assessor**

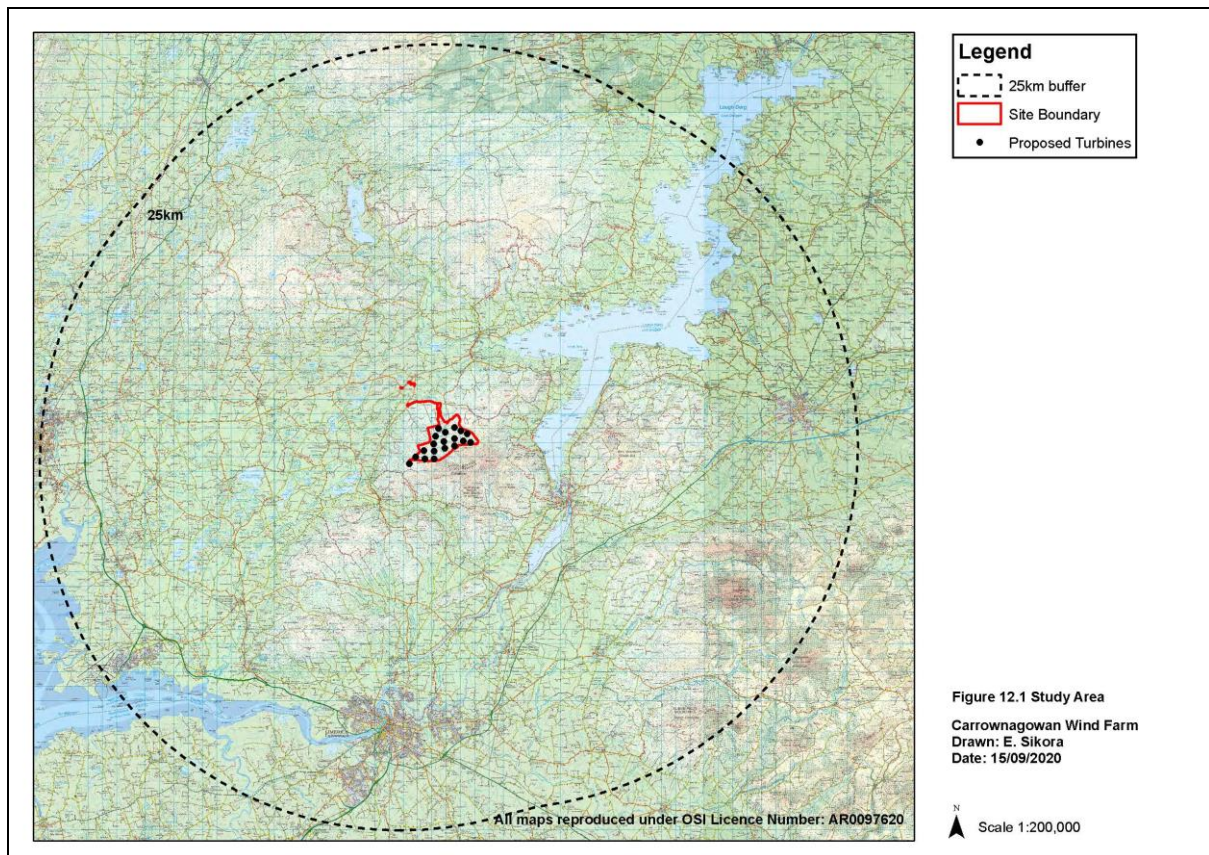
This Landscape and Visual Assessment was carried out by Evelyn Sikora, BA MA, MILI. She has over five years' experience in Landscape and Visual Assessment (LVIA), and has worked on the Landscape and Visual assessment for a range of wind energy developments through Ireland, from single turbine developments to Strategic Infrastructure Developments. She also has experience in a range of other LVIA projects including solar energy, infrastructure, flood relief, and recreation projects. Oversight was provided by Declan O' Leary, CMLI, MILI, Managing Director of Cunnane Stratton Reynolds.

## 12.2 EXISTING RECEIVING ENVIRONMENT

The receiving environment is described in policy terms, and thereafter in terms of landscape and visual character.

The site of the proposed development is on the northern slopes of the Slieve Bernagh hills, approximately 2.5 kilometres south of Bodyke, Co. Clare. The study area for the landscape and visual assessment extends to a distance of 30 kilometre radius from the proposed turbines. This exceeds the area recommended by the DOEHLG (2006) Guidelines of a 20 kilometre radius ZTV for wind turbines of 100 metres (or more) in height, and 25 kilometres where there is a landscape of national importance. The study area is included in Figure 12.1, Volume III (Appendix 12-1) and a reduced version is shown in Figure 12.1 overleaf:

Figure 12-1 Study Area (reduced, not to scale)



### 12.2.1 Policy Context

There are a number of policy documents which are relevant, including local policy contained in the relevant County Development Plans, as well as National policy on wind energy developments. These are summarised below. While the site lies entirely in Co. Clare, some parts of the wider study area lie within Co. Tipperary, which is in relatively close proximity to the east of the site, across Lough Derg. Sections of the study area also fall within Co. Limerick and Co. Galway, but these areas are further from the proposed development. The proposed development is approximately 16 kilometres from County Galway and approximately 10.2 kilometres from Co. Limerick.

#### 12.2.1.1 Clare County Development Plan 2017-2023

The Clare County Development Plan (hereafter referred to as the Plan) contains a number of policies and objectives relating to landscape and visual amenity, including designations, scenic routes. It also includes the Clare Wind Energy Strategy.

#### Landscape Designations – Living Landscapes

Co Clare's landscapes are categorised into areas which have similar characteristics for which similar planning policies are applicable. The Plan notes that the approach builds on the Landscape Character Assessment of County Clare. The 'Living Landscapes' approach sets out three main categories, recognising that the different parts of the County have different potential. The Plan also notes that the landscapes are not constant but seen as alive and continually changing. The three categories are listed below and illustrated in Figure 12.2 below:

- **Settled Landscape** – areas where people live and work
- **Working Landscapes** – intensively settled and developed areas within Settles Landscapes or areas with a unique natural resource
- **Heritage Landscapes** – areas where natural and cultural heritage are given priority and where development is not precluded but happened more slowly and carefully

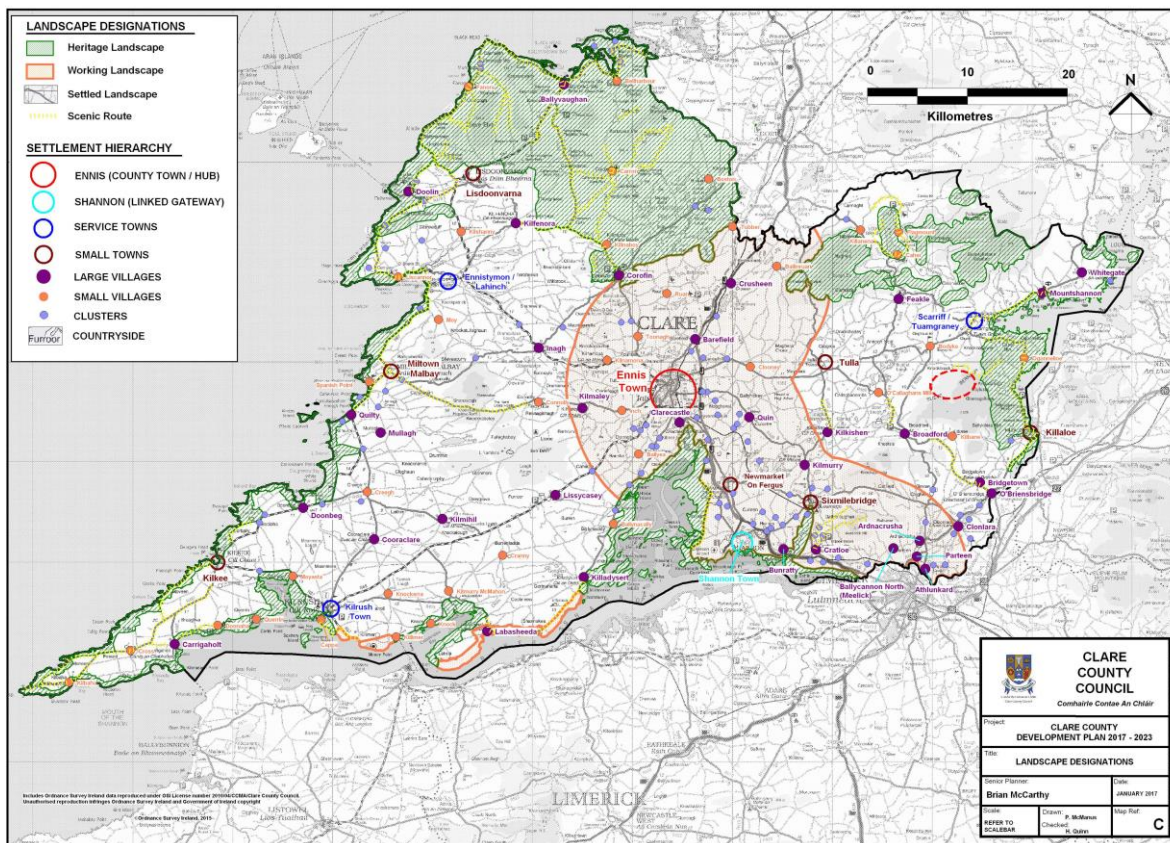
The proposed development is located in a **Settled** landscape, which also includes the areas south to Bridgetown and west including Tulla and Kilkishen and north as far as Feakle, as shown in Figure 12.2. The Plan notes that Settled landscapes accommodate roads, power-lines, quarries and piped services that service settlements and industry. Uses which area envisaged include energy, along with agriculture, forestry, extraction, transportation, industry, commerce, tourism, recreation and leisure, education, healthcare and social infrastructure.

Heritage Landscapes occur in four main areas of the County, with an area to the east as well as north of the site. An area of Heritage Landscape is located to the east (approximately 1.1 kilometres) of the proposed development, from the east of the peak of Moylussa and along the shores of Lough Derg from Killaloe to the southeast to Mountshannon in the northeast. This area includes the village of Ogonelloe as well as a number of islands in Lough Derg, including Inis Cealtra or Holy Island and part of the lake itself. A number of areas classified as Heritage landscape (Lough Graney and the southern Slieve Aughties) are also located approximately 8 kilometres to the north of the proposed turbines.

These areas are collectively described in the Plan as Heritage Landscape 1, having regard to the LCAs of Slieve Aughty Uplands, LCA 6 Lough Graney and Unit 6 Lough Graney and Unit 7 Lough Derg Basin.



Figure 12-2: Landscape Designations in Co. Clare



Policies associated with Settled Landscapes are as follows:

**Policy 13.2:** It is an objective of the Development Plan:

*To permit development in areas designated as ‘settled landscapes’ that sustain and enhance quality of life and residential amenity and promote economic activity subject to:*

- *Conformity with all other relevant provisions of the Plan and the availability and protection of resources;*
- *Selection of appropriate sites in the first instance within this landscape, together with consideration of the details of siting and design which are directed towards minimising visual impacts;*
- *Regard being given to avoiding intrusions on scenic routes and on ridges or shorelines.*

*Developments in these areas will be required to demonstrate:*

- *That the site has been selected to avoid visually prominent locations;*
- *That the site layouts avail of existing topography and vegetation to reduce visibility from scenic routes, walking trails, water bodies, public amenities and roads;*
- *That design for buildings and structures reduce visual impact through careful choice of forms, finishes and colours, and that any site works seek to reduce visual impact.*



## Views and Prospects

Section 13.5 of the Clare County Development Plan contains a number of objectives in relation to scenic routes. The Plan notes that there is a need to protect and conserve views adjoining public roads throughout the county where views are of high amenity value, however it notes that it is not proposed that this should give rise to the prohibition of development along these routes but that development, where permitted, should not seriously hinder or obstruct these views and should be designed to minimise visual impact. A list of scenic routes is included in Appendix 5.

Several scenic routes are in the vicinity of the proposed development. All scenic routes within 20 kilometres are listed below in Table 12.6 and shown on Figure 12.3, along with other landscape designations, as these are the ones which are most likely to experience landscape and visual effects. Figure 12.3 is included in Volume III, and a reduced version is also included below.

However only some of these scenic routes will experience visibility. The scenic routes and landscape designations are overlaid on the ZTV (Zone of Theoretical Visibility) Map and this is illustrated in Figure 12.4 contained in Volume III and an extract of this is included below. This shows that Scenic Routes 26, 27, 28, and 32 are most likely to be potentially affected by the proposed development. The closest scenic route to the proposed development is Route 32, from Church at Ballylaghan crossroads to Caherhurly. ZTV maps are explained further in 12.2.3.

**Table 12.6: Scenic Routes within 20 kilometres of the proposed development**

Scenic Route No.	Location and Description	Distance form nearest turbine
23	Road from Cratloe north east through Galllows Hill to Glennagross	12.6km
24	Views in and out of Lough Cullaunyheeda	10.6km
25	Views in and out of Doon Lough	3.5km
26	R466 between Broadford and O' Briensbridge	3.9km
27	R463 from O' Briensbridge through Killaloe to outside Ogonelloe	5.2km
28	R463 from Tuamgraney to Mountshannon	5.3km
29	Roads surrounding Lough Graney.	13.6km
32	Road from Church at Ballylaghan crossroads as far as the crossroads at Caherhurly (part of the East Clare Way)	1.5km

The plan contains the following objective in relation to scenic routes:

**Objective 13.7:** It is an objective of Clare County Council:

- (a) To protect sensitive areas from inappropriate development while providing for development and change that will benefit the rural community;*
- (b) To ensure that proposed developments take into consideration their effects on views from the public road towards scenic features or areas and are designed and located to minimise their impact;*
- (c) To ensure that appropriate standards of location, siting, design, finishing and landscaping are achieved.*

Figure 12-3: Scenic Routes and Landscape Designations (reduced)

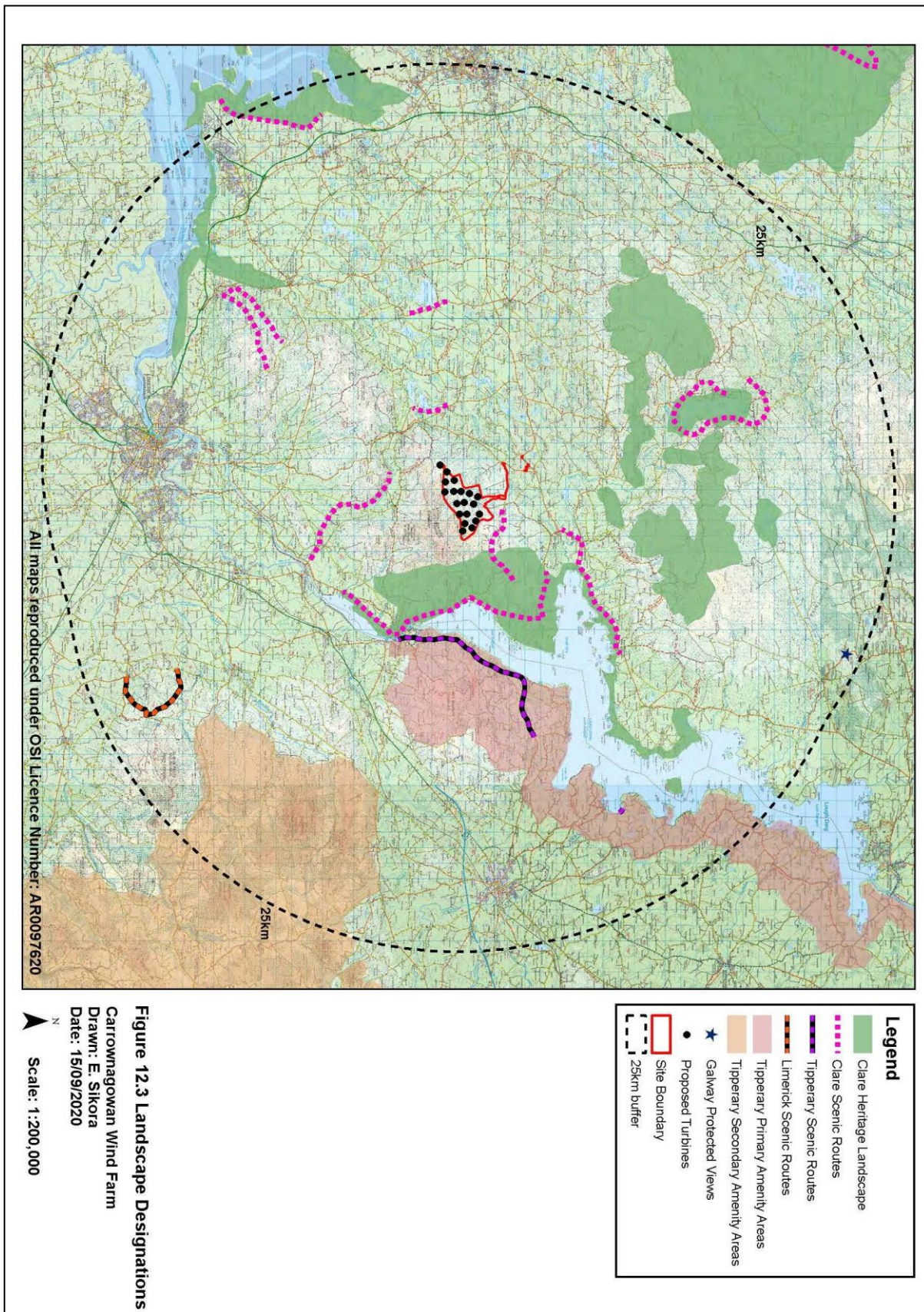
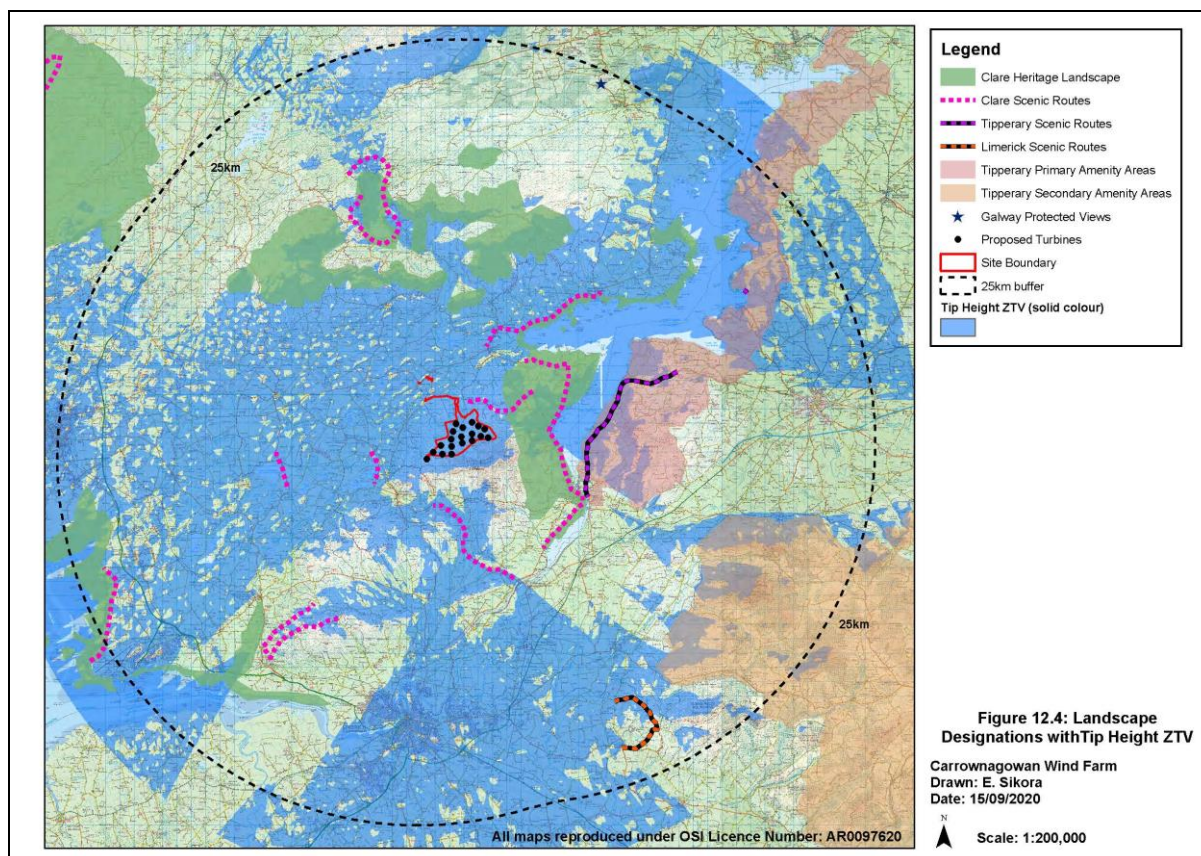




Figure 12-4: in Volume III shows the landscape designations which are included in 12.3, overlaid on the hub height ZTV map



### Landscape Character Assessment of County Clare

The landscape designations in County Development Plan have evolved over the years. The Plan refers to the Landscape Character Assessment of Co. Clare (2004), hereafter referred to as the Assessment, identified 26 Landscape Character Types (LCTs) which categorise the landscape into areas of uplands, lowlands and coastal areas. The Assessment also identified 21 Landscape Character Areas (LCAs).

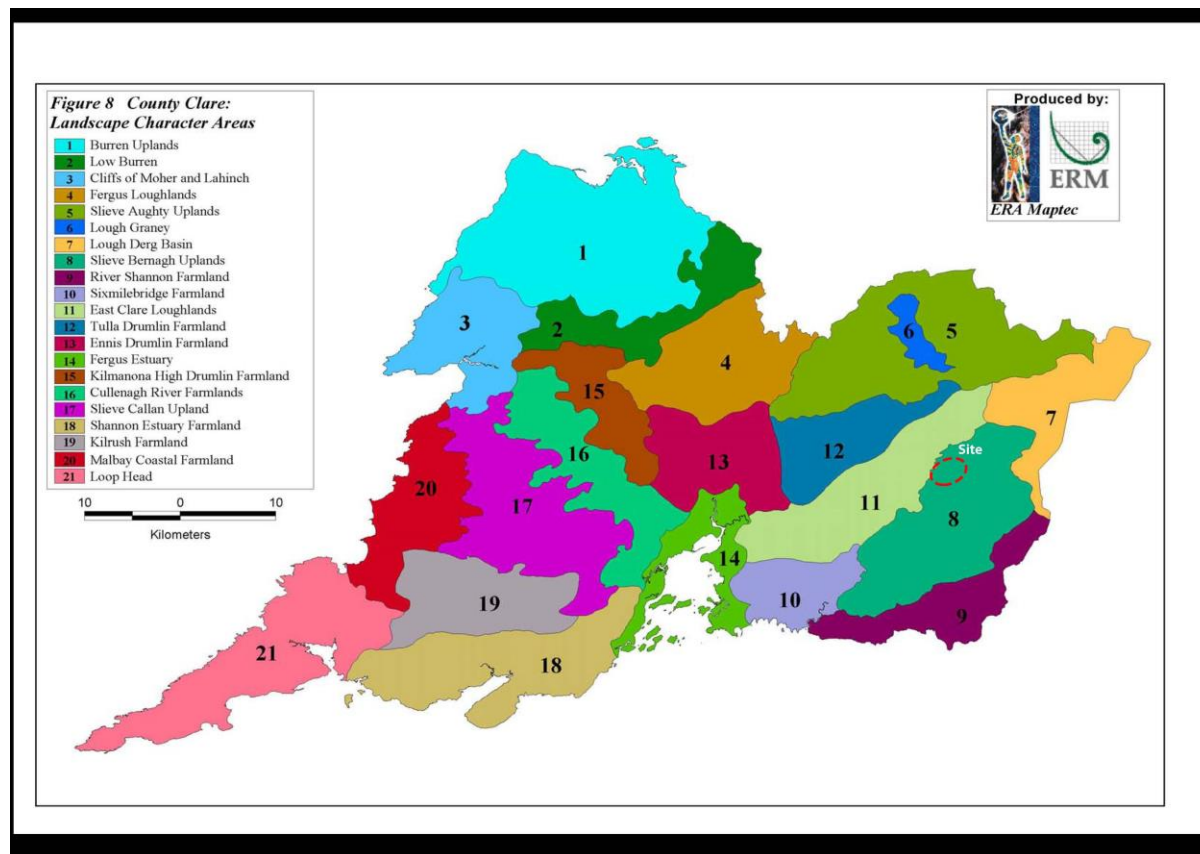
The site of the proposed development is located in the Slieve Bernagh hills, (which along with the Slieve Aughtys, are described in the Assessment as part of the Upland Hill LCTs). These are described as rolling upland hills with core areas above 200 metres, rising to 526 metres at the highest point, with occasional small lakes and small streams draining these slopes. It also notes that the land cover is blanket bog but has been modified over time by coniferous planting, resulting in a mosaic with open areas of heather, gorse, blanket bog, rough grasses, and forestry. It notes that the upland hills are often open and reflect commonage, some with enclosures. These areas have little settlement and roads, apart from forestry access roads.

The County is divided into 21 LCAs, which are illustrated on Figure 12.5 below. The site of the proposed development is located with in LCA 8, Slabh (sic) Bernagh Uplands, however several neighbouring LCAs including LCA 11 East Clare Loughlands, and LCA 7 Lough Derg Basin, LCA 12 Tulla

Drumlin Basin and LCA 5 Slieve Aughty Uplands, are also relevant as there is potential for visual effects from these LCAs. This is show in Figure 12.5 below.

Figure 12-5: Landscape Character Areas in Co. Clare with site location

Source: ERM (2004)



**LCA 8** Sliabh Bernagh Uplands are described as areas of gently rolling hills, reaching about 530 metres (Cragnamurragh reaches 526 m and Moylussa, to the east, reaches 532 metres). The LCA consists of uplands and slopes around Sliabh Bernagh and extends from the sloping lands above Tuamgraney to the north, east as far as Ogonelloe. The LCA also includes the Broadford, the Broadford hills, southwest of Broadford village, and Woodcock Hill, on the slopes above Cratloe village to the south.

The site of the proposed development therefore lies in the northern part of the LCA as indicated in Figure 12.4, close to LCA 11. The Assessment describes the landcover including extensive coniferous plantations in parts, with the open upper slopes containing blanket bog and wet heath landcover, with some turf cutting. It notes that some older plantations are being clear felled.

The Assessment notes the prominence of Slieve Bernagh to the south (and west) of Lough Derg and the assessment refers to key characteristics which include the gentle rolling nature of the hills, with scattered settlement which is confined to the lower fringes of the hills. The remote and isolated character of the area is a characteristic, with panoramic views to Lough Derg, the lower drumlin farmland and the Shannon Estuary is mentioned, though it should be noted that these views are available only from some parts of the LCA.

The access roads around Slieve Bernagh consist mainly of forestry roads. Vegetation is dominated by heather moorland, plantation forests and semi natural woodlands on lower slopes and along water courses. It also notes that historically there is evidence of mainly ritual settlement (cairns, barrows and standing stones). The Assessment includes principles for Landscape Management, which include:

- Consideration of siting and design of new forestry plantations as well as careful management of clear felling regimes
- Conserve the open character of remaining areas
- Stronger coordination required for masts
- Promote proactive management of windfarms

It should be noted that the Landscape character assessment was used as a baseline for the Clare Wind Energy Strategy (WES) which designated the site as a Strategic Area/Acceptable In Principle for windfarms as discussed below.

The LCA to the east is the **LCA 7** Lough Derg Basin, which is partly designated as a Heritage Landscape. This includes the lake itself, and the surrounding lands which slope towards Lough Derg's western shore, including the settlements of Mountshannon, Scarriff, Tuamgraney and Killaloe. This is described as a highly scenic area with an ecological designation (SAC) with parts of the lakeshore enclosed by semi natural deciduous woodland. A number of wooded islands are present in the lake, including Inis Cealtra (Holy Island) which is noted as an important sixth century monastic settlement. Particular reference is made of the long views across the lake to the Arra Mountains in Tipperary as well as to Slieve Bernagh in Co. Clare. Lough Derg is the largest of the lakes on the River Shannon. The lakeshore is considered sensitive to development (housing and marina developments are referred to) but overall the area is described as highly scenic, well maintained and intact.

To the west of the proposed development, lies the LCA 11 East Clare Loughlands. This LCA extends from the outskirts of Scarriff in the north, bordering LCA 8 Sliabh Bernagh and Broadford Hills, extending to Newmarket on Fergus to the west, and to the outskirts of Quin to the east and includes the settlements of Bodyke which is just 3.9 kilometres north of the nearest proposed turbine, and Kilkishen. The Assessment notes that the area is an attractive mosaic of loughs, farmlands and some rock outcrops, and predominantly rural in character with quiet minor roads. This character changes around the areas of Sixmilebridge and closer to Limerick. The characteristics include drumlins and several lakes including Clonlea Lough, Doon Lough and Finlough, while areas of pasture grassland and broadleaf and some conifer plantations are the main elements of landcover. Though some views are afforded from the slopes of these drumlins, the Assessment notes that views are often limited.

Other LCAs in the vicinity of the site include **LCA 12** Tulla Drumlin Farmland which lies to the northwest and includes a low lying drumlin area from Clooney towards Feakle and Tulla, extending to Kilkishen to the south. Primarily composed of agricultural grasslands, with some raised bog and coniferous plantations, it is noted that hedgerows and low drumlins provide screening however it notes that large scale development would be highly visible in low drumlin areas.

**LCA 5** Sliabh Aughty includes Feakle and Whitegate, including large areas of uplands with bogland, coniferous forestry with grazing land on the lower slopes. The area is relatively remote and sparsely settled. The assessment notes views from this LCA towards Lough Derg, Lough Graney, the East Clare loughlands and to the Sliabh Aughty range in Galway. **LCA 6** Lough Graney, which is surrounded by

LCA 5, includes the lake itself and the surrounding undulating landscape, which has a high proportion of woodlands. There are some views to the Slieve Aughty hills from the higher slopes of the LCA. The landscape is relatively small scale and intimate, and there are several scenic routes in the vicinity of Lough Graney. This LCA is considered a highly scenic area.

The relevant policy in the County Development States:

***CDP 13.1: It is an objective of Clare County Council:***

*To encourage the utilisation of the Landscape Character Assessment of County Clare and other relevant landscape policy and guidelines and to have regard to them in the management, enhancement and promotion of the landscapes of County Clare.*

There are a number of policies in the Development Plan relating to Lough Derg as a resource for tourism and recreation, including the following:

*(a) To work with relevant stakeholders to prepare and implement a Visitor Management and Sustainable Tourism Development Plan for Holy Island and to investigate the provision of ancillary services in local villages in the area;*

*(b) To promote the Lough Derg (on the Shannon) Heritage and Nature Trail, the work of the Lough Derg Marketing Strategy Group and to collaborate with Fáilte Ireland and relevant stakeholders on other future initiatives that enhance established attractions and work to promote Lough Derg and the surrounding area as a tourism destination;*

*(c) To facilitate sustainable marina developments and associated amenities at appropriate locations inside and outside of settlements along Lough Derg and lake areas;*

*(d) To develop and enhance tourism products in particular sustainable and eco-tourism;*

*(e) To facilitate and encourage the development of new and expanded outdoor activities in East Clare such as canoeing, water sports, bird watching, mountain-biking and walking trails and to develop links to complementary facilities;*

*(f) To promote Lough Derg and the Slieve Aughty region as a tourism location and to develop a series of viewing points in the area; To support the development of a footpath/walking route around Lough Derg, linking Killaloe to Tuamgraney and Mountshannon;*

*(k) To support the sustainable development of Tinarana Estate as a tourism product;*

### Clare County Wind Energy Strategy

The Clare Wind Energy Strategy (WES) is part of the Development Plan. A key priority was to identify sites of strategic regional and national importance which have the potential to accommodate wind energy development.

The WES designates areas as follows:

- Strategic Areas
- Acceptable in Principle
- Open to Consideration



- Not Normally Permissible

The site of the proposed development is located in a Strategic Area/Acceptable in Principle. Some area to the south and north are designated as Acceptable in Principle, while lands to the east including Moylussa and the shores of Lough Derg are designated as Not Normally Permissible.

### **Landscape capacity and suitability of the development site**

The WES states that it takes into account landscape designations including Scenic Routes, and Heritage Landscapes. The Landscape Character Assessment of County Clare, referred to above, was also used as a baseline to assess the capacity of areas to accommodate wind energy development. In addition the WES states that landscape designations of neighbouring counties were also taken into consideration. Viewshed analysis, which maps visibility from a particular location, was also undertaken in certain upland areas such as Sliabh Callan and Slieve Bernagh. However the WES notes that this does not include vegetation or buildings and does not replace detailed modelling of wind farm developments but are a useful guide. Consideration was also given to areas which are considered important for recreation or tourism including the Burren and Lough Derg.

The Sliabh Bernagh LCA, where the site is located, is described in the WES in some detail. The Strategic Area where the majority of the proposed development is located, lies on the northern side of the mountain range. The WES described the LCA's capacity for wind farms as follows:

*There are certain parts of this LCA that are highly sensitive due to their nature designations and scenic qualities. In particular, the foothills and mountains over-looking Lough Derg and the unenclosed bogs of Lackeragh and Glenvagalliagh Mountain.*

*However, other areas on the north west and westerly aspects of the mountain are more robust and can accommodate number of large or medium wind farms.*

The latter area, on the north-west slopes of the Slieve Bernagh hills, is the location for the proposed development. The location of the proposed development is located partly within a Strategic Area in the WES, and is considered to have low sensitivity to wind farm developments, and able to accommodate large wind farms, defined in the WES (Section 1.4) as between 11-25 turbines as shown in Figure 12.6 below.

Figure 12-6: LCAs within Strategic Areas in Co. Clare Source: Clare County Council WES (2017)

LCAs within areas designated as Strategic Areas					
LCA	Overall Sensitivity to Wind Farm Developments	Appropriate size of wind farms (turbine numbers)	Capacity	LCTs in Co. Clare. LCA and Corresponding LCTs in 2006 Planning Guidelines	Cumulative Advice from 2006 Planning Guidelines
Sliabh Callan This LCA encompasses upland hills and slopes of Sliabh Callan and Ben Dash	Medium to Low	Large	The rolling hills, low settlement, extensive plantations reduce the overall sensitivity of this LCA to wind farm development. The area could accommodate a number of large or medium wind farms subject to careful siting to avoid significant impacts on skylines.  Potential Renewable Energy Generation for this area is 250 MW (Limerick Clare Energy Agency).	Upland Hills Moorland Hills  Planning Guidelines: Moorland Mountain	Acceptable, depending on topography as well as siting and design of wind energy developments involved.
Sliabh Bernagh Uplands This LCA encompasses the Sliabh Bernagh Range and Broadford Hills.	Medium to low	Large	There are certain parts of this LCA that are highly sensitive due to their nature designations and scenic qualities. In particular, the foothills and mountains over-looking Lough Derg and the unenclosed bogs of Lackerragh and Glenvagalliagh Mountain.  However, other areas on the north west and westerly aspects of the mountain are more robust and can accommodate number of large or medium wind farms.  In the Broadford Hills areas, the areas around Woodcock Hill, Ballycar, Corlea and Knockaunnamoughily are identified as Strategic Areas.  Potential Renewable Energy Generation for this area is 150 MW (LCEA).	Upland Hills Upland Fringe Glacial Valley.  Planning Guidelines: Moorland Mountain	Acceptable, depending on topography as well as siting and design of wind energy developments involved.

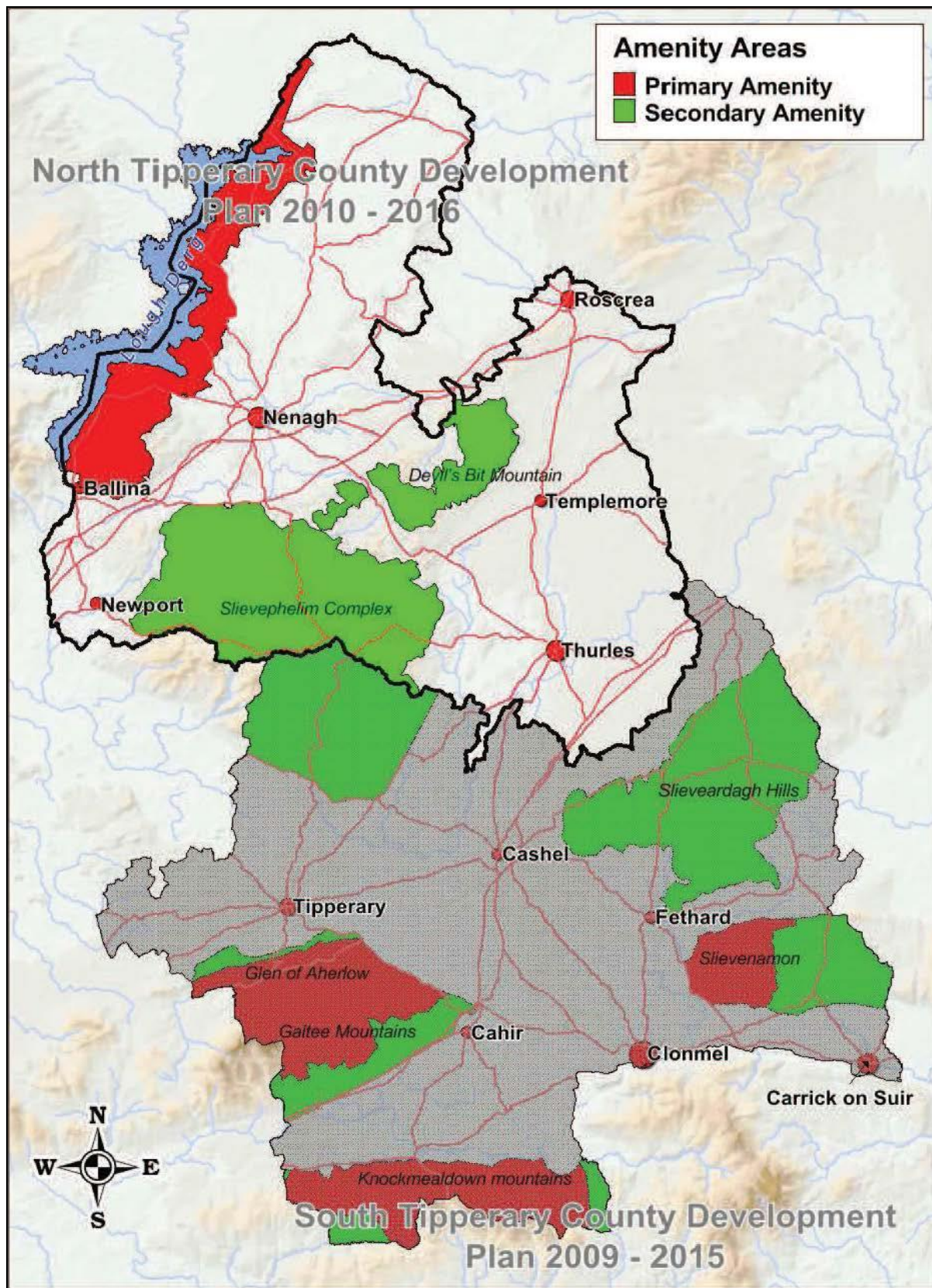
Though the site of the proposed development is in County Clare, lands to the east including the eastern shoreline of Lough Derg are located in County Tipperary, approximately 6.3 kilometres from the nearest turbine. The assessment of effects therefore includes landscape and visual designations in County Tipperary within approximately 30 kilometres of the proposed development. Chapter 7 The North Tipperary CDP identifies a number of landscape designations and scenic routes.

**Landscape Designations**

The North Tipperary Plan identifies Primary and Secondary Amenity Areas. These areas are described as notable by virtue of their scenic and visual quality and offer significant opportunities for tourism development and rural recreational activities. The Plan notes that development proposals will be required to demonstrate that they integrate and respect the visual quality of the landscape. Figure 7.1 of the Plan includes Primary and Secondary Amenity Areas for both North and South Tipperary.

The nearest Area of Primary Amenity is located approximately 6.2 kilometres east of the nearest proposed turbine. This extends from Ballina along the southeast of Lough Derg, along the shoreline to Terryglass. The nearest Secondary Amenity Area, the Slievpheilim complex, is approximately 16.3 kilometres southeast of the proposed development. This is shown below in Figure 12.7:

Figure 12-7: Primary & Secondary Amenity Areas, Co. Tipperary (Source: Tipperary County Council)





Relevant policy is as follows:

**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.

### Scenic Routes

The Plan includes a list of scenic views in the County which include views of key heritage sites, and scenic tourism routes. The Plan notes that the Council may request the submission of a Visual Impact Statement at application stage. The scenic routes are listed in Appendix 4 of the plan (as varied). (Note these do not appear on a map within the Plan) so any illustrations are based on the written descriptions. A number of these are located within approximately 20 kilometres of the proposed development. These are as follows:

**Table 12.7: Scenic Routes in North Tipperary**

Scenic Route Number	Location and Description	Distance from nearest turbine
V01	Views west and sections of the road to the east of the R494 road from Ballina to Portroe	6.8km
V02	Views north and west of the L6037 and L6056 west of Portroe	10.4km
V03	Views west of the L1023 south of Dromineer	16.1km
V04	Views west of the L1026 north of Dromineer	20.2km

Visibility is likely from sections of V01 and parts of V02 as indicated by the ZTV map. These routes are overlaid with the ZTV to indicate theoretical visibility of routes along with the Scenic Routes and Landscape Designations, on Figure 12.4. (It should be noted there is no map of scenic routes in the Co. Tipperary Development Plan, so the exact location of some of the scenic views along local roads are indicative).

The following policy is relevant to the scenic routes:

**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.

### Landscape Character Assessment of Co. Tipperary

The Tipperary County Landscape Character Assessment updated in 2016, includes a description of 23 LCAs. The Tipperary Landscape Character Assessment also sets out high level objectives and guidelines for each LCA, and assigns a landscape sensitivity scoring of -1 to 5, with -1 the least sensitive and 5 the most sensitive. (It should however be noted that this is a guide only).

The closest LCA in Co Tipperary to the site (approximately 6.2 kilometres east) is the Arra Mountains LCA 13, east of Lough Derg extending from Youghal Bay to Newtown, and including the Arra Mountains south as far as Ballina, on the shores of Lough Derg. The key characteristics include the highly scenic landscape dominated by Lough Derg and the Arra Mountains, and the extensive views across the lake from the uplands to Slieve Bernagh and Slieve Aughty mountains. The Lough Derg way walking and cycling route are noted and the prehistoric features on the Arra Mountains and on Tountinna, are also features of the area.

LCA 13 Arra Mountains is regarded as overall Class 4 sensitivity, defined as 'Transitional Vulnerability' but ranges from Class 1 to Class 5 in different parts of the LCA. It notes that this LCA has low compatibility for wind energy developments (this refers to wind energy developments within the LCA).

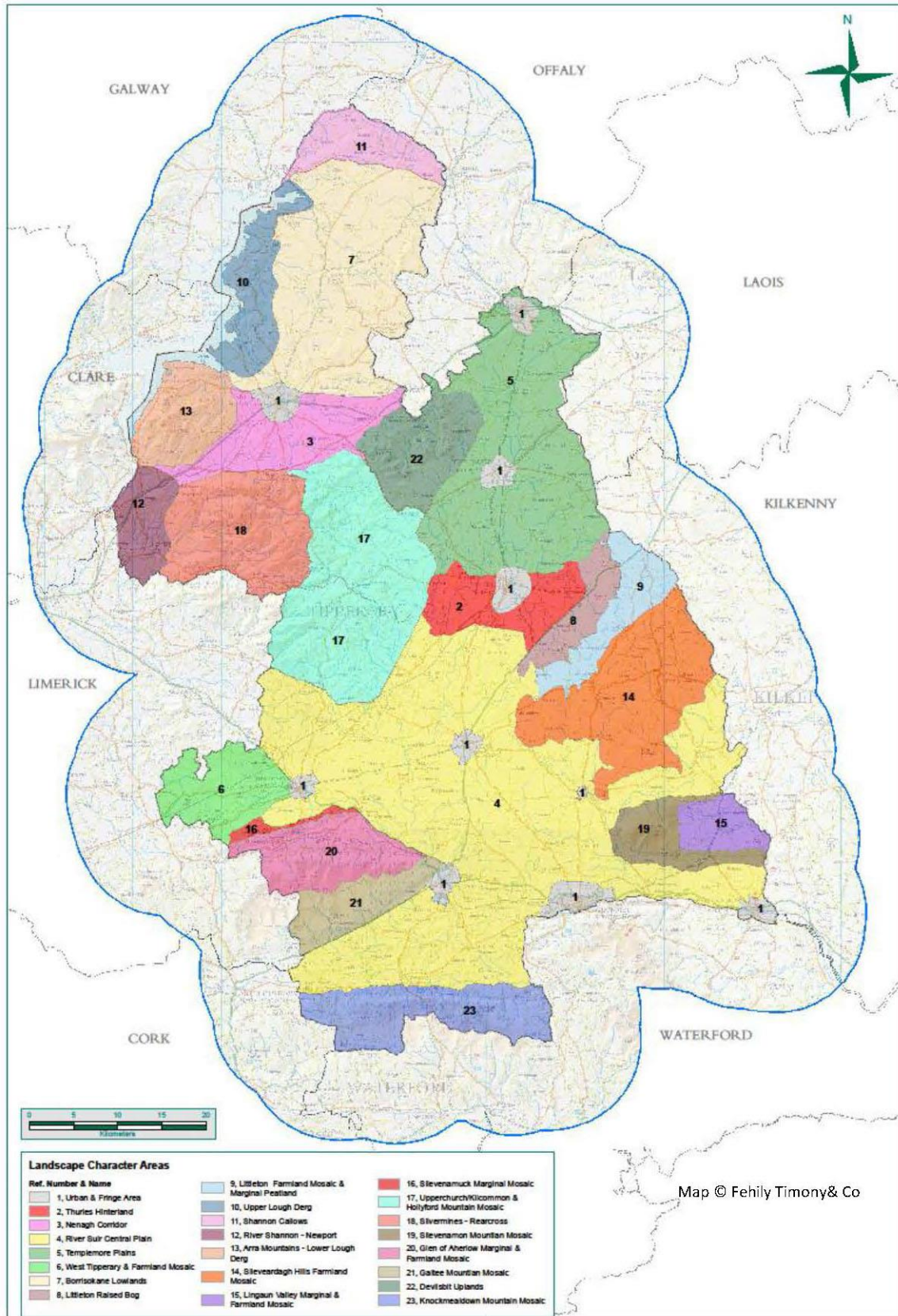
The other main LCAS in Tipperary within the study area include LCA 10 Upper Lough Derg, which lies to the northeast of LCA 13, approximately 16.9 kilometres from the nearest turbine. This LCA extends along Lough Derg from Youghal Bay to the east of Portumna, and extending inland to the lower contours of the drumlin belt. Landcover is predominantly pasture but there is a higher percentage of land under tillage. While deciduous woodland is notable along the lake shore, upland or rough grazing and occasional coniferous plantations are visible in the elevated parts of the drumlins further inland. This LCA is described as Class 3 – Sensitive – on a scale of 1 to 5.

To the south of Killaloe/Ballina, approximately 8.6 kilometres from the nearest turbine, the LCA 12 River Shannon-Newport LCA is described as a low lying area extending south from the Arra Mountains and east from the River Shannon towards the Silvermines foothills. This is described as an area with flat areas and undulating hills, with considerable areas of settlement. The areas around Lough Derg and Newport are considered scenic. The area is described as Class 4 (Transitional Vulnerability) sensitivity. To the southeast, approximately 11.7 kilometres southeast of the proposed development, LCA 18 Silvermines-Rearcross Uplands, contain a considerable extent of scenic uplands including the Silvermine mountains and Keeper's Hill, with extensive views to the River Shannon and the northern lowlands near Nenagh.

It should be noted that two permitted wind farms, Bunkiwalta, and Castlewaller, are located to the southeast, south and east of Keeper's Hill.

The LCAs in Co. Tipperary are illustrated in Figure 12.8 below.

Figure 12-8: Tipperary LCAs:





## Galway County Development Plan 2015-2021

### Landscape Designations and Scenic Routes

A small proportion of County Galway, consisting of the southern foothills of the Slieve Aughty mountains, and the settlement of Woodford and Whitegate, lies within a 30 kilometre radius of the proposed development. The Galway Landscape Character Assessment indicates that the Landscape sensitivity of this area is Class 2 Medium, (out of a possible rating of 1-5, the highest being 5) and the value is Moderate, out of a possible rating of 1-4).

There are a number of focal points and views in the area, Views 10,11 and 28 in the Development Plan. However, these are all relating to view of the Slieve Aughty mountains, which lie to the north. These views are therefore not in the direction of the proposed development.

## Limerick County Development Plan 2010-2016 (as varied and extended)

Some of the northern part of County Limerick falls within the wider Landscape and Visual Study Area., between approximately 10-30 kilometres from the proposed development. This includes land including and around Limerick City, as well as areas along the Shannon Estuary, from Pallaskenry east to the Slieve Feilim mountains.

### Landscape Character and Designations

The Shannon Coastal Zone LCA comprises a large area of northern Limerick and is defined by the estuary itself, and gradually rising ground to the south, leading to the agricultural lands and western hills to the south. The landscape is described as enclosed farmland. The Slieve Feilim Uplands LCA lies to the southwest of the Study Area, approximately 19 kilometres from the nearest turbine) and these are described as the most dominant feature in this part of the County, due to the relatively low lying areas around them. They are more rounded in shape and pastoral in character with well development field boundaries.

There is one protected view located within the study area, east of the Slieve Feilim mountains, as shown on Figure 12.3. This is approximately 23.1 kilometres from the nearest turbine.

### 12.2.1.2 *Wind Energy Guidelines (2006) and draft revised version (2019)*

The Department of the Environment Wind Energy Guidelines (2006) provides guidelines on aesthetic considerations, including the siting and design of windfarms. It is also noted that in December 2019, a draft revised version of the Wind Energy Development Guidelines was published. These have been reviewed and the siting and design advice referred to below remains the same as the 2006 Guidelines, which is set out below.

The Guidelines state that landscape character types (LCTs) provide a useful basis for practical application of siting and design guidelines in relation to wind energy developments. Siting and design guidelines are set out for six Landscape Character Types which represent most of the landscape types in the country, which include:

- Mountain Moorland
- Hilly and Flat Farmland
- Flat Peatland
- Transitional Marginal Land

- Urban/Industrial
- Coast

The Guidelines note that it is common for a wind energy development to be located in one landscape character type and visible from another. This requires the entire visual unit to be considered, and to decide which landscape character area more strongly influences the approach.

For each of these character types listed above, guidance is given on the location, spatial extent and scale, cumulative effect, spacing, layout and height of the turbines.

The Clare WES notes that the Slieve Bernagh Uplands Strategic Area, in which the site is located, is best characterised as Mountain Moorland.

### Mountain Moorland

Mountain Moorland is described as having the following key characteristics:

- Peaked, ridged or rolling mountains and upland with steep sides or gently formed valleys
- Generally unenclosed
- Landcover comprising blanket bog, a mottling of heather, wild grasses and some rush in wet flushes and
- A landscape type of relative remoteness and often comprising pristine, unspoilt and remote landscapes.

The site and surrounding landscape displays many of the above characteristics. However it is evident that the landcover on the site itself is currently mainly comprised of coniferous forestry which may previously have been moorland (including areas which have been felled). Surrounding areas of peatland are evident on aerial imagery. It is considered the most appropriate of the landscape character types for the majority of the site.

### Siting and Design Guidance for Mountain Moorland:

- **Location:** (Defined as elevation and position of the wind energy development). *It may be acceptable to locate wind energy development on ridges and peaks. They may also be appropriate in certain instances, in a saddle between two peaks where they will be partially contained or 'framed'. A third acceptable location is lower down on sweeping mountainsides.*
- **Spatial Extent:** (This is defined as the area covered by a wind energy development, reflecting the number of turbines and their spacing.) *Given the typical extensive areas of continuous unenclosed ground, larger wind energy development can generally be accommodated because they correspond in terms of scale. However the spatial extent of a wind energy development would need to be reduced where a suggestion of smaller scale is provided by a nearby landscape features.*
- **Spacing:** *All spacing options are usually acceptable. Where a wind energy development is clearly visible on a crest of ridge there is considerable scope to vary the rhythm, though on simple ridges, regular spacing may be more appropriate. On sweeping and continuously even area of mountain moorland or upland plateaux, regular spacing may be most desirable.*

- **Layout:** All layout options are usually acceptable. However the best solutions would either be a random layout, and clustered where located on hills and ridges, or a grid layout on sweeping and continuously even area of moorland or plateaux. Where a wind energy development is close to a linear element, such as a river, road or long escarpment, a corresponding linear layout or staggered line might be most desirable.
- **Height:** There would be generally be no height restrictions on mountain moorlands as the scale of landscape is so great. However, shorter turbines may be more appropriate where they are located on small peaks and outcrops in order to maintain an appropriate scale. Profile, whether even or uneven, is dependent on topography: the more rugged and undulating (e.g. knolls and crags) the more uneven it will be. The profile of the wind energy development should not necessarily run in parallel to that of the topography.
- **Cumulative Effect:** The open expanse of such landscapes can absorb a number of wind energy developments, depending on their proximity. The cumulative impact will also depend on the actual visual complexity of landform, whether steeply rolling, undulating or gently sweeping. The more varied and undulating an area is topographically, the greater its ability to absorb and screen wind energy developments. The aesthetic effect of wind energy developments in these landscapes is acceptable where each one is discrete, standing in relative isolation.

#### Summary of Relevant Policy – Co. Clare

- The Clare County Development Plan designated the area as a Settled Landscape. Though a Heritage Landscape lies approximately 1.7 kilometres to the east, no part of the site is located in a Heritage Landscape.
- There are a number of scenic routes within 10 kilometres of the proposed development including the local road an East Clare Way to the north of the site, and the R463 between Killaloe to outside Ogonelloe and Tuamgraney to Mountshannon.
- The site is located within the LCA 8 Sliabh Bernagh Uplands. The Landscape Character Assessment notes the prominence of Sliabh Bernagh to the south (and west) of Lough Derg. Assessment notes that the upper slopes of the uplands are generally remote, and rarely enclosed, with sparse communications and the access roads around Sliabh Bernagh consisting of forestry roads. Recommendations include proactive management of wind farms.
- The windfarm site is located within a Strategic Area in the Clare WES (Wind Energy Strategy). The WES considers the LCA to have and Low to Medium sensitivity to wind energy developments, and capacity for Large (12-25 turbine) windfarms in this area. The areas of the LCA which are most suitable for medium to large wind energy developments, and more robust are the north and north west slopes of the mountain. This is where the proposed development is situated.

#### 12.2.2 Receiving Environment – Landscape and Visual Context

In this section, the site is described under several headings including landform and landcover and settlement pattern. In two sections, the wider landscape is described and then the proposed

development site itself including the immediate vicinity is described in order to fully set the context. The proposed development is located in the Slieve Bernagh uplands, in north-eastern County Clare. The Slieve Bernagh range lie to the southwest of Lough Derg, the largest lake on the River Shannon, in Co. Clare. The nearest settlements are the town of Killaloe/Ballina lies to the southeast, Bodyke to the north and Broadford to the southwest. The proposed development site is located in the north-western part of the Slieve Bernagh uplands. There are several peaks over 500 metres, and these appear rounded and undulating from a distance, as illustrated below:

**Plate 12.1: The Slieve Bernagh hills seen from Ballina, Co. Tipperary**



#### **12.2.2.1** *Wider Landscape - Topography and drainage*

The Slieve Bernagh uplands drain to both Lough Derg and lower stretches of the River Shannon to the east, and to several lakes including Doon Lough/ Lough An Dúin to the west.

The highest peaks are Moylussa (523m with north and south summits) and Cragnamurragh (526) to the west. South of these lies Glengalliagh mountain. A small peak, Croaghanower, lies to the east, while Ballykildea and Feenlea lie to the south-east, towards Lough Derg. There are a number of smaller peaks to the east and west. To the east of the Slieve Bernagh Hills, the land slopes towards Lough Derg. Across Lough Derg the Arra Mountains rise to a height of approximately 450 metres OD at Tountinna.

To the south of the Sliabh Bernagh, a narrow river valley runs between Broadford and Bridgetown and a ridge of higher ground to the southwest while, low lying land lies along the banks of the River Shannon, much of which is less than 100 metres in elevation. To the east of the Sliabh Bernagh uplands, the land is lower in elevation with some drumlins while to the north the land is generally low lying with scattered lakes and settlements. The lands to the north in the vicinity of Tulla are generally less than 100 metres in elevation, with drumlins, and the elevation increases north of Feakle where the Slieve Aughty range runs east-west on both sides of Lough Graney, from east of Crusheen. Further north, the Slieve Aughtys extend into south Co Galway.

#### **12.2.2.2** *Wider Landscape - Land cover*

Land cover includes vegetation, built form, cultural heritage and settlements in the landscape. The Slieve Bernagh hills are partly forested with large areas of coniferous forestry, particularly to the



north, northwest and east of the uplands, while the ridges and peaks display partly unenclosed moorland such as Moylussa to the east. Beyond the conifers on the lower slopes of the hills, patches of moorland are also found at lower levels, interspersed with areas of farmland. The southern slopes of the uplands are more open and unforested with large areas of moorland, with smaller areas of coniferous forestry are evident on the slopes of Glengalliagh and Ballykildea. The Coillte forest recreation area at Ballycuggeran to the east of the site, includes walking trails which include a trail around Feenlea and a trail to the summit of Moylussa. In general, agricultural lands and small settlements are found on the land below 100 metres in elevation, although there are scattered pockets of farmland at elevations between 100 and 200 metres, mainly to the south of the uplands. -

**Plate 12.2: Forestry, moorland and agricultural lands on the eastern slopes of Sliabh Bernagh seen from the trail to Moylussa**



**Plate 12.3: Open moorland near the summit of Moylussa (east of the site)**



**Plate 12.4: Agricultural lands, coniferous forestry, and moorland on the southern slopes of Slieve Bernagh seen from the southwest.**



Lough Derg, a significant waterbody on the River Shannon, lies to the east – the shoreline is approximately 4.3 kilometres east of the nearest turbine and is an important feature of this regions' landscape. It is an important element of the Shannon waterway and there are several settlements along the lakeshore including Killaloe, Scarriff, Mountshannon on the western shore and Ballina and Dromineer to the east. Much of the lakeshore east of the site is indented and wooded coastline. The wooded islands in the lake are also a feature of the landscape, in particular Inis Cealtra or Holy Island is an important monastic site with cultural heritage and amenity importance.

**Plate 12.5: Eastern shore of Lough Derg with wooded areas, agricultural lands and built form visible**



From parts of the lakeshore, and the lake itself, there are views of the Arra Mountains and the Slieve Bernagh hills, including from Inis Cealtra/Holy Island, and the harbour at Mountshannon.



### Plate 12.6: Inis Cealtra – island with monastic ruins with Lough Derg and Sliabh Bernagh hills in background



To the south of the Slieve Bernagh Hills, the landcover is mainly agricultural fields with some patches of forestry on the lower slope, and small settlements including Broadford, Kilbane and Bridgetown in the Broadford/Glenomra river valley. West of the Sliabh Bernagh hills is mainly agricultural land with a number of small settlements including O' Callaghansmills and Kilkishen, lakes, including Lough An Dúin and Lough Cullaunyheeda, and a number of bogs including areas of raised bog around Lough an Dúin.

#### 12.2.2.3 *Land Use – Wider Landscape*

In the wider landscape, agriculture and forestry are key land uses. As well as in the Sliabh Bernagh hills, the Slieve Aughty uplands in Co. Clare and south Co Galway are a considerable area of coniferous forestry. To the east of the site, Lough Derg is considered an important amenity and a location for recreation, amenity, and water based activities. The settlements along the lake have a strong connection to the water. There are with several landing points along the Co. Clare shoreline including Mountshannon, Scarriff, and Killaloe, as well as a number of access points to the lake in between. On the opposite side of the lake in Co. Tipperary, there are also a number of areas where access is provided to the lake, including the settlements of Ballina, Garrykennedy and Dromineer. The largest towns in the wider landscape include Ballina/Killaloe, with Ennis some 25 kilometres to the west, and Limerick some 17 kilometres to the south.

#### 12.2.2.4 *Wider Landscape - Settlement and Transport*

The Slieve Bernagh uplands are relatively remote and isolated. Regional roads run to the north, south east and west, with narrow local roads accessing the site. To the east of the Slieve Bernagh hills, the R463 runs along the Lough Derg shoreline, with a number of local roads leading towards the site. This road is a Scenic Route from west of Ogonelloe to Killaloe, with extensive views to the lake and Arra Mountains with some views to the Slieve Bernagh hills. The R352 continues north and then west, running north of the site through Bodyke village and towards Tulla and Ennis with good views towards the Slieve Bernagh hills. West of the site, the R465 runs south from Bodyke to Broadford, while the R466 runs south of the uplands, from Broadford to Bridgetown and Killaloe. However to the north of this road, a route traverses the uplands, a local road and East Clare Way runs between the peaks of Glenvagalliagh and Lackareagh. from Broadford to Killaloe.

### 12.2.2.5 *Wider Landscape - Cultural Heritage, Tourism, Recreation and Amenity*

Lough Derg itself, as mentioned above, is a destination for recreation and amenity as well as a location for areas of cultural heritage importance.

Elements in the wider landscape which are relevant in terms of cultural heritage include the monastic site of Inis Cealtra/Holy Island, which is illustrated in Plate 12.5 above. This lies approximately 9.6 kilometres northeast of the nearest turbine. This early Christian monastic site was founded by St Caimín in the early 7<sup>th</sup> century, according to displays on the island. There are the remains of several churches and a round tower in good condition. The island is accessible from Holy Island pier, or from a boat hire at Mountshannon harbour. It is currently on the Tentative list of UNESCO World Heritage Sites. Other locations relevant to cultural heritage in the wider landscape which are also relevant from a tourism or amenity perspective include the area around Lough Derg which has cultural associations (the Graves of the Leinster Men on Tountinna in the Arra Mountains relates to a legend).

#### Plate 12.7: View from the start of the Graves of the Leinstermen looped walk to Arra Mountains



Sites of cultural heritage importance in the wider landscape to the west include Quin Abbey, Craggaunowen Castle and heritage park. (Craggaunowen heritage park is located in a wooded area which would screen views, but it located outside the ZTV). Lough Cutra estate in Co. Galway is approximately 24 kilometres from the nearest turbine but is outside the ZTV. To the Southwest, the Silvermines and Keeper's hill are popular recreation areas, as is the Lough Graney area to the northwest. The Landscape Character Assessment also refers to the historic importance of the Broadford Valley, which lies between the Slieve Bernagh and Broadford hills, as it was a strategic route where access was controlled by Glenomra Castle, which was located at Ballyquin More.

#### Scenic Routes

There are several scenic routes, both along the east and western shores of the lake, with several viewing points, as well as several slipways where access to the lake is provided. These are illustrated on Figure 12.3. Along the western shore, the R463 between Mountshannon and Tuamgraney has views to the Slieve Bernagh and Arra Mountains and some views to Lough Derg, with the more open views approximately 2 kilometres south of Lough Derg. Plate 12.8 shows the view of the lake and hills from Holy Island pier, off the R463.

**Plate 12.8: View of Lough Derg with Sliabh Bernagh hills in background**



The R463 from west of Ogonelloe to Killaloe is also a scenic route, with extensive views to the east and south over Lough Derg and the Arra Mountains. There are also some views to the Slieve Bernagh Hills. Plate 12.9 is taken from a layby/viewing area:

**Plate 12.9: View of Lough Derg looking from R463 looking northeast (away from site)**



On the opposite lakeshore, the R494 is a Scenic Route (between Ballina and Portroe) and is an elevated road with extensive views over Lough Derg and the Slieve Bernagh Hills.



**Plates 12.10 & 12.11 – View of Lough Derg with Sliabh Bernagh hills in background from R494  
Scenic Route in Co. Tipperary**



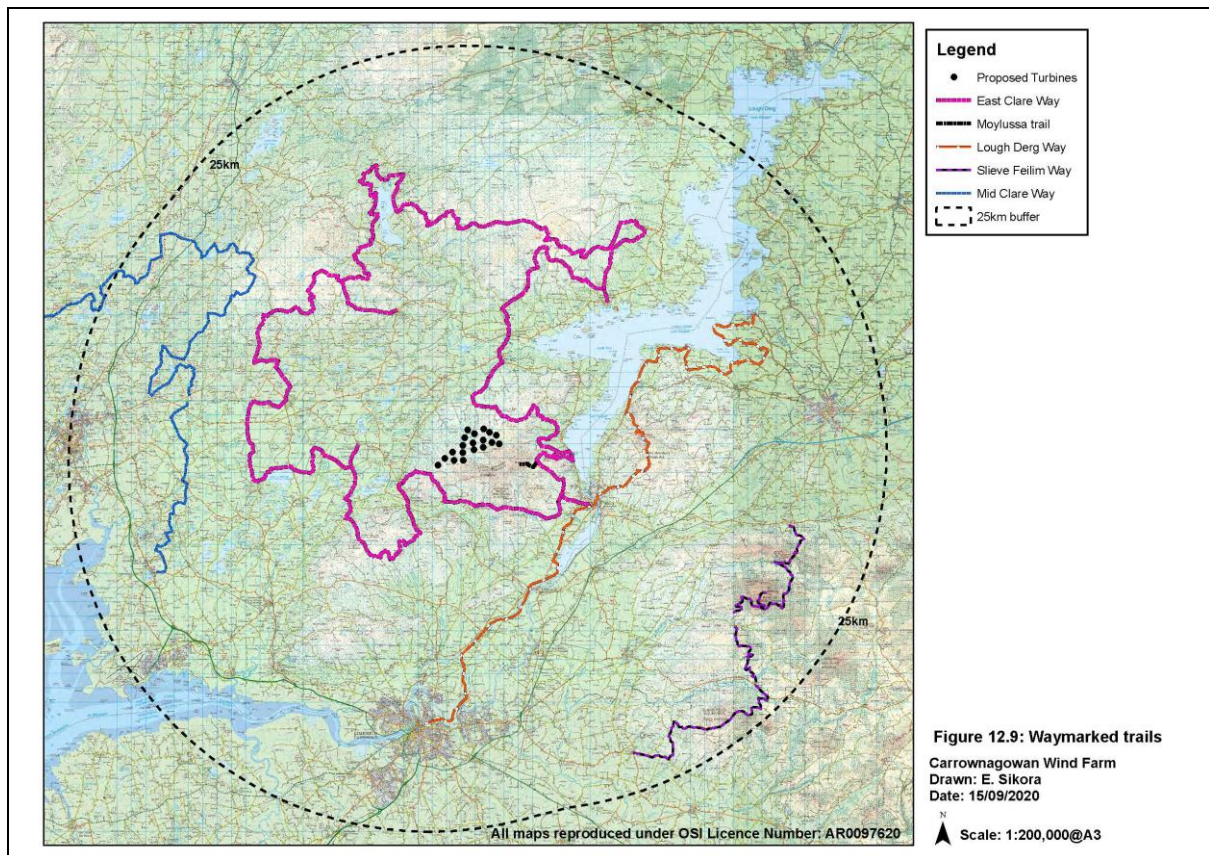
### **Recreation Trails**

There are a number of waymarked trails and routes in the area, which include the East Clare Way which runs to the east, south and north west of the site as well as further west in the wider landscape (see Figure 12.9 in Volume III with a reduced version included here). The 180 kilometre trail begins in Killaloe and Crag Wood, and runs west to Broadford, north to Tulla and Feakle, west to Scarriff and south to Crag Wood. A recreation area at Ballycuggeran which includes a trail to Moylussa is located approximately 2.7 kilometres, though much of this is among coniferous forestry, with some open moorland on the Moylussa summit.

To the southeast of the site, approximately 8.6 kilometres at its closest point, there are several trails known as the 12 o' clock hills looped walks which provide access to the hills of Knockanuarha. These are mainly trails in coniferous woodland.

Other waymarked trails include the Lough Derg Way and cycle route, and Lough Derg drive in Co. Tipperary and the Arra Mountains Loop. The Lough Derg Way extends 68 kilometres from Limerick City to Dromineer in Co. Tipperary, and passes through Clonlara and O' Briensbridge to the south of the site, and through Killaloe and north through the Arra Mountains to Castletown, and Dromineer, on the eastern shore of Lough Derg. At its closest point, the trail is located approximately 7.7 kilometres from the nearest turbine.

Figure 12-9: : Trails and Recreation Areas (reduced size)



Several photomontages have been included from the East Clare Way and Lough Derg Way (see Section 12.3) where there are views towards the site.

#### 12.2.2.6 Proposed Development Site and immediate vicinity

The site and immediate vicinity are described below.

#### 12.2.2.7 Topography and drainage –

The site of the proposed development, which is on the lower ground ranging from approximately 150-350 metres OD, on the north-western slopes of the Sliabh Bernagh uplands. The area is drained by the Coumnagun, Carrownagowan and Inchalughoge rivers which drain to the southwest from the peaks of Moylussa and Cragnamurragh, both over 500m OD. These river valleys are now partly forested, but the relatively steep topography is evident as seen in Plates 12.12 and 12.13 below:



**Plates 12.12 and 12.13: Valleys of the Coumnagun and Carrownagowan rivers on the site**



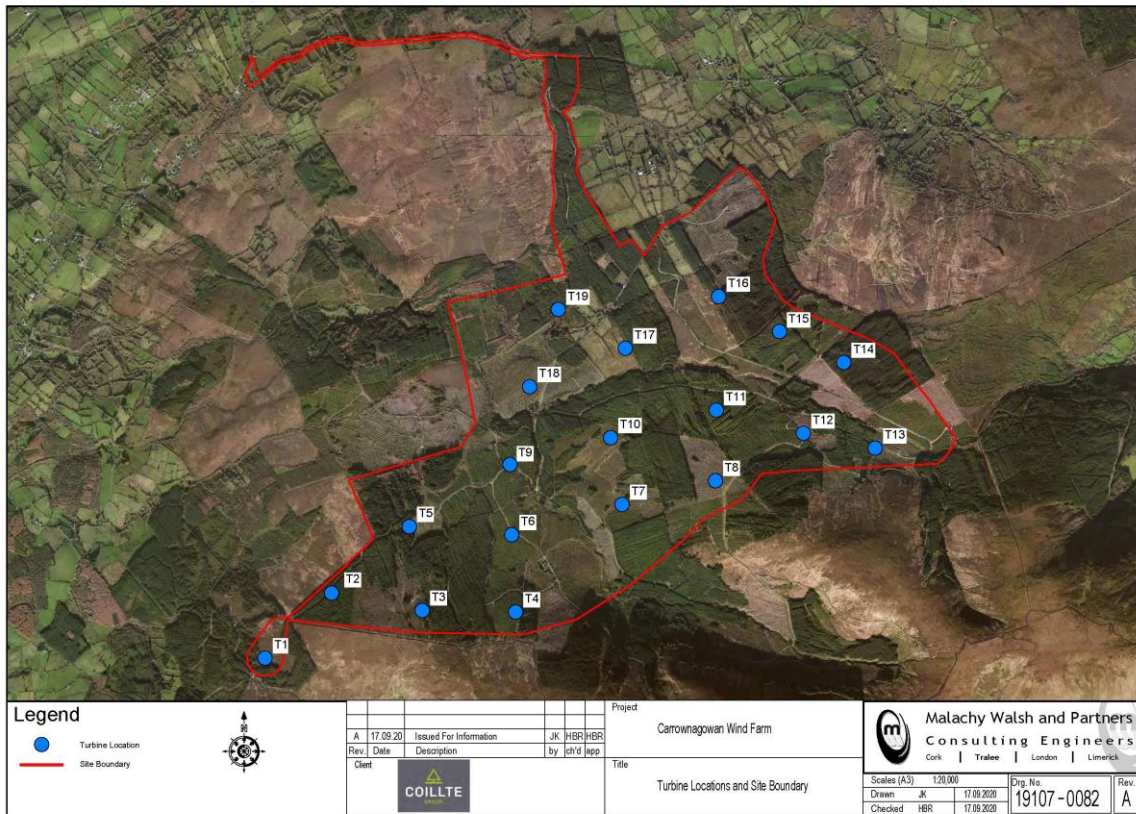
The steeply sloping hills are generally open and unenclosed, in contrast with the lower areas which are largely forested as shown in Plate 12.14 below:

**Plates 12.14: The steeply sloping ridge of hills rise south of the site with coniferous forestry on the lower ground.**



12.2.2.8 Site and immediate vicinity- Land Cover

Figure 12-10: Aerial image of site, turbine locations and immediate context



The land cover on the site is primarily composed of coniferous forestry, at various stages of development, including areas which have been clear felled, recently planted and mature plantations. The site is traversed by a network of forest tracks, such as those shown below in Plate 12.15 and 12.16. As noted above, a number of rivers drain the site. The land cover of the adjacent ridge of hills (including Moylussa and Cragnamurragh) south of the site is open moorland, which contrasts with the coniferous forestry, forms part of the Slieve Bernagh Bog SAC and described as blanket peatland with areas of wet and dry heath.



**Plate 12.15 Mature forestry on site****Plate 12.16 Young plantations, more mature plantations and clear felled areas on site**

#### **12.2.2.9** *Site and immediate vicinity - Land Use*

The land use on the site is a coniferous forestry plantation. Part of the access road is a public road. Adjacent land uses include agriculture, and several scattered dwellings are located along some of the local roads surrounding the site to the northeast and southwest. Figure 12.11 illustrates the open unenclosed moorland to the southeast of the site (on the summit of Moylussa) as well as to the southwest. Small fields with occasional buildings are seen to the northeast of the site, as well as to the west in Figure 12.11.

### 12.2.2.10 *Site and immediate vicinity - Settlement and Transport*

The immediate environs of the site are sparsely populated. The site entrance lies off the local road and the East Clare Way north of the site, which runs from the townland of Rahena near Lough Derg, to Knockbrack, south of Bodyke. This road is a narrow road with some sparsely scattered settlement and farms along the road, mainly east of the crossroads at Caherhurly and further east near Ballybroghan. There are some open views to the north over the lower land, and occasional open views towards the site, with roadside hedgerows and screening reducing views.

**Plate 12.17&12.18: Roadside screening varies at Caherhurly**



The road becomes more open on the higher ground with little roadside vegetation, and extensive views to the surrounding countryside. Trees and vegetation at Ballybroughan provide screening and reduce open views.

Other areas of scattered settlement include several dwellings located on local roads off the R465 at Knockbrack, Killuran More and Drummin as well as along the R465 road itself. Screening varies but there are relatively few open views from the R465 but some views from elevated, local roads such as in Killluran More. Some settlement is also located to the south on the local road near Kilbane (but this settlement and surrounds are mainly outside the ZTV).

To the east, a number of roads leave the R463 near Annacarriga, also which are part of the East Clare Way.

The closest settlement to the site is Bodyke, which lies approximately 2.4 kilometres northwest of the site boundary, and the eastern part of Bodyke has open views towards the site. The settlement of Broadford lies approximately 2.5 kilometres southwest of the site boundary, and is located in a hollow, so it does not have potential views of the proposed development. (It should be noted that the distance from these settlements to the nearest turbines is 3.9 kilometres and 3.2 kilometres, respectively.)

### 12.2.2.11 *Cultural Heritage, Recreation and Amenity*

The Landscape Character Assessment of Co. Clare refers to the lack of settlement on the upper slopes of the Sliabh Bernagh, due to the unfavourable topography. Historic maps (Cassini and 6 inch maps) and indicate that the site of the proposed development was previously open, unenclosed land, with small fields and some settlement only found to the north of the site, near the local road at Caherhurly. Small fields and settlement are also indicated on the slopes above the village of Broadford.



The East Clare Way passes in close proximity to the north, east and south of the site and runs along local roads, many of which are relatively narrow. The trail runs immediately north of the site along the local road at Caherhurly, some 1.5m kilometres north of the nearest turbine at its closest point. To the southwest, the trail runs approximately 0.8 kilometres from The nearest turbine. Visibility is intermittent and views are reduced by forestry plantations.

#### **12.2.2.12**      *Summary of Landscape Character*

- The site itself, on the northern slopes of the Sliabh Bernagh hills, is characterised by steep terrain on the northern slopes of Cragnamurragh, Moylussa and Coumnagun. These enclose a lower area, and is mainly covered in coniferous plantation with forestry tracks, at varying stages of maturity, which is a working landscape. The character of the site itself is relatively enclosed by the forestry, with some areas having views to surrounding landscape. The site itself has few distinctive elements which are evident, as forestry covers the majority of the ground. Areas of open moorland mainly on the higher ground, and farmland on the lower ground, are found adjacent to the site.
- The settlement patterns in the vicinity of the site are relatively sparse with some scattered dwellings, mainly to the northeast and southwest. Some of these have views of the site but many are enclosed by nearby coniferous plantations.
- However the wider landscape displays several areas of distinct character - other parts of the Sliabh Bernagh hills close to the site are relatively remote and sparsely settled, and to the east the open and expansive moorland around Moylussa is a distinctive area, and, in contrast to the enclosed landscape of the forestry, and has extensive views over the landscape including views towards Lough Derg and the lower River Shannon. This is noted in the Landscape Character Assessment as a key characteristic of the Sliabh Bernagh LCA.
- The Slieve Bernagh hills are a distinctive feature of the area, particularly from the north and east including from the Lough Derg shoreline and particularly from the eastern shore in Co. Tipperary, parts of Lough Derg shoreline north of the site and to the east. They are also a distinctive feature from areas to the north including Bodyke and Feakle.
- The landscape character around the shore of Lough Derg (east of the site) is also distinctive, highly scenic, with views along the shoreline as well as to the Slieve Bernagh Hills, with some remarkable views over the lake and to the Arra Mountains to the east.
- Features of the landscape to the north and north east, towards Tulla and Feakle, include a flatter and relatively open drumlin landscape. To the south the Broadford Hills lie north of the Shannon.

#### **12.2.2.13**      *Summary of Landscape Values*

The GLVIA Guidelines sets out the methodology for assigning landscape sensitivity. This is based on combining judgements on landscape value, and landscape susceptibility which relates to the type of development proposed. Landscape susceptibility is addressed in Section 12.3, along with the assessment of effects.

Landscape values are derived from both indications of value as seen in national and local policy, as well as other indications that a landscape or landscape element, is valued. These values can further

be categorised in two ways – values which should be conserved, and those that provide opportunity for enhancement.

*Landscape value*, as referred to above, can be identified by the presence of landscape designations or policies which indicate particular values, either on a national or local level. These include international designations (such as UNESCO World Heritage sites) national designations, and local designations such as scenic routes, scenic views or amenity designations which are included in County Development Plans. Important tourism, cultural heritage or recreational areas are also indicative of value. In addition, where landscapes do not have designations, a number of criteria are used to assess the value of a landscape. For undesignated landscape in the vicinity of the site, these criteria include:

- Landscape Quality/Condition
- Cultural Heritage/Conservation value
- Aesthetic/Scenic Quality
- Rarity or Representativeness
- Public Accessibility and Recreation Value

#### **Landscape Value – Site and immediate vicinity**

The landscape value of the actual site of the proposed development, an area of coniferous forestry, is considered **Low**. The site of the proposed wind farm itself is not covered by any landscape or visual designations.

The value the lands in the immediate vicinity of the site are considered to range from **Medium to High**. A scenic route is indicated north of the site, approximately 1.5 kilometres north of the nearest turbine (T18) and approximately 850 metres from the East Clare Way to the southwest of the site to T1, and areas to the north of the site are considered Medium value. East of the site, the peak of Moylussa and the open moorland to the east and south with extensive views. Further east, from the eastern slope of Moylussa towards Lough Derg, the land is designated the Heritage Landscape, which slopes towards the shores of Lough Derg, and this landscape contains a number of designations and is a scenic area with long distance views and of High value.

#### **Landscape Value – Wider Landscape**

The conservation values indicate those aspects of the receiving environment which are sensitive and could be negatively impacted on by the proposed development. These values whilst generally of local significance form the potential landscape and visual constraints to the proposed development. The enhancement values reflect change that is already occurring in the landscape and reflects local policy. These are as follows:

##### *Conservation Values:*

- Scenic Routes and Protected Views –the key elements of the views from such locations in the vicinity of the proposed development should be retained
- Heritage landscapes – Key characteristics of the heritage landscapes should not be adversely affected.

- Key characteristics of the landscape to the east of the site in the Sliabh Bernagh LCA includes the open and extensive moorland which has extensive views.

Enhancement Values:

- Clare County Development Plan Policy indicates the site is in a Strategic Area for Windfarms as per the Wind Energy Strategy which is also based on the Landscape Character Assessment

### 12.2.3 Off Site Elements – Receiving Environment

The proposed development also includes three areas of forestry replanting which are to be carried out off site. In addition, the Grid Connection Route is included, which runs from the site to Ardnacrusha, Co. Clare.

Offsite replanting is proposed at Ballard, Co. Wicklow, Cooraclare, Co. Clare, and at Trillickacurry, Co. Longford. These sites all have Technical Approval for forestry planting.

Trillickacurry, Co. Longford: This site is located approximately 3.6 kilometres south of Longford Town, in a rural location. The receiving environment consists of a number of fields accessed by a cul-de-sac road, which are currently open fields divided by hedgerows. The eastern boundary of the replanting lands borders an area of semi-natural vegetation which surrounds a large area of peatland, which is partly cutover. There are several small blocks of coniferous plantation in the vicinity, and a number of houses along the road. The houses along the eastern end of the cul-de-sac face south where there are some views over grassland with trees in the distance towards a low ridge. The area is not subject to any landscape or visual designations.

#### Ballinaclash, Ballard, Co. Wicklow.

The proposed replanting lands lie approximately 1.3 kilometres west of the village of Ballinaclash, Co. Wicklow. The lands are slightly elevated, on the northeast slopes leading towards the hill to Cushbawn. The area appears to have been clear felled.

The lands are accessed on a minor cul-de-sac road that has very few houses and few visual receptors. The replanting lands slope away to the north from the local road, and there are intermittent views from the road to the hills to the northwest. Mature plantations are visible to the south of the road.

The western part of the site appears to be just within the Wicklow Mountains and Lakeshore Area of Outstanding Natural Beauty, while the eastern part of the replanting lands are within the South East Mountain Lowlands Area of High Amenity, as set out in the Landscape Category Map in Volume 3 of the Wicklow Development Plan.

#### Cooraclare, Co. Clare.

This site is located approximately 2 kilometres west of Cooraclare village in Co. Clare. The site consists of several fields of primarily grassland/wet grassland which are divided by well-defined hedgerows and is located in an open, relatively flat landscape with long distance views. The

landcover of the surrounding landscape is composed of mainly grassland, with some large areas of coniferous forestry west of the site. The Doonbeg river lies south of the proposed replanting site.

One dwelling lies to the south of the proposed replanting lands. The area lies within a 'Settled Landscape' within the Clare County Development Plan and is not close to any scenic routes. The area has very few visual receptors.

### Grid Connection

The proposed Grid connection is an underground cable, and the route is illustrated in Chapter 2, Figure 2.2. It is proposed that the grid connection infrastructure will be installed either directly within the public road network or in the roadside verge along the route.

The proposed grid connection route will follow the road network from the southwest corner of the site and along the local road at Cloongaheen West, heading south and east as far as the village of Kilbane, along a section of the East Clare Way. The route then continues south through the 466 at Ballyquin More, and continues along a local road through the townlands of Leitrim, Fahy More and Aharinaghmore to cross the Regional Road R466. The route continues through the townlands of Coolderry and Ardnacrusha.

The landscape of the proposed route varies from uplands near the site, while south of Kilbane the road follows lower ground to Ardnacrusha. The road varies in width from a narrow, relatively remote road at Cloongaheen West, which is part of the East Clare Way, and runs through a gently undulating landscape with views to the Slieve Bernagh Hills. Beyond Kilbane the route runs through a valley towards the R466, and joins the local road to the south of this where the road becomes more elevated with some long distance views. South of the junction with the R471, the road approaches Ardnacrusha, and there is an increase of dwellings along the road.

There are no specific landscape designations along the road, and no parts of the route are protected views.



**12.2.4 Potential Visual Receptors and Theoretical visibility**

Potential visual receptors include a variety of viewers, both in close proximity to the proposed development and those at some distance as turbines are likely to be seen over a wider area than other types of development. The proposed turbines are the element of the wind farm most likely to cause visual effects. As set out in Table 12.4, sensitive visual receptors are identified by combining viewers of high susceptibility to the proposed change in views, with highly valued viewpoints. Some potentially sensitive receptors are indicated below.

A number of ZTV Maps have been prepared. These include Figure 12.11 Hub Height and Figure 12.12 Tip Height ZTV Map and are included in Volume III at full size, with a reduced size version) included here. The 27 viewpoint locations are included on the ZTV maps. As noted in Section 12.1.3, they do not include surface objects including vegetation and buildings. They are referred to here as they give an indication of areas that may and areas that will not have visibility of the turbines, thus assisting in identifying potential visual receptors and areas where there will be no visibility.

The site of the proposed development and the immediate vicinity is where the visual effects are likely to be the most pronounced within 20 kilometres of the proposed development. The 10 kilometre buffer is indicated by a dashed line on the ZTV, with the 20 and 30 kilometre buffer also indicated.

**Figure 12-11: Hub Height ZTV Map (reduced)**

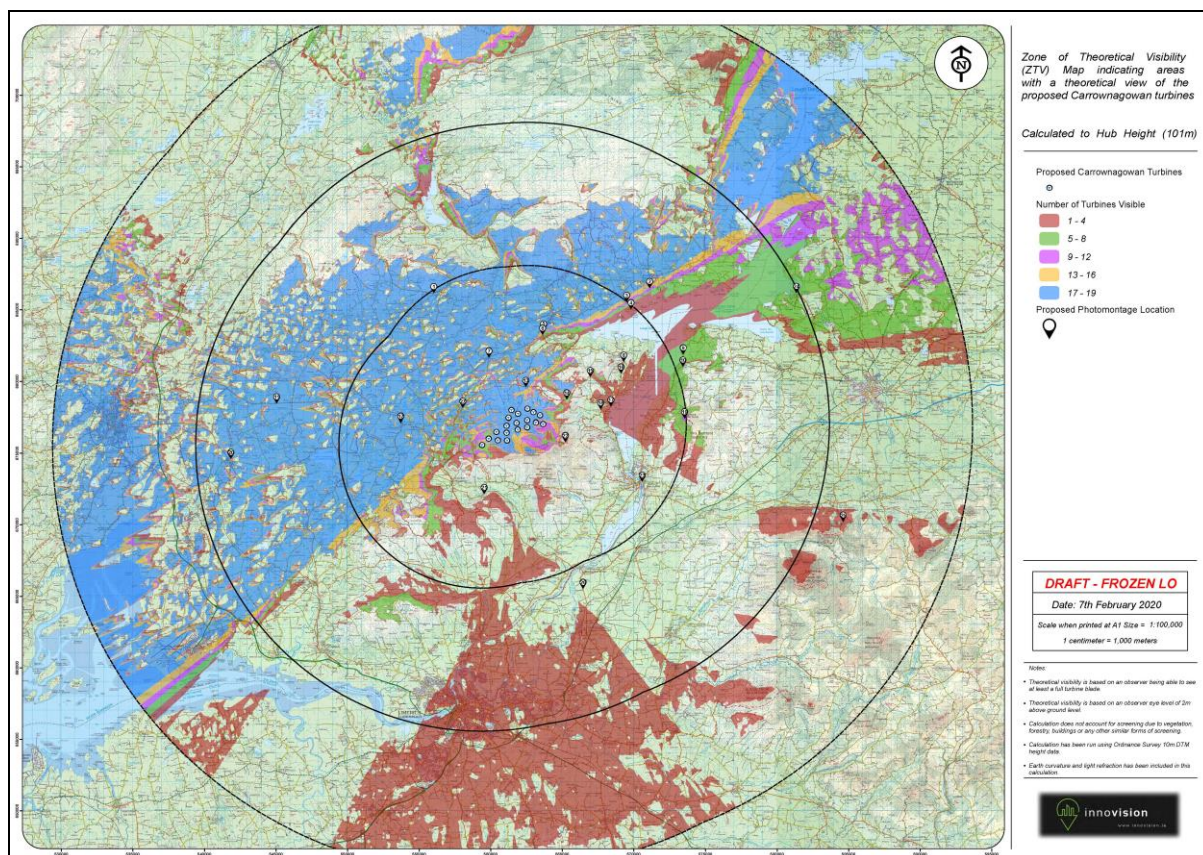
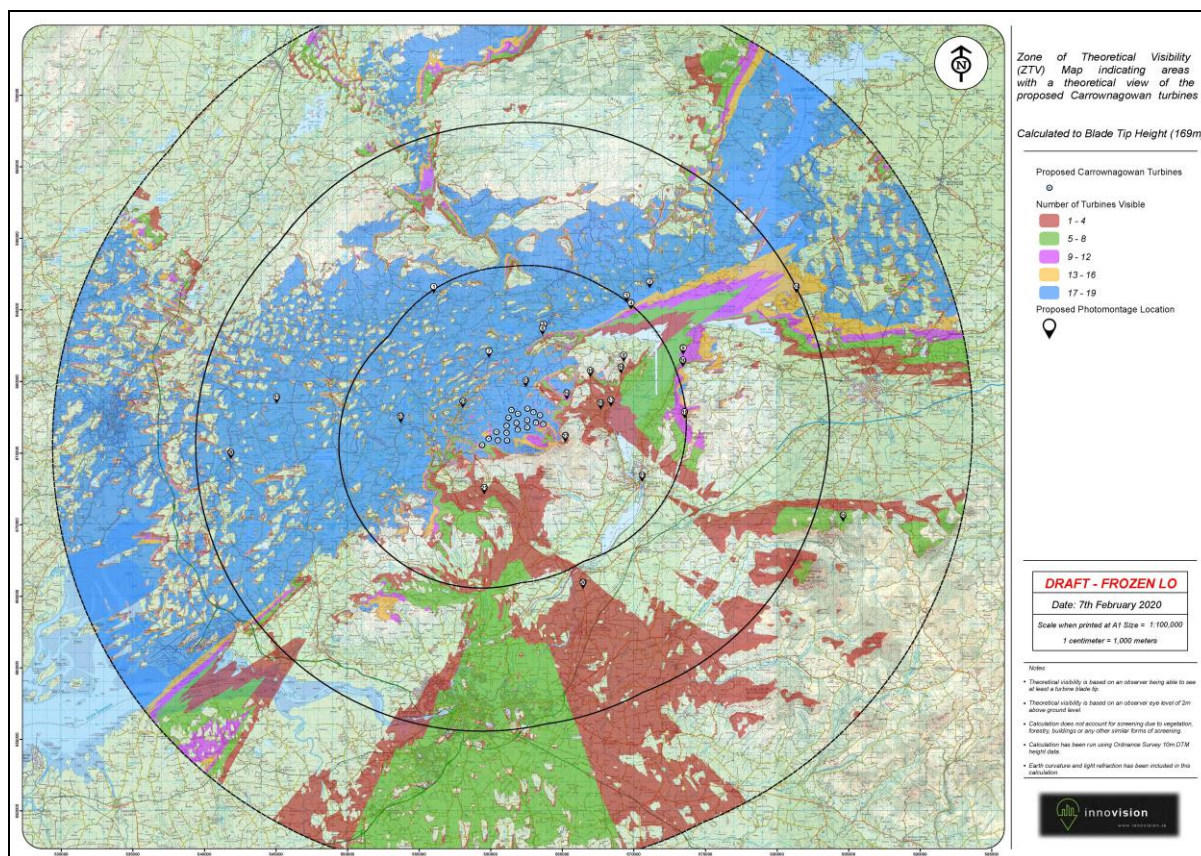




Figure 12-12: Tip Height ZTV Map (reduced)



The two ZTV maps were produced so it is that it is possible to compare them, with the Hub height ZTV showing the areas where the hub and above is visible, but not areas where only blade tips are visible. The tip height ZTV indicates areas where any part of the turbine up to the tip of the blade is visible. As noted in the SNH Guidance, comparing two ZTVs that separately show visibility at blade tip and hub height will indicate where only the turbine blades, or part-blades, may be visible from. This is discussed in Section 12.3.4. The Tip Height ZTV is also useful as areas not showing theoretical visibility can be described as having no potential visibility of any part of the turbine.

### Settlements

Visual receptors to the north include residents of Bodyke and Tuamgraney/Scarriff, Feakle and parts of though some screening by built form is likely. To the west, O' Callaghansmills and Quin have theoretical visibility while to the south, Parteen and Castleconnell, Newport and Limerick show theoretical visibility,

Certain settlements, including Kilbane, Broadford, Ogonelloe, Killaloe/Ballina, O' Briensbridge, Nenagh and the majority of Tulla are will not have visibility of the proposed development as indicated on the ZTV, so no visual effects will occur.

### Residential Receptors – site and immediate vicinity

These include residents in close proximity to the turbines which have open views of the turbines, especially in locations where views are of high value, and viewers engaged in recreation and

focused on the landscape such as those walking or hiking on trails or at recreation areas. There are some residences, though relatively few in number, often in clusters, along the roads immediately east of the site (on and near the R465) and those on minor local roads in more elevated locations east and west of this road which have theoretical visibility.

Receptors also include those along local roads northwest of the site near Caherhurlly wherever there are open views, though the coniferous forestry is likely to restrict visibility to some extent. Visibility is illustrated by Viewpoints 13 (Caherhurlly) which represents views close to the crossroads and school, through high hedgerows and vegetation restrict open views in parts of this road. View 14 (which represents a part of The Bog Road), road with relatively open views where the turbines will be visible. Viewpoint 15 illustrates that there is no visibility from the St Mary's Church, due to screening, and there is only partial visibility of blade tips from the vicinity of the road where the houses are located due to screening. Receptors are also located in Ballyboughan where the ZTV shows visibility, though there is considerable screening in the vicinity of the dwellings.

South and southwest of the site, some potential receptors are located but settlement in this location near Drummin is relatively sparse and visibility is not widespread as indicated by the ZTV .

#### **East of site – R352, R463 Heritage Landscape and Lough Derg**

Other sensitive receptors include those at designated viewpoints, amenity areas, along scenic routes or important tourist or cultural heritage attractions and locations within the Heritage Landscape which lies east and northeast of the site.

East of the site, parts of the Heritage Landscape are likely to have visibility, as well as the summit of Moylussa, where the ZTV indicated blade tips only will be visible) along the shores of parts of Lough Derg and the lake itself. Other locations with potential visibility on the ZTV include parts of the Ballycuggeran Recreation area (though it is mainly forested) and walkers on the East Clare Way. Viewers on Lough Derg are also likely to also have visibility, though the numbers of turbines theoretically visible are lower as one moves south over the lake.

From east of Tuamgraney, the R352 is designated a Scenic Route as far as Killaloe. The majority of this section of road is outside the ZTV, so the turbines will not be visible from much of the route. Areas with no visibility include the viewing point over Lough Derg, and the village of Ogenelloe itself. Visibility is likely to the south of Ogonelloe and Annacarriga along the main road, and also on the local roads in this vicinity, however the ZTV indicates visibility will be mainly of blade tips and between 1-4 turbines.

Locations for potential visual receptors include viewers along Scenic Route V01, which runs along the eastern shore of Lough Derg from Ballina to Portroe, with striking views to the west over Lough Derg and to the Sliabh Bernagh hills as illustrated in Section 12.2.2 in Plate 12.1. Part of this route has theoretical visibility of the turbines and is likely to have visibility, as are viewers from parts of the Arra Mountains including Tountinna where there are also open and panoramic scenic views across the lake towards the Sliabh Bernagh Hills, as well as views north and south along Lough Derg. Other potentially sensitive visual receptors include the eastern shores of Lough Derg, and parts of the Arra Mountains, as well as the shoreline of Lough Derg to the northeast including the settlement of Dromineer though some views are likely to be obscured by built form. Other potentially sensitive receptors include those walking on the recreation trails in this area.

### South and Southeast of site -R465, 466, Glemonra Valley and O' Briensbridge, Limerick

Southeast towards Killaloe and the environs will not have visibility, while there are potential visual receptors south of the site east and west of Broadford, but not from Broadford itself. Some views from visual receptors along the R465 and the roads leading off this, especially those which are elevated, is also likely. The R466 (partly a scenic route) runs along the valley floor and viewers here would have potential visibility of blade tips only, and low numbers of turbines (Aras shaded red).

Theoretical visibility is indicated between O' Briensbridge towards Limerick City, though this road (R525) has few open views, with roadside screening between much of Castleconnell and Montpelier, which is within the ZTV, while south of Castleconnell and outskirts of Limerick, the roadside has many built up elements which restrict open views. There is theoretical visibility from small parts of the Silvermines mountains, near Silvermines village, while there are few potential receptors between O' Briensbridge and Ballina as there is no visibility. Potentially sensitive visual receptors to the south/southeast include those in settlements, cultural heritage locations, and recreation trails.

### North of the site Tulla, Feakle, Scarriff/Tuamgraney and Mountshannon and the R352, R461

The ZTV illustrates that there is theoretical visibility of the proposed turbines to the north and the west which is indicated by the blue shading (theoretical visibility of 17-19 turbines), as far north as Feakle and west almost as far as Tulla, where the landscape is gently undulating with areas of drumlins towards Bodyke, Tulla and Feakle with potential visual receptors in these areas where there are occasional open views. While much of Tulla and the centre of Feakle is not likely to have views, views will be available from the western side of Feakle, while open views are available from the R352 on the eastern approach to Bodyke. Viewers along parts of the R352 from Ennis to Tuamgraney, travelling east, are also likely to have visibility where there are open views towards the site. The most open views are likely to the east of Spencilhill to just east of the Tulla junction on the R352, while views are available from areas approaching Bodyke, intervening topography and vegetation prevent open views over large stretches of the road.

Though the square in Scarriff is likely to have no visibility due to the built form, there are views towards the site along the road between Scarriff and Tuamgraney, (Viewpoint 5. Close to the roundabout at Tuamgraney, however, Viewpoint 6 shows that most of the turbines are increasingly hidden as one moves south.

The R352 between Scarriff and Mountshannon, a scenic route, has theoretical visibility as illustrated in the ZTV, but there is dense roadside screening immediately south of Mountshannon. Approximately 2 kilometres to the south, some open views will allow visibility of the turbines. Further to the south, views will be available, but will vary with roadside screening. The R461 between Feakle north of Scarriff has less visibility of the turbines as there is intervening vegetation along the road, however relatively open views are available in the vicinity of Cooleen Bridge and south of this approaching Scarriff.

Other potentially sensitive visual receptors as well as viewers at cultural heritage locations such as Inis Cealtra/Holy Island, which has views towards the site of the proposed development, over Lough Derg and the nearby shoreline at Mountshannon and Holy Island Pier.

In summary, potentially sensitive receptors to the north include those in settlements, along recreation trails, and on scenic routes and lakeside areas of high scenic value and locations of cultural heritage importance.



West of the site, the ZTV indicates theoretical visibility of high numbers (17-19) turbines which are shaded blue on the ZTV.

#### Less sensitive visual receptors

Less sensitive visual receptors include those driving at high speeds, such as those on the motorways (M18 to the east in Co. Clare, and the M7 to the east in Co. Limerick/Tipperary) as well as those driving on some regional roads where speeds are relatively high. Viewers who have visibility of the turbines but are engaged in work or activities not focussed on the landscape may also be described as of lower sensitivity.

#### 12.2.5 Do-Nothing Scenario

The Do- Nothing Scenario describes the current state of the environment and how this is likely to evolve without the proposed project but having regard to existing and approved projects.

The landscape in the immediate vicinity of the proposed development is currently a commercial coniferous forestry plantation which includes the activities of tree planting, felling and removal of timber. These activities are expected to continue in the future. In the wider landscape, the main land use activities include agriculture, as well as the recreation activities, some of which are associated with Lough Derg, and which are expected to continue.

A number of existing and permitted wind farms are located between 20 and 30 kilometre radius of the proposed development. The areas where the existing and permitted wind farms are theoretically visible are indicated on the Cumulative ZTV Map. Figure 12.13 in Volume III. This is included in Section 12.3.6 at a reduced) format.

This shows theoretical visibility (shaded green) of other turbines (excluding proposed Carrownagowan turbines) in areas including the area to the southeast of the site, from Moylussa to Killaloe and south to O' Briensbridge, and west of Limerick City along the mouth of the Shannon, with some theoretical visibility to the north east of the site near Ballyboughan. Other areas would include the western sides of the Arra Mountains and the lower landscape around an including Nenagh. Theoretical visibility is also shown in much of the Slieve Aughty hills in north of Counties Clare and Galway.

### 12.3 LIKELY SIGNIFICANT EFFECTS

The likely significant effects are assessed at both construction and operational phase, and landscape and visual effects are described separately in Sections 12.3.1 and 12.3.3 (Landscape) and 12.3.2 and 12.3.4 (Visual). Decommissioning phase landscape and visual effects are outlined in Section 12.3.5.

The elements of the proposed development that are most relevant from a Landscape and Visual aspect would be the installation of 19 no. turbines with a tip height of up to 169 metres. In relation to construction and operational landscape and visual effects, and other elements include site structures including substation and wind control building, anemometry mast (met mast), borrow pits to supply stone, and the construction of access tracks and works to existing roads and junctions. The majority of works are on the windfarm site, but some off site works are proposed to the surrounding roads/junctions during the construction stage. Off-site works also include the grid connection and forestry replanting. The likely significance of effects of these are included in Section 12.3.1-12.3.4. A full description of the project elements is included in Chapter 2, section 2.3.

#### 12.3.1 Construction Phase Landscape Effects

##### Proposed Development Site and Immediate vicinity - Landscape Sensitivity

Landscape Sensitivity is relevant to both the Construction Phase and Operational Phase effects.

The Clare WES defined the sensitivity of the Sliabh Bernagh Uplands LCA to wind energy developments as Low to Medium, while noting that certain areas of the LCA (the Heritage Landscape) were considered of High sensitivity. This assessment agrees that this is an appropriate reflection of the site's sensitivity.

As set out in Section 12.1.3, the sensitivity of the landscape is a combination of its susceptibility to the proposed development, along with the value attached to the landscape.

The judgements on landscape susceptibility and value are combined in an overall Landscape Sensitivity judgement. This is outlined below for the site and the wider landscape:

As set out in Section 12.2.2, the landscape sensitivity of the site and vicinity varies. It is considered that the site itself is considered **Low sensitivity**, with landcover dominated by coniferous forestry and access roads. The sensitivity of the immediate vicinity of the site, which includes the rest of the Slieve Bernagh range and slopes, is considered **Medium to High**.

The landscape sensitivity of the lands adjacent to the site to the north, south and west is considered **Medium**. The lands to the north and west have a more complex pattern of landcover and settlement, but no landscape designations, while the lands to the south include open and exposed moorland which is valued for its scenic qualities. The land to the east, of the site, including the Heritage Landscape, east of the peak of Moylussa, which slopes towards the shores of Lough Derg, contains a number of designations and is a scenic area with characteristics which include long distance views to the lake and the Arra Mountains, is considered **High** sensitivity.

### Site and Immediate vicinity - Magnitude of Change

Wind farm site - The magnitude of change on the site during the construction phase is considered to be **High** in the site and immediate vicinity, where the construction phase effects will be most evident. This will result from activities such as tree felling (though it should be acknowledged that this already occurs on the site as it is under forestry), site clearance, earthworks, the extraction of rock from borrow pits, and the placement of temporary construction compounds, construction of roads and access tracks, turbines and other associated works. This phase will include the movement of machinery and increased noise and dust in the site and immediate surrounds.

### Delivery Route

Off-site works associated with the delivery route include works on third party lands at three locations to the north of the site to facilitate turbine delivery which is likely result in a Negligible to Low magnitude of change, with the removal of some forested lands and agricultural grassland, with a dense hedgerow and some scrub and trees removed at Coolready, along with earthworks, south of Bodyke. These areas, including the roadway between the R352 and the R465, are to remain for the duration of the operational phase. The construction phase is likely to last for 18 months.

### Significance of Effect

The significance of effect during the construction phase on the site and immediate surroundings, is considered to be Temporary in nature, and Moderate, adverse in quality. The effects are considered to be very localised, and mainly affecting the site and the immediate vicinity. Effects outside the site boundary area of the development including the road widening/junction improvements and short sections of roadway to the north of the site and are considered Not Significant and adverse.

### Wider Landscape- Landscape Sensitivity

Landscape sensitivity varies from High in LCA 8 Lough Derg and LCA 5 Sliabh Aughty and LCA 5 Lough Graney, and in the Arra Mountains LCA. Sensitivity is considered to be Low - Medium to the LCAs to the north east and east of the site.

The Lough Derg LCA includes Lough Derg itself and the lake's shoreline to the east of the site, and includes the settlements of Killaloe, Scarriff and Tuamgraney as well as the lakeshore and islands including Inis Cealtra/Holy Island. Parts of this LCA are close to the eastern boundary of the site (and referred to above), and considered of High Sensitivity.

Northwest of the site lie the LCAs of Tulla Drumlin Farmland, and East Clare Loughlands, including the lower plains and drumlins and including the areas of Bodyke, Tulla, and Quin and the lakes of Cullaunaheeda and Doon Lough which is considered to range from Low to Medium sensitivity. The topography is flatter or gently undulating, with some drumlins, and a more complex and settled landscape, within which wind energy developments would be more difficult to absorb. Some scenic route and trails are located within these LCAs.

Another area of Heritage landscape lies north of Feakle, in the vicinity of Lough Graney LCA, with Maghera mountain to the west and including Cappaghbaun mountain to the east. A scenic route is indicated around the shores of Lough Graney. This is also considered High sensitivity. In Co.

Tipperary, the LCA Arra Mountains , with extensive views over Lough Derg and to the Slieve Bernagh hills, is considered of High sensitivity.

### Wider Landscape- Magnitude of Change

The magnitude of change during the construction phase is considered to be **No change** in the wider landscape character areas.

### Grid Connection

The laying of an underground cable in the road corridor will only cause landscape and visual effects at the construction stage, with no operational phase landscape effects. The magnitude of change is considered Low. The construction phase will involve the laying of an underground cable in a trench in the road corridor.

### Wider Landscape - Significance of Effect

The significance of the landscape effect is a Temporary, Negligible landscape effect.

#### 12.3.1.1 *Forestry Replanting Sites (Landscape and visual effects)*

The construction phase involves site preparation and tree planting and the changes are considered to be minimal, resulting in Negligible landscape and visual effects on all sites.

The main landscape and visual effects are likely to occur during the operational phase and these are outlined in the relevant section below.

#### 12.3.2 Construction Phase Visual Effects

The main visual effects will arise during the operational phase, but visual effects are also likely during the construction phase.

### Proposed Development Site and Immediate Vicinity Visual Receptor Sensitivity

Visual receptors relevant to the construction phase would include those living in close proximity to the site and using the local roads within approximately 2 kilometres of the site, as the construction phase works are not likely to be visible over a wide area. These would be experienced by relatively low numbers of viewers. These visual receptors would typically be of medium to High sensitivity:

Medium:

*Viewpoints representing people travelling through or past the affected landscape in cars or on public transport, i.e. viewing but not focused on the landscape which is regarded as moderately scenic.*

High:

*...Viewpoints that are highly valued by people that experience them regularly (such as views from houses or outdoor recreation features focussed on the landscape).*



### Site and Immediate Vicinity - Magnitude of Change

The construction phase visual effects on the site of the proposed development will include tree and vegetation removal, site works and construction involving machinery entering and existing the site and using the local roads. Many of these activities will only be visible from the vicinity of the site and site roads, and local access roads, but not visible from the wider areas. Many of these activities will be carried out within the site where the surrounds are screened by dense coniferous forestry which prevents open views. These works will take place in a location where forestry operations (felling, timber removal and re-planting) are ongoing.

Three borrow pits on the site are proposed for the extraction of rock, which are located within coniferous forestry. These will be partly backfilled with overburden following construction.

#### Delivery route

Off-site works will include junction and road widening, new entrances and short areas of roadway construction to facilitate turbine delivery. These works and associated vegetation clearance are likely to be visible in the immediate vicinity of the works, which occur between the site boundary and Bodyke, but not over a wide area. The magnitude of visual change as a result of these off site works is considered **Low, which** is defined as changes which:

*... result in minor alteration to the composition and character of the view but no change to visual amenity*

The site works would constitute a **Medium** magnitude of change, defined as actions which:

*...result in change to the composition but not necessarily the character of the view or the visual amenity*

#### Significance of Effect

These are considered to have **Temporary, Slight to Moderate, adverse visual effects**. These effects will be very localised, and confined to visual receptors in the immediate vicinity of the site.

Off-site-works are considered to have a **Temporary, Negligible adverse** effect.

Visual receptors in the wider landscape will not experience visual effects during the construction stage.

#### Grid Connection

The visual effects of the grid connection are only during the construction stage, as it will not be visible during the operational stage.

#### Visual Receptor Sensitivity

Visual Receptors Sensitivity to the proposed underground cable, which is to be laid in the road corridor (either within the existing road or along the road verge) is considered Negligible. Sensitivity may be considered Low where there are dwellings adjacent to the road, or for the section of the

road which is the East Clare Way, where viewers may be more focussed on their surroundings and travelling on foot.

### Magnitude of Change

The magnitude of change is considered Low. The construction phase will involve the laying of an underground cable in a trench in the road corridor.

### Significance of Effect

The visual effect is a Temporary, Not Significant visual effect.

### 12.3.3 Operational Phase Landscape Effects

#### Proposed Development Site and Immediate vicinity - Landscape Sensitivity

Landscape Sensitivity is relevant to both the Construction and Operational Phase and is outlined in Section 12.3.1 above.

#### Proposed Development Site and Immediate vicinity - Magnitude of Change

The installation of 19 no. turbines, which are tall structures in the landscape, will be the most noticeable change in the character of the site and the immediate vicinity. The magnitude of change will be largely related to the aesthetic and perceptual aspects of the landscape character of the site but more evident from the surrounding area. A low magnitude of change is likely to the landscape receptors (such as the forestry), and the physical structure of the landscape, but a higher magnitude of change to the aesthetic and perceptual aspects of the landscape character.

The non-turbine elements which will cause a localised change in the landscape include the site wind measuring mast, site works and hardstands associated with the construction of the substation (and a visitor cabin), wind farm control building, and visitor cabin and the creation of 11.4 km of new roads and an upgrade of 8.4 km of existing roads on the site. Proposed tree felling of approximately 64.75 ha around the turbine bases is proposed, though it should be noted that this is not extensive, and that felling and re-planting already occurs on this site as it is under coniferous forestry. The proposed turbines will not affect the land use of the coniferous forestry. The change to the landscape fabric or physical landscape is therefore Low.

The introduction of the proposed wind turbines will result in a change to the landscape character of the site and immediate vicinity, which is a large area of coniferous forestry on the northern slopes of the Slieve Bernagh hills. The character of the site is dominated by coniferous forestry, and the site is relatively remote. The proposed windfarm will be large in scale, resulting in a change to the immediate vicinity including the landscape character in the vicinity of the site itself. It should be noted that the magnitude of change to the local character is likely to be most evident on the site itself as well as to the north and west, but less evident to the east in the highly sensitive Heritage landscape, east of Moylussa. The magnitude of change on the site and immediate vicinity is considered **to be of Medium magnitude of change:**

*Change that is moderate to large in extent, resulting in...introduction of large elements considered uncharacteristic in the context.*

### Delivery Route

Works to junctions along the delivery route will be reinstated following the construction phase, however the road connecting the R352 and R465 at Coolready will remain, and will constitute a Low magnitude of change.

### Site and Immediate vicinity - Significance of Effect

The introduction of the proposed wind farm development will result in a **Moderate effect** to the *landscape character* of the site and immediate vicinity. However, effects on the landscape fabric or the physical landscape are more localised.

The quality of the effect on the landscape fabric is considered adverse, though it is noted that this is occurring in a location where coniferous forestry operations are ongoing. The quality of the effect on the overall landscape character is considered neutral.

The duration of the effect is considered **Long Term**, as the turbines will be decommissioned.

### Wider Landscape - Magnitude of Change

The magnitude of change in the wider landscape relates to the changes in landscape character which result from the visibility of the proposed turbines when viewed from another LCA. There will not be any changes which affect landscape elements fabric in the wider landscape.

The magnitude of change in the wider LCA 8 Slieve Bernagh Uplands will vary with the visibility, the magnitude of change, and varies **from Moderate change, to Negligible or No change** across this landscape character area.

The proposed turbines will be evident in the northern part of the LCA which includes the site and immediate surrounds, while directly south of the site, on the ridge and southern slopes of the Slieve Bernagh Hills (including Cragnamurragh, Glenvagalliagh) there is little or no visibility, and the turbines will not result in a large scale change on the character of these uplands.

The open and expansive character of these areas, and the south eastern and north-eastern slopes of Moylussa will not undergo a change in character as the turbines are not visible from the majority of the mountain. There will be a glimpse of blade tips from the summit and an increase in visual presence of the windfarm to the north-west of the summit. No change to the characteristic long distance views from this area east to Lough Derg and the Arra Mountains will be experienced, which are important aspects of this landscape character and also the Heritage Landscape.

The south of the LCA will have occasional visibility in the area south and west of Broadford, and some visibility from the slopes of the Broadford Hills, in particular the northern slopes.

To the east, the LCA 8 Lough Derg Lakelands will experience some change, ranging from **Low to Moderate** degree of change. The extent of turbines visible varies, to the north near Mountshannon and Scarriff where there are views of high numbers of turbines, while along the lakeshore east of the site the scale and extent of the turbines visible is less.

Views change considerably through the LCA as a result of topography and landcover. A low number of turbines are visible in the vicinity of Annacarriga to the south and east of Ogonelloe (also part of

the Heritage Landscape). Other parts of the LCA where a high number of turbines will be visible though at a greater distance, include the lakeshore between Scarriff and Mountshannon, and including Holy Island/Inis Cealtra, and Lough Derg itself, also part of the Heritage landscape.

LCA 11 Clare Loughlands will experience change ranging from High in the north of the LCA near Bodyke, which is immediately north of the site, to Low to the west and northwest of the site will undergo some change in character as a result of the turbines. The flatter landscape with drumlin farmland is found around Bodyke and where there are open views of the site, and this part of the LCA will experience a High magnitude of change as the scale and extent of the turbines is large while immediately west of the windfarm, elevated areas will also experience a change where turbines are visible.

Changes to the character of the wider landscape character areas are considered to range from **Low** degree of change to parts of the LCA 12 Tulla Drumlin farmlands, **to Moderate** in the areas which have visibility of the turbines close to the site, though visibility varies with the drumlin landscape as shown in the ZTV.

A **Low** magnitude of change is likely to the LCA 5 Sliabh Aughty, where there is likely to be visibility from the southern part of the LCA but less visibility further north, and 6 Lough Graney. The Arra Mountains LCA is considered to undergo a Low to Moderate degree of change in a relatively limited area to the west of the LCA along Lough Derg, but the eastern flanks of the Arra Mountains will not undergo a change.

#### Wider Landscape – Significance of Effect

The effect of the development on the landscape character of the wider landscape varies depending on the character area, and the extent to which the development will be perceived from these areas. In general, only certain parts of each LCA will have views of the turbines and so the effect varies within each LCA. In general the significance of the effect ranges from **Not Significant to Moderate**, Moderate where the visual presence of the windfarm is more pronounced.

The magnitude of change in the wider LCA 8 Slieve Bernagh Uplands will vary with the visibility. The magnitude of change varies from Moderate to Imperceptible across this landscape character area. To the east, the LCA 8 Lough Derg Lakelands will experience some change, ranging from Not Significant in the south of the LCA to Moderate in the north, in the vicinity of Mountshannon, Scarriff and the shoreline of Lough Derg in this area. Parts of the LCA 11 East Clare Loughlands and Tulla Drumlin Farmland are likely to experience a Slight to Moderate effect, as will western parts of the Arra Mountains LCA. The effect on LCA 5 Lough Graney is considered Not Significant and LCA 6 Slieve Aughty to be Not Significant to Slight. The quality of the effect varies depending on the extent of the windfarm visible, and the location of the viewer.

##### 12.3.3.1 Forestry Replanting Lands

Offsite measures which have potential landscape and visual effects are the proposed replanting at a number of sites, as well as the proposed grid connection from the wind farm to Ardnacrusha, Co. Clare. There are three replanting sites, Trillickacurry, Co. Longford, Ballard, Co. Wicklow and Cooraclare, Co. Clare.



### Trillickacurry, Co. Longford: (Operational Phase Landscape Effect)

#### **Landscape Sensitivity**

The landscape value is considered Low and the susceptibility is Low, and the overall landscape sensitivity to forestry is considered Low.

#### **Magnitude of Change**

This is considered to range from Negligible to Low.

The changes as a result of the proposed replanting relate to the removal of existing native hedgerows internally within the site, and the change in the landscape pattern and landcover as a result of the forestry. Any sections of existing hedgerows which are possible to retain would reduce adverse landscape effects. The proposed replanting follows the external field boundaries, as recommended by the *Forestry and the Landscape Guidelines* (Forest Service) – though it is noted that these apply only to grant-aided projects and to all activities associated with a felling license.

#### **Significance of Effect**

The landscape effect of the proposed replanting is considered Not Significant, adverse effect.

### Ballinaclesh, Ballard, Co. Wicklow - Landscape Effect

#### **Landscape Sensitivity**

The landscape value is considered Medium and the susceptibility is Low. Forestry is already component of the landscape. The overall landscape sensitivity to forestry is considered Low.

#### **Magnitude of Change**

The magnitude of change of the proposed replanting is considered Low. The lands were previously planted and felled, and the replanting is therefore part of the cycle of forestry.

#### **Significance of Effect**

The landscape effect of the proposed replanting is considered Not Significant, neutral effect.

### Cooraclare, Co. Clare. Landscape Effect

#### **Landscape Sensitivity**

The landscape value is considered Low and the susceptibility is Low. Forestry is already component of the landscape. The overall landscape sensitivity to forestry is considered Low.

#### **Magnitude of Change**

The magnitude of change of the proposed replanting is considered Low. The proposed replanting is located in an area where there is already some forestry present, and is small in scale at just over 10 ha. The proposed replanting will reflect the existing field boundaries. Hedgerows are to be retained.

### Significance of Effect

The landscape effect of the proposed replanting is considered Not Significant, neutral effect.

#### 12.3.4 Operational Phase Visual Effects

The main visual effects relate to the turbines themselves. However there are a number of non-turbine elements which are considered separately here in terms of visual effects.

##### 12.3.4.1 Non-turbine elements

The non-turbine elements which are relevant to the visual effects include the site wind measuring mast, site works and hardstands associated with the construction of the substation (and a visitor cabin), wind farm control building, and visitor cabin and the creation of 11.4 km of new roads and an upgrade of 8.4 km of existing roads on the site. Proposed tree felling of approximately 64.75 ha around the turbine bases is proposed.

#### Visual Receptor Sensitivity

The receptors along a short section of the L-2818 would be few in number as this is a remote road in a forested area. Sensitivity is considered Low.

#### Magnitude of Change

The most prominent element at the site level is likely to be the substation compound, which will occupy approximately 2.1 ha, and the building height will be approximately 6.1 metres. This will be located within forestry, but adjacent to the L-8218 and will be locally prominent, however this is a remote road with very few visual receptors. The magnitude of change is considered Low to Medium.

### Significance of Effect

The significance of effect is considered to be Not Significant to Slight, adverse effect. The effects are localised, occurring in the vicinity of the site itself and the L-8218.

##### 12.3.4.1 Turbines

The main visual effects will arise during the operational phase, and relate to the turbines. These are assessed using a combination of information from site visits to the study area, study of the development proposals, analysis of the several Zone of Theoretical Visibility (ZTV) maps, and the use of Photomontages. The limitations and uses of the ZTV and Photomontages and the method of production are described in Section 12.1.3.

The ZTV Maps (Figure 12.11, 12.12 and 12.13 are included in Volume III at A3 size and reduced versions are also included in Section 12.2.4.

Three ZTV maps were produced, as follows:

- Hub Height ZTV (Figure 12.11)
- Tip Height ZTV (Figure 12.12)

- Cumulative ZTV (Figure 12.13, showing the proposed development with other existing and permitted wind farms)

The Hub Height and Tip Height ZTVs indicate, ZTV maps indicate, using colour bands, the number of turbines which are theoretically visible in each area. The ZTV maps should be read in conjunction with the Photomontages (Photomontages are included in Volume IV and are described and assessed below) as the Photomontages illustrate actual visibility. Comparison of the Tip Height and Hub Height ZTV maps is also carried out and this indicates areas where blade tips only are likely to be visible.

Comparison between the Tip Height and Hub Height ZTVs shows that within 10 kilometres of the turbines, the areas south of the site, including the settlement of Kilbane, will have theoretical visibility of blade tips only, as will the R466 in the Glenomra valley, between Broadford and north of Bridgetown, and a small area north of Feenlea mountain east of the site.

Beyond 10km, a reduction in the extent of theoretical visibility is seen on the lower slopes of the Silvermines and Keeper's Hill mountains, where the blade tips only are theoretically visible. Other locations that will have theoretical visibility of blade tips only include from southeast of O' Briensbridge to Newport in Co. Tipperary,

Similarly, the numbers of turbines theoretically visible to hub height is reduced compared to that of tip height, in areas such as Lough Derg, east of the site, and the area south of O' Briensbridge and around Limerick City which shows between 1-4 turbines theoretically visible at hub height.

The pattern and extent of theoretical visibility, including references to actual visibility, are included in the Baseline, in Section 12.2.3 under potential visual receptors. This information was used to assist in choosing viewpoints to assist in the visual assessment.

Tip Height ZTV indicates that areas to the south (shaded green and brown) indicate theoretical visibility of between 1-4 and 5-8 turbines, while the areas to the north, northeast and west/southwest have theoretical visibility of 17-19 turbines (shaded blue) so a higher number of viewpoints were chosen to represent areas with theoretical visibility of 17-19 turbines. It should be noted that very few areas shown in the Tip Height ZTV show visibility of either 9-12 turbines (shaded pink) or 13-16 turbines (shaded orange).

### Viewpoint Locations

The ZTV and landscape policies/designations contributed to an initial list of viewpoints, which were visited to assess potential visibility of the proposed turbines. Views at varying elevations, distances and in varying contexts and representing various types of visual receptor, were visited. Following this, the list of potential viewpoints was further refined, with viewpoints where no open views occurred being removed from the list. The ZTV Maps (Figures 12.11, 12.12 and 12.13) show the location of the 27 viewpoints. A map of the initial viewpoints showing those which were, is included in Figure 12.14, Appendix 12-2.

The viewpoints chosen also reflect the pattern and extent of the theoretical visibility, and the sensitivity of visual receptors. As indicated on the ZTV and in the baseline, a high proportion of landscape and visual designations (Heritage Landscape, scenic routes) as well as waymarked trails, viewing points and cultural heritage attractions are located to the east and northeast of the site, and

therefore a high number of viewpoints were taken in this area to adequately assess potentially sensitive receptors.

The areas shaded blue to the north and west of the site, indicate the highest number of theoretically visible turbines (17-19) and a number of photomontages represent this area. The most pronounced visual effects are likely within 10 kilometres of the proposed development, and this is reflected in the higher proportion of views in this area.

As noted in Section 12.2.3, certain settlements, including Kilbane, Broadford, Ogonelloe, Killaloe/Ballina, O' Briensbridge, Nenagh and the majority of Tulla are will not have visibility of the proposed development as indicated on the ZTV, so no visual effects will occur.

Certain areas shown in the ZTVs. including the north and northwest (beyond 20km), the east and south east beyond 10km, show little or no theoretical visibility so a very low number of montages represent these areas. To the south of Parteen, over 10km south of the proposed turbines, theoretical visibility is between 1-4 turbines, and fewer montages represent this area.

(Note: A limited number of viewpoints, which show no visibility, are included, either as a result of screening or the turbines, or in response to particular concerns raised during consultation).

A total of 27 viewpoints were identified informed by the site visits and ZTV mapping, representing a range of visual receptors from a variety of locations, directions and elevations and landscape context and character. Locations represent receptors at the following locations:

- Settlements
- Residential clusters
- Cultural heritage and tourist attractions
- Cultural Heritage sites, recreation trails, amenity areas
- Rural and regional roads, including scenic routes

Viewpoints 1-27 are described below and should be read in conjunction with the Photomontages in Volume IV.

### Viewpoint Description

For each viewpoint, the existing view is described (this is the 'Baseline Photograph') with an angle of view of 90 degrees. (For certain locations- Viewpoints 2, 4, 10, 19 and 22- there is a second Baseline photograph, also at 90 degrees, to represent the landscape context where the viewpoint has panoramic views). For these viewpoints, the baseline view centre on the windfarm is referred to as baseline photograph A, while the additional baseline view is referred to as baseline photograph B.

A wireframe view is also shown underneath the Baseline Photograph, illustrating theoretical visibility of the turbines. The Proposed View is then described which refers to the 'Photomontage' view. The photomontage view is shown as 53.5 degrees, with some viewpoints requiring two 53.5 degree views. The 27 viewpoints are as follows:



Table 12.7: Viewpoints for Photomontages

Viewpoint No.	Description
1	View from Feakle - elevated location along local road and East Clare Way
2	View from Mountshannon harbour across Lough Derg and towards Slieve Bernagh
3	View from Holy Island Pier over Lough Derg and Holy Island
4	View from Holy Island/Inis Cealtra, Co. Clare
5	View from Tuamgraney village towards site
6	View from Tuamgraney - centre of village
7	View from Bodyke, road east of pub on R352
8	View from outside Church at Ogonelloe along R463
9	View from Castletown lakeside amenity area
10	View from amenity/parking area along R494 scenic route
11	View from R352 Ennis - Tulla road - near Clare GAA centre of excellence
12	View over open field along Northern approach to O' Callaghansmills along R466
13	View from open stretch of road/East Clare Way at Caherhurly
14	View from Ballybroghan – The Bog Road
15	View from St. Mary's Church at Ballylughnan
16	View from outside Church at Ogonelloe along R463
17	View south of Ogenelloe on R463 looking towards site
18	View from outside Piper's Inn, Ballyheefy
19	View from Tountinna summit across Lough Derg and to Slieve Bernagh Mountains
20	View from Quin Abbey towards site
21	View from R466 Between Broadford and Kilbane Junction
22	View from Moylussa peak at summit cairn
23	View from opposite Church in Ballina
24	View from the waterfront in Dromineer
25	View from Silvermines viewing point
26	View from R525 south of O' Briensbridge
27	View from R465 north of Broadford

Each viewpoint is described in a separate table and the viewpoints are then summarised.

Table 12.8: Viewpoint 1

<p><b>Viewpoint 1 - View from Feakle - elevated location along local road and East Clare Way (approximately 9.8km from nearest turbine)</b></p> <p><b>Existing View</b></p> <p>The existing view shows a relatively open view towards the Slieve Bernagh Hills. In the foreground is a dry stone wall. Beyond this, in the middle ground, are gently sloping fields, rising in elevation to the left of the image, with scattered buildings and tree clumps. In the background, the low, rounded Slieve Bernagh hills are visible, rising highest in the centre of the view. The lower slopes are covered with coniferous plantations, with the top of the ridges mainly unforested. Areas of open moorland are also visible.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing a viewpoint location close to the village, with an open and scenic view of the hills, and along the East Clare Way, the viewpoint sensitivity is High.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The photomontage shows that all 19 of the proposed turbines will be visible from this view. The turbines appear in a cluster on the lower slopes of the hills, with two of the turbines set a little apart from the rest. The cluster is large, but does not occupy the entire view. The setting of the turbines on the lower ground results in the ridge being seen as a backdrop to the majority of the turbines, while some of the blades appearing above the ridgeline. The turbines are staggered and respond to the gently rounded profile of the hills. The magnitude of change is considered Medium as outlined in Table 12.4:</p> <p><i>Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity</i></p> <p>No other wind turbines are visible in this view, so there are no Cumulative effects.</p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Moderate, and neutral</b>. The turbines are mostly seen against a backdrop of the uplands and many are set below the ridgeline in a simple arrangement that responds to the profile of the hills and do not dominate. Mitigation by design reduced the extent of the turbines, and follows advice in the Wind Energy Planning Guidelines, which does mitigate the adverse effect to a degree.</p> <p>The duration is of the effect, as in all views, is considered to be Long Term.</p>

Table 12.9: Viewpoint 2

<p><b>Viewpoint 2 - View from Mountshannon harbour across Lough Derg and towards Slieve Bernagh (approximately 11.7km from nearest turbine)</b></p> <p><b>Existing View</b></p> <p>Two 90° baseline images are included, referred to as A and B in the Photomontage Booklet. The first existing view, A, is centred on the site of the proposed development, shows a view from the harbour at Mountshannon, over Lough Derg and its shoreline. In the foreground, and middleground, the main element is the lake itself, with the water reflecting the surrounding shoreline. To the right, the wooded lakeshore is visible, while in the centre of the view the round tower indicating Holy Island can be seen, with another two wooded islands to the left of the image. In the background, the rounded and low hills of Slieve Bernagh, which are covered with areas of coniferous forestry and areas of open fields, are visible in the distance. The view has highly scenic and tranquil qualities.</p> <p>The second 90° baseline image, B, is included to illustrate the panoramic nature of the view. This image shows the expansive views over Lough Derg including views to wooded islands in the lake, the peak of Tountinna to the east and the wooded shoreline to the northeast.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing a viewpoint in the Heritage Landscape and with a highly scenic and tranquil quality and a strong sense of naturalness, the view is considered of High sensitivity.</p>
<p><b>Magnitude of Change ( including Cumulative Impact)</b></p> <p>The photomontage shows that almost all of the proposed 19 turbines are visible in a cluster to the rear of the hills, along the sloping ridge to the right side of the image. Some (8) turbine nacelles or hubs are visible, with the remaining turbines appearing as blade tips. The spatial extent of the turbines is limited, as they are compact, though visual stacking does occur. The magnitude of change is considered Medium:</p> <p>The magnitude of change is considered Low:</p> <p><i>Change that is moderate or limited in scale, resulting in minor alteration of landscape receptors</i></p> <p>No other wind turbines are visible in this view.</p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Slight-Moderate</b>. The nature of the effect is considered <b>adverse</b>. The turbines are a new and dynamic component in this relatively simple and tranquil view, and while are visible but not considered dominant.</p> <p>It should however be noted that the viewer at this location will experience extensive and panoramic views in other directions, including across the lake to the Arra Mountains as indicated by the two 90° baseline images</p>



**Table 12.10: Viewpoint 3**

<p><b>Viewpoint 3 – View from Holy Island Pier over Lough Derg and Holy Island (approximately 10 kilometres from the nearest turbine).</b></p> <p><b>Existing View</b></p> <p>The existing view shows a view from the pier closest to Holy Island, over Lough Derg and towards Holy Island and to the Sliabh Bernagh hills. The wooded lakeshore is visible to the right of the view, with the lake itself in the middle ground, which is the main element of the view. Holy Island is visible in the centre of the view, with the rounded form of the Sliabh Bernagh hills to the background, with a mixture of open fields and coniferous forestry on the hills with some scattered dwellings. The view has high scenic qualities, and a tranquil quality with a sense of naturalness.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing a viewpoint location from the Holy Island Pier and the shores of Lough Derg, and within the Heritage Landscape, this view is of High sensitivity.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The proposed turbines are visible in a cluster near the centre of the view, to the rear of the ridge which slopes to the right of the image. The spatial extent of the turbines is limited. Some turbine nacelles (hubs) are visible while other turbines are hidden except for the blade tip. The turbines do not dominate the view, the main element which is the lake and the backdrop of hills.</p> <p>The magnitude of change is considered Low:</p> <p><i>Change that is moderate or limited in scale, resulting in minor alteration of landscape receptors</i></p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Slight-Moderate and adverse</b>. The turbines introduce a new and dynamic element to a view of simplicity, tranquillity and naturalness but do not dominate.</p>

Table 12.11: Viewpoint 4

<p><b>Viewpoint 4 – View from Holy Island/Inis Cealtra, (approximately 10 kilometres from the nearest turbine)</b></p> <p><b>Existing View</b></p> <p>Two baseline images are included, labelled A and B. View A is centred on the site of the proposed development and shows the view taken from an open and elevated location on Holy Island. In the foreground is an open, gently sloping grass field, and in the middle ground the elements of the monastic site are visible. To the left of the view, the ruins of a stone church are evident, with a stone enclosure adjacent to this, and the remains of a smaller church building. The lakeshore is fringed by a number of small trees, with the lake visible beyond. On the opposite shoreline, the rounded and gently sloping topography of the Slieve Bernagh hills is visible, with large areas of open fields interspersed with large swathes of coniferous plantation.</p> <p>A second 90° baseline image illustrates the panoramic views looking across Lough Derg to the east and northeast, with the Round Tower and some trees in the foreground.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing viewers on Holy Island, a site of important cultural heritage, a tourist attraction, and a location within the Heritage Landscape, the visual receptors are considered of High to Very High sensitivity.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The proposed turbines are visible in a small cluster of limited spatial extent. The blades or blade tips of 10 turbines are visible in this view, with just one nacelle or hub visible. These turbines appear behind areas of coniferous forestry or open fields behind the ridge slightly to the right of the view.</p> <p>The turbines, though visible, are not in any way dominant and are partly hidden by the topography. The turbines are not structures seen elsewhere in the landscape, and represent a new and dynamic element to the view. However they occupy a very limited proportion of the view and are considered to impart a <b>Low</b> magnitude of change to the overall view:</p> <p><i>Change that is moderate or limited in scale, resulting in minor alteration of landscape receptors</i></p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Slight, adverse effect</b>.</p> <p>The turbines introduce a new and dynamic element to a viewing location of simplicity, tranquillity and naturalness, but they do not in any way dominate and occupy a very limited proportion (both horizontally and vertically) of the view.</p> <p>It should however be noted that the viewer at this location will experience extensive and panoramic views in other directions, including across the lake to the Arra Mountains, to the other islands in the lake.</p>

Table 12.12: Viewpoint 5

<p><b>Viewpoint 5 - View from Tuamgraney village (R352)</b></p> <p><b>Existing View</b></p> <p>The existing view shows an open view from the main road, the R352, approaching Tuamgraney from Scarriff. In the foreground are walls enclosing residences, and in the middleground the road lies in the centre of the view, with buildings, mainly dwellings, on either side of the road, interspersed with occasional trees. Wooden poles and streetlights are also visible along the road. In the distance, a low ridge with extensive coniferous plantations is visible, with a ridge of higher, open ground behind this, to the centre and left of the view.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing viewers driving along the road, or walking the footpath, this view is considered of Medium sensitivity. Though this is marked as a scenic route, it is considered that the main qualities of the scenic route between Mountshannon and Tuamgraney are the views to Lough Derg and the Arra Mountains, and this view is not considered to have strong scenic qualities.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The photomontages shows 7 no. turbines visible or partly visible in this view. The turbines occupy a limited spatial extent in the context of the overall view, however the height of the turbines in comparison to the foreground elements, is considerable. The magnitude of change is considered <b>Medium</b>:</p> <p><i>Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity</i></p> <p>No other turbines are visible in this view.</p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Moderate, adverse effect</b>. Though the extent of the turbines is limited, the height is considerable compared to the elements in the foreground.</p> <p>The duration of the effect is considered Long Term, as the turbines may be removed.</p>

Table 12.13: Viewpoint 6

<p><b>Viewpoint 6 - View from Tuamgraney - centre of village</b></p> <p><b>Existing View</b></p> <p>The baseline photograph shows the view from Tuamgraney village, close to the junction of the R352 and R463 roads. This photograph shows the two roads, with buildings adjacent, framing both sides of the view. In the centre of the view is a green area with shrubs and small trees. In the distance, a glimpse of the ridge of the Slieve Bernagh uplands is visible.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing viewers driving or walking at this location, in the village, the visual receptor sensitivity is considered Medium. The scenic route between Mountshannon and Tuamgraney ends here, and the view is not considered highly scenic.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The photomontage shows that one turbine is visible from this location, through a gap in the foreground vegetation to the right of the view. The spatial extent is therefore extremely limited, and the turbine is partly screened by light vegetation in the foreground. The height of the turbine is such that it is visible, but not dominant. The magnitude of change is considered Low:</p> <p><i>Change that is moderate or limited in scale, resulting in minor alteration of landscape receptors, and/or introduction of elements that are not uncharacteristic in the context</i></p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Slight, and neutral</b>.</p> <p>However, the wind farm does represent good design as prescribed in the Wind Energy Planning Guidelines, which does mitigate the adverse effect to an extent.</p>



Table 12.14: Viewpoint 7

<p><b>Viewpoint 7 - View from Bodyke, road east of Cobbler's Rest pub on R352</b></p> <p><b>Existing View</b></p> <p>The existing view shows a roadside hedgerow in the foreground, with a mixture of fields, clumps of trees including conifers, and a small cluster of buildings in the foreground. Beyond this the rounded landform of the Slieve Bernagh hills are evident, which are partly covered in forestry with open moorland visible along the tops of the ridges.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing viewers in Bodyke village and walking or driving on the roads, visual receptor sensitivity is considered Medium.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The photomontage shows all 19 of the proposed turbines will be visible from this location. The spatial extent of the turbines is large, with the turbines extending across the field of view. The location of the turbines on the lower slopes means that the towers and some of the hubs are seen against the backdrop of the hills, while the blades protrude over the ridgeline. The staggered layout of the turbines responds to the gently rolling topography of the hills. The magnitude of change is considered to be High:</p> <p><i>Change that is moderate to large in extent, resulting in major alteration or compromise of important landscape receptors, and/or introduction of large elements considered uncharacteristic in the context.</i></p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Significant</b>.</p> <p>In responding to the ridgeline, the scale of the overall view and the proportion of the turbines visible, the wind farm does accentuates the topography and represents good design as prescribed in the Wind Energy Development Guidelines, WEDG (2019) Draft. which does mitigate the adverse effect to an extent. However the spatial extent over the entire angle of view does dominate the view, and result in an <b>adverse</b> effect.</p>

Table 12.15: Viewpoint 8

<p><b>Viewpoint 8</b> - View from outside Church at Ogonelloe along R463</p> <p><b>Existing View</b></p> <p>This view is taken from the southern end of the village of Ogonelloe, outside the Church which is a local gathering point. This location also has views south to the Sliabh Bernagh hills as well as Lough Derg. The road is visible in the foreground, with the car parking area to the left of the image. An entrance to a dwelling is located to the right of the image, and the topography rises.</p> <p>In the background, the road turns, out of sight, and the roadside trees screen part of the hills in the distance, but parts of the ridge of high ground are visible, partly covered in coniferous forestry. To the left of the image, lower topography allows views to the lake.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing viewers outside the church, traveling along the road (driving or cycling would be most common receptors in this location) along a scenic route, viewers are considered of High sensitivity.</p>
<p><b>Proposed Change including Cumulative Impact</b></p> <p>The proposed wind farm is not visible from this location, so no change arises.</p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be No effect.</p>

**Table 12.16: Viewpoint 9**

<p><b>Viewpoint 9 - View from Castletown lakeside amenity area</b></p> <p><b>Existing View:</b></p> <p>The existing view shows a view from a lakeside amenity area near Castletown in Co. Tipperary. The lake occupies the foreground and middleground, and is the main element of the view. On the opposite side of the lake, the Slieve Bernagh hills are visible, and the landform is smooth and relatively rounded. The land cover ranges from wooded areas along the lakeshore to a patchwork of fields on the slopes, with large blocks of coniferous forestry on the upper slopes of the hills. The high ground along the ridges are a generally mosaic of forestry and open moorland.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing visual receptors at the lakeside amenity area and in a Primary Amenity Area, visual receptor sensitivity is considered High.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The photomontage shows the proposed turbines are visible in a small cluster in the saddle between two higher hills. The spatial extent is limited, and the numbers visible are low - with 5 no. turbines clearly visible, though the towers are largely screened, and two blade tips also visible. The location of the turbines between to areas of higher ground ensures that they sit well in the landscape and do not dominate. The magnitude of change is considered to be Low:</p> <p><i>Change that is moderate or limited in scale, resulting in minor alteration of landscape receptors, and/or introduction of elements that are not uncharacteristic in the context</i></p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Slight, and neutral</b>. The turbines are set well into the topography, sitting in a saddle between two peaks, and accentuate the topography as recommended in the WEDG (2019) Draft.</p>

Table 12.17: Viewpoint 10

<p><b>Viewpoint 10</b> - View from amenity/parking area along R494 scenic route</p> <p><b>Existing View</b></p> <p>Two 90 °baseline views are included, A and B. View A shows a roadside amenity area overlooking Lough Derg. In the foreground, several picnic tables and an information board are visible, and the ground slopes towards the lake. Some shrubs and small trees are visible further down the slope in the foreground to the right of the image, while to the left, the crash barrier along the R494 is visible with mature trees lining the eastern side of the road. In the middle ground, the lake occupies a proportion of the view, and in the distance, the land on the opposite side of the lake appears as a long, low ridge, sloping to a wooded lakeshore to the right of the view.</p> <p>It should be noted that the main direction of view from the amenity area is not in the direction of the turbines to the southwest but more to the west, directly across the lake where there are extensive views. This is illustrated by an additional 90° baseline photograph, (B) showing the view across Lough Derg to the northwest towards Aughinish Point, Scilly Island and the opposite lakeshore with the Slieve Aughty hills forming a distant backdrop to the lake. The wooded lakeshore, north of the roadside amenity area, and the gently landscape near Castletown, is also visible to the right of the image.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing visual receptors at the lakeside amenity area and along scenic route V01 in Co. Tipperary, visual receptors are considered of High sensitivity.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The photomontage shows that 6 of the proposed 19 turbines are visible, to the left of the view. The turbines have a limited spatial extent, and four hubs are visible, with the remaining two visible as blades only, behind the ridge. The remaining turbines on the wireframe are screened behind the mature trees to the left of the image. The turbines are not in the direction of view and not in any way dominant. The composition of the view, with the elements in the foreground, is relatively complex. The magnitude of change is considered Low:</p> <p><i>Change that is moderate or limited in scale, resulting in minor alteration of landscape receptors, and/or introduction of elements that are not uncharacteristic in the context</i></p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Slight, neutral</b>. The turbines are small in extent and in scale, which is emphasized when seen adjacent to the trees, and are not in the main direction of the view, or where the eye is drawn.</p>



Table 12.18: Viewpoint 11

**Viewpoint 11 - View from R352 Ennis - Tulla road - near Clare GAA centre of excellence (approximately 14.6km form the nearest turbine)**

**Existing View:**

The existing view shows the R352 Ennis-Tulla road, at the entrance to a GAA grounds. In the foreground, the road is visible, with stone walls defining the entrance to the facility. To the right of the image, a fence in behind the walls is also visible, and flood lights are evident on the pitch. To the left of the view, trees and a shed are visible on the opposite side of the road. In the distance, the Slieve Bernagh hills are noticeable, as they provide a contrast to the flatter foreground, and they display a rounded and smooth landform.

The elements in the foreground contribute to a somewhat complex composition of view.

**Visual Receptor Sensitivity**

Representing viewers driving the R352, usually at higher speeds, and those at the GAA facility, the visual receptor sensitivity is considered **Low to Medium**. The lack of hard shoulder or footpath suggests few walkers on the road. Receptors travelling along roads at speed would be of Low to Medium sensitivity, while those engaged in sport would also be Low sensitivity as they are not focussed on their surrounds.

**Magnitude of Change** including Cumulative Impact

The photomontage shows the proposed turbines will be visible to the centre and right of the view, on the slopes of the hills. From this view, the turbines appear quite elevated, but they are at some distance from the viewer. The spatial extent is relatively limited. The lower turbines are seen against the backdrop of the hills, while the turbines at higher elevations protrude against the skyline, giving a staggered effect.

The magnitude of change is considered **Medium**:

*Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity*

**Significance of visual effect**

The significance of the visual effects at this location would be **Slight, neutral** effect. The turbines are set in a cluster, and though some blades protrude against the skyline, many are seen against the backdrop of the hills. The open view of the hills in not affected.

Table 12.19: Viewpoint 12

<p><b>Viewpoint 12 - View over open field along Northern approach to O' Callaghansmills along R466</b></p> <p><b>Existing View</b></p> <p>This view shows a view from the northern approach into O' Callaghansmills, between several houses. In the foreground of the view, two houses are visible, with walls and vegetation in the foreground between the houses. In the middle ground, several fields are visible with scattered dwellings among them. In the background, the Slieve Bernagh hills are visible, with extensive coniferous plantations on the lower slopes, with areas of open moorland visible near the peaks.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing viewers close to the village of O' Callaghansmills, and also representing views in the vicinity of two residences, this viewpoint would be considered Medium sensitivity.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The photomontage shows 16 of the proposed turbines are visible in this view. The turbines occupy a medium spatial extent of the view, and the majority are set on lower ground in coniferous forestry. The turbines are in a cluster to the left of the image, with a smaller cluster to the right of the image, with the turbine to the right of the image standing apart somewhat. The turbines are clearly visible, but are not dominant and the extent is broken up somewhat by the foreground vegetation. The magnitude of change is considered Medium:</p> <p><i>Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity</i></p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Moderate, neutral effect.</b></p> <p>The view between the houses is that of a working rural landscape of fields, forestry and scattered dwellings, and while the turbines are visible, they do not dominate.</p>

Table 12.20: Viewpoint 13

<p><b>Viewpoint 13 - View from open stretch of road/East Clare Way at Caherhurly</b></p> <p><b>Existing View</b></p> <p>The existing view is taken from the local road at Caherhurly, near a cluster of dwellings, where there is a relatively open view. The foreground shows little roadside vegetation, with views into marginal grassland which slopes up, away from the viewer. In the background, as the ground rises, the landcover is dominated by a swathe of coniferous forestry with small clumps of deciduous trees.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing visual receptors close to (but not directly from) a number of dwellings, and along the East Clare Way, the sensitivity of the visual receptors is considered to be Medium to High. The view is not considered to have scenic qualities.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The proposed view is illustrated by two photomontages, each representing the field of view of a person looking towards the proposed development. These show a total of nine turbines are visible from this location, the remaining turbines visible in the wireframe are hidden by intervening vegetation. The first view shows seven turbines are partly visible, in the background of the view, appearing among the coniferous forestry. The views of these turbines vary, from turbine towers and hubs visible, to just blade tips visible from behind the forestry. Sparse foreground vegetation serves to very lightly screen the turbines, and makes them appear to recede slightly. The second illustration shows the turbines appear at more of a distance, with one turbine almost completely screened by mature trees and in this view, the turbines have much less of a visual presence. The magnitude of change is Low to Medium.</p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Moderate, neutral effect</b>. The two photomontage views show that though the turbines are in close proximity, the extent varies, and many turbines are hidden from view by intervening vegetation. The quality of the effect is considered neutral, as it is considered the turbines do not detract from the view, a view which is already clearly modified by forestry.</p>

Table 12.21 Viewpoint 14

<p><b>Viewpoint 14 - View from The Bog Road at Ballybroghan (approximately 2.2 km from the nearest turbine)</b></p> <p><b>Existing View</b></p> <p>The existing view is the view from the Bog Road, a narrow track which lies in the centre of the view. Moorland, with heather in bloom, is evident on both sides of the road and covers an extensive area of the image, with some shrubs to the right of the view. In the background, to the right of the image, long distance views are available over the low-lying landscape, while to the left and centre of the view, the ground rises gently. A dense conifer plantation lies to the left of the view, and in the distance the ridges of the Sliabh Bernagh hills are visible. The overall composition of the view is one of simplicity, largely due to the smooth expanse of moorland. There is a sense of naturalness, though slightly reduced by the coniferous plantation.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing viewers travelling at slow speeds along the Bog Road, a scenic route and part of the East Clare Way, viewers would be of High sensitivity.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The photomontage shows 7 turbines are visible, or partially visible, in the centre of the view. Five hubs are visible with two appearing as blade tips only. The majority of the towers are hidden behind intervening topography. The turbines are spread over the view and so of large spatial extent, and though they appear relatively close to the viewer, they do not dominate the view. The simplicity of the view is reduced, and the introduction of large turbines which are man-made elements, do change some of the perception of naturalness, but the overall character of the view is unaffected and the long distance views are unchanged. The magnitude of change is considered <b>Medium</b>:</p> <p><i>Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity</i></p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Moderate, neutral effect</b>. The overall simple character of the view is unaffected, a narrow road through the expanse of moorland in the foreground and the long distance views are unchanged.</p>



Table 12.22 Viewpoint 15

<b>Viewpoint 15 - View from St Mary's Church at Ballylaghnan</b>	
<b>Existing View</b>	The existing view shows a view of the car park and church, adjacent to the road. The church occupies the centre of the view, with a grass walled area to the left of the view, and scattered trees and shrubs. To the right of the view a car park is visible, with hedging screening further views behind. There are glimpses of the hills in gaps in the vegetation.
<b>Visual Receptor Sensitivity</b>	Representing viewers gathering outside the church and close to residential receptors, the visual receptor sensitivity is considered Medium.
<b>Magnitude of Change</b> including Cumulative Impact	There is no change as the single blade tip is hidden by intervening vegetation.  No other wind turbines are visible in this view.
<b>Significance of visual effect</b>	There is no visual effect at this location.

Table 12.23 Viewpoint 16

<p><b>Viewpoint 16 - View from south of Ogenelloe on R463 (Islandcosgry)</b></p> <p><b>Existing View</b></p> <p>This view shows the main road, which is bordered on the opposite side, by a number of dwellings. With some vegetation screening views. In the foreground, a high stone wall defines the road edge from a number of houses. In the middle ground, agricultural fields are visible, while the topography slopes away from the viewer to a hill which is partly wooded to the right of the image. To the centre and left of the image, a ridge of higher ground is visible in the distance.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing a viewpoint location close to a number of residences and along a Scenic Route, visual receptors are considered of High sensitivity.</p>
<p><b>Proposed Change including Cumulative Impact</b></p> <p>There is no visibility of the proposed turbines from this viewpoint.</p> <p>No other wind turbines are visible in this view.</p>
<p><b>Significance of visual effect</b></p> <p>There is no visual effect.</p>

Table 12.24 Viewpoint 17

<p><b>Viewpoint 17</b> - View on R463 at Ballyheefy</p> <p><b>Existing View</b></p> <p>The existing view shows the main road to the left of the view, with a large arable field in the foreground. In the middleground, several dwellings, clumps of trees and fields are visible. Behind these, the gently rolling hills of Slieve Bernagh are visible, with a combination of coniferous forestry and a patchwork of fields evident on the slopes.</p> <p>It should be noted that at this location, extensive views of the lake are available in the opposite direction, to the southeast, which tend to draw the eye as one is travelling south.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing a viewpoint location and along a Scenic Route, visual receptors are considered of <b>High</b> sensitivity.</p>
<p><b>Proposed Change</b> including Cumulative Impact</p> <p>The proposed turbines will be visible from this location, with a limited spatial extent. Three turbines, visible mostly as blade tips, are seen behind the lower area of the ridge. The turbine blades are visible but do not dominate the view. The magnitude of change is considered <b>Low</b>:</p> <p><i>Change that is moderate or limited in scale, resulting in minor alteration of landscape receptors, and/or introduction of elements that are not uncharacteristic in the context</i></p> <p>No other turbines are visible in the view.</p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Not Significant to Slight, neutral effect</b>. The turbines, though partially visible, are set between two higher areas along the ridge, thus complementing the topography.</p> <p>As noted above, the more dramatic views from this part of the scenic route are towards Lough Derg.</p>

**Table 12.25 Viewpoint 18**

<p><b>Viewpoint 18</b> - View from outside Piper's Inn at Ballyheefy</p> <p><b>Existing View</b></p> <p>This view shows a roadside fence, beyond which lies a field and a dwelling, partly screened by vegetation. The middle ground is composed of a patchwork of fields with mature hedgerows interspersed with tree clumps and some scattered buildings. In the background, the topography rises to a long, rounded ridge, with swathes of coniferous forestry on the higher ground, and some areas of clear-felling, especially in the left and centre of the image.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing visual receptors outside a local inn, along the East Clare Way, the visual receptor sensitivity is <b>Medium to High</b>. The view, while pleasant, has no particular scenic qualities.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The photomontage shows that three blade tips of the proposed turbines are just visible behind the dip in the ridge. These have a minimal visual presence, are of limited spatial extent and do not affect the character of the view. The magnitude of change is considered <b>Negligible</b>:</p> <p><i>Barely discernible intrusion of the development into the view, or introduction of elements that are characteristic in the context, resulting in slight change to the composition of the view and no change in visual amenity.</i></p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Not Significant, neutral effect.</b> .</p>



Table 12.26 Viewpoint 19

**Viewpoint 19 - View from Tountinna summit across Lough Derg and to Slieve Bernagh** (approx. 9.9 km from nearest turbine)

#### Existing View

Two 90° baseline images are included, labelled A and B. The existing view A, towards the site of the proposed development shows an elevated, panoramic view overlooking Lough Derg of a somewhat managed, agricultural landscape. This is taken from Tountinna, in the Arra Mountains, and shows extensive views with some moorland, fields and forestry plantations in the foreground, but the main views are across Lough Derg and the lake itself. The lake occupies a considerable extent of the view, and across the lake, the land rises towards the Slieve Bernagh hills which are visible. The lakeshore and lower slopes are covered with patches of woodland and fields, while a patchwork of fields constitute the main land cover. The higher ground along the ridge has extensive conifer plantations and some open moorland areas, such as on Moylussa. The Slieve Bernagh hills are visible as far as Ballykildea mountain to the left of the view, with Caher Mountain and Ogonelloe visible to the right of the image. This view has high scenic qualities, the key elements include the lake itself, the topography on the opposite shore.

The second 90° baseline image (B), illustrates the expansive panoramic view to the northwest and north to the upper reaches of Lough Derg. In the foreground, the lower slopes of the Arra Mountains are visible, with the flatter lands sloping to the lakeshore on the right of the image. The lake itself is a key element in the view, with the Co. Clare coastline and parts of Co. Galway visible across the lake. To the left of the image, the Slieve Aughty hills form a ridge of higher ground on which the distant Derrybrien turbines are just visible.

It should be noted that this location also offers panoramic views, to the south towards the lower end of the lake.

#### Visual Receptor Sensitivity

Representing viewers on the summit of Tountinna, on the Lough Derg Way and in the Tipperary Primary Scenic Amenity area, at a viewpoint with highly scenic qualities, visual receptor sensitivity is considered **High**.

#### Magnitude of Change including Cumulative Impact

The photomontage shows that seven of the turbine hubs (nacelles) are visible above the forested ridge to the right of Moylussa. The tips of three other blades are just visible above the ridge.

Though the turbines are visible, they are in a cluster with a limited spatial extent. The turbines are seen behind a ridge, and are adjacent to the higher ground to the left, so they do not compete with the height of Moylussa but complement it. The magnitude of change is considered **Low to Medium**.

There are no other turbines visible in this view, however the Cumulative TV suggests that the proposed Carrownagowan turbines will be visible from here, in addition to other cumulative turbines. The Derrybrien turbines are a considerable distance, and are just discernible in the second baseline image (B). It is likely that turbines to the southeast may be visible but in the opposite

direction.

#### Significance of visual effect

The significance of the visual effects at this location would be **Slight-Moderate, neutral** effect. The layout of the turbines is such that they do not compete with the height of Moylussa to the left, but complement it, which is consistent with recommendations in the WEDG, 2019.

**Table 12.27 Viewpoint 20**

#### Viewpoint 20 - View from Quin Abbey towards site (approximately 17.6km from nearest turbine)

##### Existing View

This view is from the eastern side of the Abbey, as no open views were available from the western side. The view is one of gently undulating pastoral fields enclosed by hedgerows, some relatively mature, with clumps of trees and the chimneys of a ruined building, to the left of the image and some clusters of houses and sheds to the right. The ground rises slightly to the centre of the view. In the background, the uneven profile of the Slieve Bernagh hills is just visible.

##### Visual Receptor Sensitivity

Representing visual receptors close to Quin Abbey, a site of cultural heritage importance, but a view not with special scenic qualities, the visual receptor sensitivity is considered **Medium**.

##### Magnitude of Change including Cumulative Impact

The turbines are all visible in the distance from this viewpoint, located in a cluster with the backdrop of the hills. The spatial extent of the turbines is considered limited, and while visible they in no way dominate the view. The magnitude of change is considered **Low**:

*Change that is moderate or limited in scale, resulting in minor alteration of landscape receptors, and/or introduction of elements that are not uncharacteristic in the context*

##### Significance of visual effect

The significance of the visual effects at this location would be **Slight, neutral effect**. The turbines are a small element of a pastoral agricultural landscape with a distant backdrop of hills, and do not affect the quality of the view.

**Table 12.28 Viewpoint 21**

<p><b>Viewpoint 21 - View from R466 (Scenic Route) Between Broadford and Kilbane Junction</b> (approx. 3.4 km from the nearest turbine)</p> <p><b>Existing View</b></p> <p>The view shows the view in the Glenomra valley, along the R466. The road runs along the valley floor, in the centre of the view, in the direction of the hills. To the left the land is relatively flat, and composed of fields, tree clumps along the valley while the ground slopes towards the hills of Glenvagalliagh and Lackareagh. The landcover on the hills is a patchwork of fields, coniferous forestry and open moorland on Lackareagh, the furthest peak. There are some buildings, but the valley is not densely settled.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing viewers along the scenic route, and close to a dwelling, in a moderately scenic location, the visual receptors sensitivity is considered High.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>One turbine tip, theoretically visible in the wireframe, is hidden by the forestry in the centre of the view. Therefore these is no change to the view.</p> <p>There are no other turbines visible in this view.</p>
<p><b>Significance of visual effect</b></p> <p>There is no visual effect.</p>

Table 12.29 Viewpoint 22

<p><b>Viewpoint 22: View from Moylussa peak at summit cairn</b> (approx. 2km from the nearest turbine)</p> <p><b>Existing View</b></p> <p>There are two 90° baseline images, A and B. View A is centred on the site of the proposed development, and shows an open and expansive panoramic view from the summit of Moylussa. The open moorland creates a simple view with a strong sense of naturalness, and wilderness. The landform is flat or gently sloping, with slightly higher ground visible to the left and centre of the image. In the distance, there are views of the lower lying landscape.</p> <p>A second baseline view (B) illustrates the expansive and scenic nature of the wider panoramic view to the northeast. This view shows the lower Slieve Bernagh hills in the foreground with views to Lough Derg and the Slieve Aughty hills to the left of the view. To the left, a set of distant turbines (Derrybrien) are barely distinguishable from this distance. To the centre and right of the view, the Co. Tipperary lakeshore is visible with the Arra mountains to the right.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing visual receptors from the summit cairn of Moylussa, in an area of high scenic value and a popular recreation area this is considered of <b>High</b> visual receptor sensitivity.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>Though they will be visible and dynamic elements, the three blade tips visible over the horizon will not have an effect on the character of this view, which is that of expansive open moorland, with views to the surrounding landscape and Lough Derg. The magnitude of change is considered to be <b>Negligible</b>.</p>
<p><b>Significance of visual effect</b></p> <p>The significance of the visual effects at this location would be <b>Not Significant, neutral effect</b>. The blade tips, though moving objects, do not affect the character of the open and moorland, or the extensive long distance views.</p>



**Table 12.30 Viewpoint 23**

<p><b>Viewpoint 23: View from opposite Church in Ballina (approx. 8 kms from nearest turbine)</b></p> <p><b>Existing View</b></p> <p>This view shows a view over the bridge at Killaloe, and the river itself is a key element of the view in the foreground with a wide expanse of water visible. On the right of the image, the buildings of Ballina are visible, with the Killaloe bridge in the centre of the view. To the left of the image, the buildings of Killaloe are visible. In the background, the rounded hills of Slieve Bernagh are visible, with landcover varying from fields, areas of woodland, while the top of the hills are a mixture of coniferous forestry and moorland.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing a viewpoint location in Ballina town and in a Prime Scenic Amenity area, the visual receptor sensitivity is considered Medium to High.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The proposed turbines are not visible in this view, so there is no change to the view.</p>
<p><b>Significance of visual effect</b></p> <p>There is no visual effect.</p>

**Table 12.31 Viewpoint 24**

<p><b>Viewpoint 24: View from the waterfront in Dromineer (approx. 19.8 km from nearest turbine)</b></p> <p><b>Existing View</b></p> <p>This view shows a view taken from the waterfront at Dromineer. In the foreground the main element is the sea, with the jetty and boathouse in the middle ground. Some boats are moored in front of the boathouse, and a green area is visible to the left of the view. In the background, trees and vegetation are seen behind the buildings and the jetty, and the lakeshore in the background is wooded. To the right of the view, the opposite lakeshore and distant hills are visible.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing a viewpoint location on the waterfront at Dromineer, a location for leisure and recreation with scenic qualities, the visual receptor sensitivity is considered High.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The proposed turbines are not visible in this view, due to screening by the intervening vegetation. so there is no change to the view. No other turbines are visible in the view.</p>
<p><b>Significance of visual effect</b></p> <p>There is no visual effect.</p>

Table 12.32 Viewpoint 25

<p><b>Viewpoint 25: View from Silvermines viewing point car park (approx. 22 km from nearest turbine)</b></p> <p><b>Existing View</b></p> <p>This view shows a view taken from the Silvermines viewing point, which is an elevated location above the village of Silvermines. The views are panoramic from this location. To the left of the image, a steeply sloping hill, with coniferous plantations, is visible. To the centre and right of the view, the foreground gives way to extensive views of the lowlands, with hills visible in the distance (the Arra Mountains). The lower ground consists of a patchwork of small fields, with scattered houses and a settlement (Silvermines) to the right of the image.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing a viewing location in a scenic area, with panoramic views, a location for leisure and recreation with scenic qualities, the visual receptor sensitivity is considered High.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The proposed turbines (two hubs are visible and a low number of blade tips) are visible in the distance with a very limited extent, in the centre of the view. They are just discernible but remain a minor element of the view. The magnitude of change is considered <b>Negligible</b>:</p> <p><i>Barely discernible intrusion of the development into the view, or introduction of elements that are characteristic in the context, resulting in slight change to the composition of the view and no change in visual amenity.</i></p> <p>No other turbines are visible in the view.</p>
<p><b>Significance of visual effect</b></p> <p>The visual effect is considered <b>Not Significant, and neutral</b>. The proposed turbines are sited at a lower point in the ridgeline (as per the Siting and Design guidance in the DoEHLG 2019 Draft) and are in no way dominant. The overall character of the view is not changed.</p>

**Table 12.33 Viewpoint 26**

<p><b>Viewpoint 26: View from the R525 south of O’ Briensbridge (approx. 11.6 km from the nearest turbine)</b></p> <p><b>Existing View</b></p> <p>This view shows a view taken from the R525, between Castleconnell and O’ Briensbridge. This is one of the few open views along this road, with much of the road screened by vegetation on both sides. This represents one of the more open views along the road, with a field in the foreground to the left of the image, which contains silage bales while in the middle ground, a band of deciduous planting partly screens a view to rolling hills to the left of the image. To the right of the road, mature roadside planting screens views. In the distance, from the centre to the right of the image, higher ground is visible.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing a viewing location on a Regional road with no designations and some pleasant but not scenic views, visual receptor sensitivity is considered of Low to Medium sensitivity.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The proposed turbines are not visible in the view. Though the wireframe shows that two blade tips protrude from the ridge near the centre of the view, the photomontage shows that this is hidden by intervening vegetation.</p> <p>No other turbines are visible in the view.</p>
<p><b>Significance of visual effect</b></p> <p>There is no visual effect.</p>

Table 12.34 Viewpoint 27

<p><b>Viewpoint 27: View from the R465 south of Broadford (approx. 2.8km from the nearest turbine)</b></p> <p><b>Existing View</b></p> <p>This view shows is taken form the R465, a regional road which lies west of the site. The viewpoint is taken at one of the few open views towards the site form this road, north of a cluster of houses. To the side of the road, undulating fields are visible, with marginal grassland and pockets of trees and shrub growth. To the left of the view, an area of open bogland is apparent, while on the right, a clump of conifers is visible. The land rises away from the road to a low ridge.</p>
<p><b>Visual Receptor Sensitivity</b></p> <p>Representing a viewing location on a Regional road with no designations and some pleasant but not scenic views, and a sense of naturalness, visual receptor sensitivity is considered of Medium sensitivity.</p>
<p><b>Magnitude of Change</b> including Cumulative Impact</p> <p>The proposed photomontage is shown in two images, 27 and 27a (each showing 53.5 degrees angle of view). In the first image, there are several turbine blade tips appearing over the ridge to the left of the view in the first photomontage, and two turbines appearing to the right of the image, with the tower bases partly screened. A number of turbines are not visible due to the vegetation.</p> <p>The second image shows several other turbines seen along the ridge of higher ground, among the trees. The trees provide an element of height to the view, and the turbines are of a comparable height. The turbines are visible but do not appear dominant. (It should be noted that when compared to the wireframe a turbine to the left of the view is hidden due to intervening vegetation.)</p> <p>The magnitude of change to the view is considered Medium -</p> <p><i>Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity</i></p> <p>No other turbines are visible in the view.</p>
<p><b>Significance of visual effect</b></p> <p>The visual effect is considered <b>Moderate effect</b>. The quality of the effect is considered <b>Neutral</b>. The turbines are visible, but are partly screened by the trees. The height of the turbines is comparable to the trees, so they do not dominate, and the turbines are well spaced.</p>

Table 12.35 below summarises the visual assessment of the viewpoints.

Table 12.35 Summary of Visual Effects:

Viewpoint No.	Description	Sensitivity	Magnitude of Change	Significance
1	View from Feakle - elevated location along local road and East Clare Way	High	Medium	Moderate, neutral
2	View from Mountshannon harbour across Lough Derg and towards Slieve Bernagh	High	Medium	Slight-Moderate, adverse
3	View from Holy Island Pier over Lough Derg and Holy Island	High	Medium	Slight-Moderate, adverse
4	View from Holy Island/Inis Cealtra, Co. Clare	High	Low	Slight adverse
5	View from Tuamgraney village towards site	Medium	Moderate	Moderate, adverse
6	View from Tuamgraney - centre of village	Medium	Low	Slight, neutral
7	View from Bodyke, road east of pub on R352	Medium	High	Significant, adverse
8	View from outside Church at Ogonelloe along R463	High	None	No effect
9	View from Castletown lakeside amenity area	High	Low	Slight, neutral.
10	View from amenity/parking area along R494 scenic route	High	Low	Slight, neutral.
11	View from R352 Ennis - Tulla road - near Clare GAA centre of excellence	Low to Medium	Medium	Slight, neutral.
12	View over open field along Northern approach	Medium	Medium	Moderate, neutral



	to O' Callaghansmills along R466			
13	View from open stretch of road/East Clare Way at Caherhurly	Medium- High	Medium	Moderate , neutral
14	View from Ballylaghan – The Bog Road	High	Medium	Moderate, neutral
15	View from St. Mary's Church at Ballylaghnan	Medium	No change	None
16	View south of Ogenelloe on R463 (Islandcosgry)	High	No change	None
17	View on R493 at Ballyheefy	High	Low	Slight, neutral
18	View from outside Piper's Inn at Ballyheefy	Medium	Negligible	Not Significant, neutral
19	View from Tountinna summit across Lough Derg and to Slieve Bernagh	High	Low	Slight-Moderate, neutral
20	View from Quin Abbey towards site	Medium	Low	Slight, neutral
21	View from R466 Between Broadford and Kilbane Junction	Medium	No change.	None
22	View from Moylussa peak at summit cairn	High	Negligible	Not Significant
23	View from opposite Church in Ballina	Medium to High.	None	None
24	View from the waterfront in Dromineer	High	None	None
25	View from Silvermines viewing point	High	Negligible	Not Significant, neutral
26	View from R525 south of O' Briensbridge	Medium	None	None
27	View from R465 north of Broadford	Medium	Moderate	Moderate, neutral

### Summary of Visual Effects

Table 12.36 above summarises the visual effects from the 27 viewpoints and their vicinity. As stated above, the photomontages should be read in conjunction with the Tip Height and Hub Height ZTVs. The visual effects are summarised with reference to residential receptors close to the site, and describing the visual effects to the north, south, east and west of the site.

### Residential Receptors and the immediate vicinity of the site

Viewpoints 13, (Caherhurly), 15 (Ballylaghnan) and 27 (R465 east of site at Ballymacdonnell) represent viewpoints from the vicinity of the site which are close to residential receptors.

Viewpoint 27 represents one of the more open views along the R465, and shows visibility of 7 no hubs or nacelles, several more are partly hidden. It should be noted that many more locations in the vicinity along the R465 were visited, as shown in Figure 12.14 but many views towards the turbines were screened by foreground objects including buildings and vegetation. Several viewpoints were taken close to a number of house clusters along this road but in several instances the turbines were screened by the houses, while visibility may be possible from the rear of the properties, depending on the level of screening.

There are several relatively remote local roads off the R465 to the east and west which are more sparsely populated, and there may be some open views from these locations. These include locations such as Killuran More to the east of the road and Killuran Beg to the west, where open views of the turbines are likely to be available. However, visibility along the R465 is likely to be intermittent. To the south, several locations along the local road (and East Clare Way) at Drummin were visited but no open views were located so visibility here is likely to be considerably less than indicated on the ZTV due to screening.

Other viewpoints which represent residences close to the site include Viewpoint 13, and Viewpoint 15. Viewpoint 13, north of the site at Caherhurly, represents a relatively open view, close to several residences along this section of the road. Though theoretical visibility indicates 17-19 turbines are visible, the photomontage indicates that a number are screened by the vegetation and that even at close proximity to the turbines, they do not appear to dominate.

To the northeast, no open views were located to represent potential visibility from the receptors are also located in Ballybroghan as screening prevented open views. Only partial visibility of blade tips is likely from this area.

View 14 which represents a part of The Bog Road, road with relatively open views where the turbines will be visible. Viewpoint 15 illustrates that there is no visibility from the St Mary's Church, due to screening.

### East of site – R352, R463 Heritage Landscape and Lough Derg (Viewpoints 8,9,10,16,17,18,19,22,23)

East of the site are a high number of visual receptors, which represent the scenic area from summit of Moylussa, to the east and western shores of Lough Derg, and the settlements of Ogonelloe, Killaloe and Ballina.

Immediately to the southeast of the site, Viewpoint 22 represents the view from the summit cairn of Moylussa. This is one a popular walking destination, reached by a trail leads form Ballycuggeran forest recreation area. The viewpoint shows minimal visibility and is considered to have a Not Significant, neutral effect, with a low number of blade tips visible. While visibility would increase to

the northeast, the ZTV indicates that the lower slopes of Moylussa will not have any visibility of the turbines, and the trail to Moylussa also will have little or no visibility due to forestry screening. Much of Ballycuggeran is also screened and views are not likely from this area.

Visibility on the relatively short stretch of the Scenic Route between Ogonelloe and Annacarriga shows little to no visibility, with visual effects ranging from No effect to Slight, neutral effect. Where views are available, as indicated by the ZTV, they will be between 1-4 turbines. View 18 represents a minor road which has similar level of visibility to viewpoint 18. Viewpoint 23 from Ballina is taken to illustrate that there is no visual effect from this scenic location.

Across Lough Derg, the scenic route V01 is represented by viewpoint 10, while views 9 and 19 represent viewpoint locations and recreation areas. Visual effects from this area range from Slight-Slight Moderate and neutral in effect.

#### **South and Southeast of site -R465, 466, Glemonra Valley and O' Briensbridge, Limerick**

Viewpoint 21 represents the view from the R466 (partly a scenic route) which runs along the valley floor. While viewers here would have potential visibility of blade tips only, and low numbers of turbines, this viewpoint showed no visibility and therefore there was no visual effect. Any turbines visible in this location would be likely to have Imperceptible to Not Significant effects.

A distant view to the southeast from the Silvermines viewing point is represented by Viewpoint 25 and this shows a Not Significant visual effect.

Viewpoint 26 represents the road between Castleconnell and O' Briensbridge, which has few open views and considerable screening. The visual effect from this viewpoint is No effect due to screening, but any visibility would be relatively distant (greater than 10km) and of low numbers, between 1-4 turbines, and visual effects would be likely to be Not Significant to Slight. Further east towards Limerick, theoretical visibility is likely to be less in the outskirts of the city.

#### **North of the site Tulla, Feakle, Scarriff/Tuamgraney and Mountshannon and the R352, R461**

Viewpoint 7 represents Bodyke, which shows a clear and open view of the turbines from the outskirts of the village and the effect is considered Significant and adverse. The viewpoint is in close proximity to the turbines and all turbines are visible from a lower elevation. There are likely to be similar views in parts of the R352 road towards Tuamgraney, however roadside vegetation will reduce visibility and visual receptors are fewer. Some open views on elevated roads north of Bodyke may have similar views of a high number of turbines, though there would be further away and from elevated locations, so visual effects would be reduced.

Viewpoint 1 Feakle represents a viewpoint further north from an elevated location on the outskirts of the village, where all turbines are visible but with a Moderate, neutral visual effect. This is representative of these more distant elevated locations, and it should be noted views are not likely to be available from Feakle itself and the lower ground by the River Owenwillin.

Viewpoints 5 and 6 represent views from the R352 at Scarriff/ Tuamgraney, and show that visibility varies considerably from areas where there are no views due to built form, to Moderate adverse (Viewpoint 5) to Slight neutral (Viewpoint 6). While there is little visibility likely from the square in Scarriff, the road descends towards Tuamgraney, and Viewpoint 5 illustrates open views towards the turbines from the R352 south of Scarriff Bridge. Viewpoint 6 at the junction in Tuamgraney village,

however, shows that most of the turbines are screened from view. Open views from the settlement therefore are short in duration.

Further to the northeast along, the R352 continues towards Mountshannon and it is designated a scenic route. This area along the shores of Lough Derg is also designated a Heritage Landscape, and Viewpoints 2,3 and 4 represent the most open views from the scenic lakeshore and on Holy Island on Lough Derg. These views also represent views from the lake itself. The visual effects range from Slight-Slight Moderate in effect, and though the turbines are visible, they are at some distance and views from Holy Island and Mountshannon have panoramic views in other directions.

#### **West of the Site – O’Callaghansmills, Quin Abbey, the R352, R466.**

West of the site, the ZTV indicates theoretical visibility of high numbers (17-19) turbines which are shaded blue on the ZTV, however it also illustrates pockets of no visibility – caused by the drumlin landscape. Visual effects range from Slight neutral in the more distance viewpoint to Moderate neutral visual effects at the closer viewpoint.

Viewpoint 12 (O’ Callaghansmills) shows a view north of the village, between a group of houses where there are partial views to the turbines. While visible, these are considered of Moderate and Neutral visual effect.

Further east, Viewpoint 11 represents an open view along the R352, and the turbines appear relatively distant and clustered with the visual effect considered Slight and neutral. To the southwest, Viewpoint 20 is taken from the rear of Quin Abbey (views from the western side would be blocked by the Abbey itself) where there are views of the turbines, but these are at a considerable distance and of Slight, neutral effect. The town of Ennis lies between 20 and 30 kilometres from the proposed development and is unlikely to experience visual effects at this distance.

### **12.3.4.2 Visual Effects – Offsite Replanting Lands**

#### **12.3.4.2.1 Trillickacurry, Co. Longford**

##### **Magnitude of change**

The area proposed for forestry replanting (20 hectares) is located to the north and south of a cul-de-sac road. The forestry is likely to be visible from these houses at a distance. When young, the forestry is likely to have a negligible magnitude of change, with a Low magnitude of change arising as it matures. The views to the hills in the distance may be obscured as the forestry reaches maturity and this will result in an adverse effect. To the north of the local road, the area to be replanted is adjacent to areas already under forestry and the magnitude of visual change is considered to be Negligible.

##### **Significance of Effect**

The visual effects are considered Not Significant in the short term to Slight when the plantation matures. The quality of the visual effect is considered adverse.

### Ballinaclesh, Ballard, Co. Wicklow

#### **Magnitude of change**

The magnitude of change is considered to be Low as the areas was previously under forestry, and the cycle of felling and replanting is part of forestry activities. However some views to the northwest both from the roadside and from the dwellings may be restricted or obscured by the tree once they are mature.

#### **Significance of Effect**

The significance of effect is considered Not Significant, neutral effect in the short to medium term, but where views are restricted by the forestry may be considered a long term, Not Significant adverse effect.

### Cooraclare, Co. Clare

#### **Magnitude of change**

The magnitude of change is considered to be Low. The proposed planting is small in scale and the views in the wider landscape will not be affected.

#### **Significance of Effect**

The effect is considered Not Significant, neutral effect.

### **12.3.5 Decommissioning Phase**

The Decommissioning phase would include the following changes to the landscape and visual receptors. As outlined in Chapter 2, turbines would be disassembled and removed, and all masts also removed from site. In order to minimise disturbance, cabling will remain in the ground. Hardstand areas will be remediated to match the existing landscape, access roads would remain. (It should be noted that the effects of the Decommissioning phase are assessed using today's receiving environment baseline).

#### **12.3.5.1 Landscape Effects**

#### **Site and Immediate Vicinity**

The landscape of the site is considered of Low sensitivity to the removal of the wind farm in the immediate vicinity of the site.

#### **Magnitude of Change**

The magnitude of change on the site and immediate vicinity would be Low, as the landscape character of the site would be similar to what it is at present, a site which is under coniferous forestry. The changes to the overall landscape fabric (the physical structure) as a result of the decommissioning are considered Low.

#### **Significance of Effect**

The significance of the effect would be Not Significant as the decommissioning would return the landscape to a similar condition to what it is today.



## Landscape Effects – Wider Landscape

### Magnitude of Change

Using today's baseline, following decommissioning of the turbines, the landscape character of the surrounding wider areas would be the similar to what it is today. The magnitude of change on the character of the wider landscape resulting from the decommissioning would therefore be described as no change.

### Significance of Effect

There will be no effect on the wider landscape as the removal of turbines will remove turbine visibility from the surrounding landscape, and therefore be similar to the present baseline conditions.

#### 12.3.5.2 Visual Effects

### Site and Immediate Vicinity

Decommissioning will result in the removal of all 19 turbines, with the access roads, substation and underground cabling remaining. Hardstands will be remediated, and allowed to re-vegetate.

### Magnitude of Change

Once these elements are removed, the site will gradually revert to a similar condition. The magnitude of change is considered to be Low, with the main changes the remaining substation and access roads. The underground cabling will not be visible. Re-vegetation will occur over hardstand areas. At present, it is assumed that commercial forestry is likely to continue on site. The magnitude of change is therefore considered Low compared to the present day and much of the changes will be only noticeable within the windfarm site. The substation is set within forestry but will be clearly visible from the L-8218-0. However this is likely to be a very low number of viewers. The magnitude of change compared to today's baseline is considered Low.

### Significance of Effect

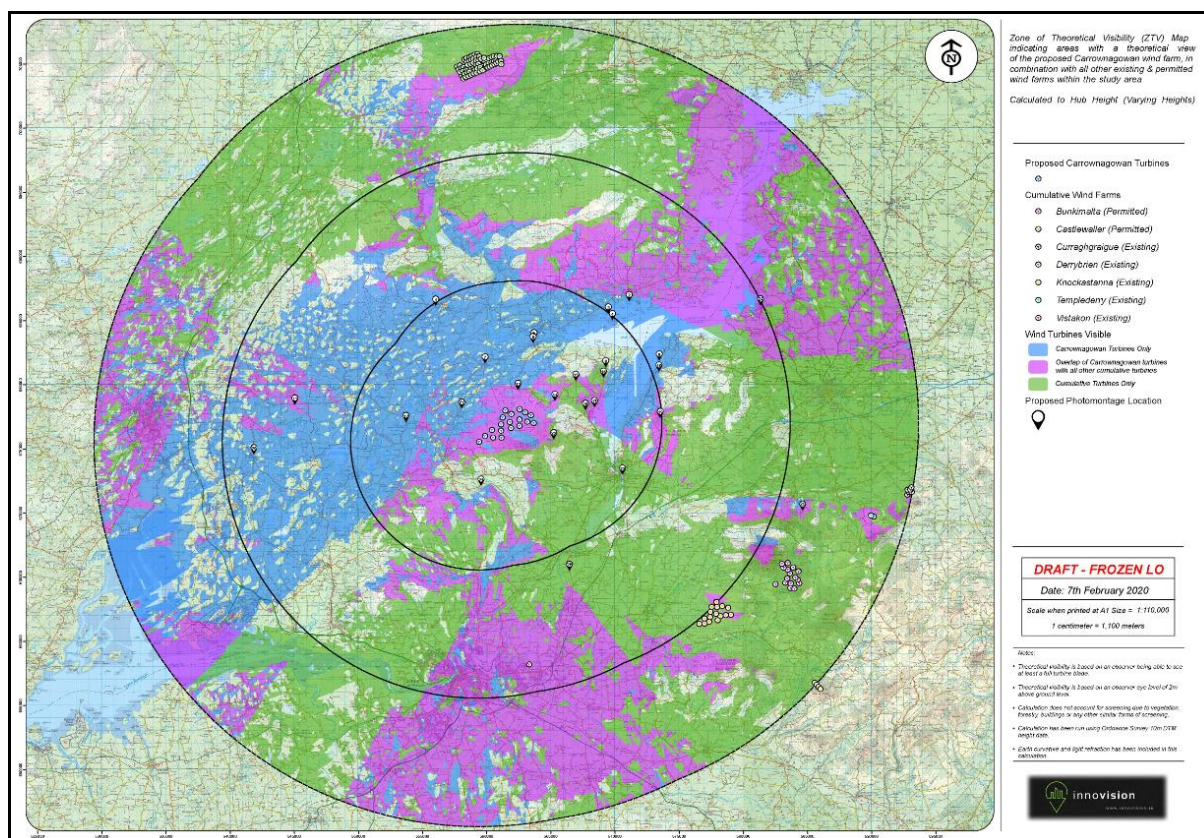
The visual effects following decommissioning is considered to be Not Significant, with a Slight, adverse visual effect in front of the substation on the L-8218. This is however a localised visual effect.

#### 12.3.6 Cumulative effects

Cumulative effects assessment is the assessment of the landscape and visual effects of the development with other existing and/or approved projects. This therefore takes into account any existing or permitted wind energy developments in the vicinity.

These wind farms are all within 20-30 kilometres of the proposed development and so are not in close proximity and the proposed turbines will be distinct from any other turbines which may be visible, due to the distance. These turbines and the Cumulative ZTV are illustrated on Figure 12.13, Volume III and a reduced version is included below. Reference is also made to the theoretical cumulative visibility ZTV under Section 12.2.5 Do Nothing Scenario.

Figure 12-13: Cumulative ZTV Map (reduced version)



The Draft 2019 WEDG state that, in relation to Mountain Moorland:

*The more varied and undulating an area is topographically, the greater its ability to absorb and screen wind energy developments. The aesthetic effect of wind energy developments in these landscapes is acceptable where each one is discrete, standing in relative isolation.*

The wind farms within 30 kilometres include:

- Derrybrien (existing)
- Curraghgruaige (existing)
- Templederry (existing)
- Knockastanna (existing)
- Vistakon (existing)
- Castlewaller (Permitted)
- Bunkimalta (Permitted)

Other cumulative effects are assessed during the Operational Stage:

### Cumulative Landscape Effects

Cumulative landscape effects include the effects as a result of the proposed development along with other wind farm developments on the landscape character.

Due to the distance between the proposed development and the other wind farms, it is not considered that there will be any likely significant cumulative effects on the landscape character.

More localised cumulative effects, at the site level, may arise where forestry operations are ongoing on and around the windfarm site. These are likely to impart a Low degree of change as the forestry operations are ongoing, and result in a Not Significant, localised visual effect in the vicinity of the site.

### Cumulative Visual Effects

Cumulative visual effects are defined in the GLVIA as one of two types:

- Combined - in combination - – where two or more developments are/would be visible in the viewer’s arc of vision at the same time without moving their head
- Combined – in succession – where the viewer has to turn their head to see the various developments – actual and realised.

The photomontages 1-27 allow for the assessment of combined in combination visual effects. There are no other turbines other than the Carrownagowan turbines, visible in any of the photomontages, so these effects do not occur.

Combined – in succession – visibility may occur in several views, namely Views 11,13,14,17 19 and 22 as indicated on the Figure 12.13 Cumulative ZTV. above. At these viewpoints, it is possible that the observer could turn their head and obtain a view of other turbines – in a different direction. The closest permitted turbines are those at Castlewaller which are approximately 20 kilometres from the proposed wind farm. It is considered that the likely effect of any visibility from these locations would impart a Low magnitude of change to the view, and would not be significant.

In relation to forestry activities on site, there is the possibility that clear felling of areas during the operational phase will occur in the vicinity of the site and the surrounding local roads, which has the potential to cause an increase in visual effects, resulting from a combination of forestry felling and the presence of the turbines. due to an increase in open views

## 12.4 MITIGATION (AVOIDANCE AND REMEDIAL MEASURES)

### 12.4.1 Construction Phase

Following construction, the borrow pits that are to be used for rock extraction will be partly filled with overburden and excavated material, and allowed to re-vegetate naturally. The borrow pits will be permanently secured.

The temporary construction compound 1 will be removed and the area re-instated to its natural habitat, following construction.

The areas affected by the off-site works which were carried out to facilitate delivery of turbines will be re-instated set out in Chapter 2. At Coolready, earthworks will create a cut into the topography and the verges of the road should be allowed to re-vegetate naturally. No additional mitigation measures are proposed.

### 12.4.2 Operational Phase

Mitigation with relation to landscape and visual effects of turbines is largely related to mitigation through the design process. Turbines are tall structures and cannot be hidden, but careful siting and design can maximise screening by topography.

The Wind Energy Development Guidelines (2006) and draft guidelines (2019) were followed with regard to the layout to achieve the best layout which minimises adverse effects. The proposed turbine layout reflects the outcome of an iterative design process, whereby the layout was adjusted to minimise visual effects and effects on the landscape character.

The evolution of the overall design and turbine layout included minimising the visual and landscape effects where possible, during the design process. The number of turbines decreased to 19 during the design process, with an initial layout of 31 turbines considered.

- A number of turbine layouts were considered. The initial turbine layout had 31 turbines on the site, with turbines at elevations of between 170 and 400 m OD.
- Subsequent visual studies, including field visits, photomontages, ZTV maps and reverse ZTVs maps were undertaken. Site visits included views from sensitive viewpoints including the summit of Moylussa, and several locations along the Lough Derg shoreline in north-eastern Co. Clare, including Inis Cealtra/Holy Island, and also the Arra Mountains and the scenic route along the Co. Tipperary lakeshore. Reverse ZTVs from Holy Island and Moylussa were carried out.
- Several turbines to the east on the higher ground north of Moylussa were removed from the layout, while a number of turbines were also removed from the western end of the site, as well as from the low ground to the north. This reduced the number of turbines from 31 to 24 and further studies reduced this to 19.
- The evolving design from 31 to 19 turbines greatly decreased visibility of turbines from the summit of Moylussa, and removed visibility of turbines from Killaloe. The design evolution also reduced the number of turbines visible and preventing ‘stacking’ from a number of sensitive locations including several Viewpoints from the eastern (Tipperary) side of Lough Derg. The spatial extent of the windfarm was reduced in several views such as Viewpoint 1 Feakle, and Viewpoint 7 from Bodyke, as well as viewpoints from the Co. Clare shore of Lough Derg, including the view from Holy Island (Viewpoint 3).

#### 12.4.3 Decommissioning and Restoration Phase

As set out in the Project Description Chapter, either repowering or decommissioning may occur. If planning permission is not sought after 30 years, the site will be decommissioned and reinstated with all 19 No. wind turbines and towers removed. Below outlines the likely decommissioning tasks based on today’s requirements and best practice.

At present it is anticipated that underground cables connecting the turbines to the selected substation will be cut back and left underground. The cables will not be removed if the environmental assessment of the decommissioning operation demonstrates that this would do more harm than leaving them *in situ*. Analysis will be carried out closer to the time to take into account environmental changes over the project life.

The substation will remain in place, as part of the National Grid, and hardstand areas will be remediated to match the existing landscape, and allowed to re-vegetate. Access roads will be left for use by the landowners. The current view is that the disturbance associated with the removal and disposal of the elements would be more damaging than leaving them in place. Any structural



materials suitable for recycling will be disposed of in an appropriate manner. Upon decommissioning, all that will remain will be the roads.

The Decommissioning phase is not likely to give rise to significant landscape or visual effects. The landscape will be allowed to regenerate, and, in this case, it is likely that the landscape will return to a similar state as it is today, with forestry operations also continuing.

## 12.5 RESIDUAL EFFECT

The project has been assessed with the mitigation measures which have been implemented into the design and the choice of turbine finishes. No additional mitigation has been proposed. Therefore the residual impacts will essentially be as outlined in Section 12.3 Likely significant Effects

## 12.6 CONCLUSION

### 12.6.1 Summary of Landscape Effects

- The proposed wind farm is located in an area of coniferous forestry on the northern slopes of the Slieve Bernagh Hills in east Co. Clare. This is a designated as Strategic Area/Acceptable in Principle for wind farms in the Clare WES and considered suitable for large wind farms. The WES, in designating these areas, took landscape designations into account and the Landscape Character Assessment of Co. Clare was used as a baseline for the Strategy to assess the capacity of the landscape for wind energy development.
- The Slieve Bernagh Hills are a feature of the landscape with a smooth, rounded profile, and are visible from parts of the surrounding low-lying landscape to the north, including from the eastern and western shores of Lough Derg. The area is relatively remote and accessed by narrow local roads and forestry tracks.
- The site of the proposed development is a commercial forestry plantation and not subject to any landscape designations, and is considered of Low to Medium sensitivity. The landscape in the vicinity of the site is considered to range from Medium to High sensitivity.
- The landscape effects were assessed by combining judgements of the sensitivity and the magnitude of change. The changes are likely to be to the aesthetic and perceptual aspects of the landscape character, with lesser effects on the physical landscape. Effects on the physical landscape are very localised to the site itself, while the changes to the wider landscape character areas relate to the visibility of the turbines. The visual effects on the site itself are considered of Moderate significance, and of neutral quality, while visual effects on the wider landscape range from Imperceptible to Moderate effects on the landscape character and also range in quality.
- The effects on the sensitive landscape character to the east of the site, (LCA 8 Lough Derg Basin) which is a scenic area partly subject to a Heritage landscape designation, with several scenic routes, are considered Slight, neutral effects on the landscape character. The north-



east of the site in the vicinity of Mountshannon to Tuamgraney, and the surrounding Lough Derg shoreline and Holy Island, is considered to have Slight, adverse effects.

- Effects on the landscape character in the wider vicinity depend on the extent to which the wind farm is visible and perceived, and this varies from Imperceptible to Moderate, where visibility occurs.

### 12.6.2 Summary of Visual Effects

- Visual effects have been assessed using a combination of tools, including ZTV maps and Photomontages, combined with several site visits. 27 Viewpoints were chosen to represent a range of receptors, which included selection from a wider list of locations, some of which had theoretical visibility but no actual visibility. The majority of the views represent areas with theoretical visibility, in a range of locations and contexts. Locations with open views were chosen, where possible, and some locations were visited at different times of the year. Photomontages depict both summer and winter views.

### Areas without visual effects

- Section 12.2.4 notes the settlements, including Kilbane, Broadford, Ogonelloe, Killaloe/Ballina, O' Briensbridge, Nenagh and the majority of Tulla are will not have visibility of the proposed development as indicated on the ZTV, so no visual effects will occur. Where the ZTV does show theoretical visibility from settlements, these may in reality be much less due to screening by built form.
- Other large areas which will not have visibility include southern parts of the Slieve Bernagh uplands from the southern slope of Moylussa and Cragnamurragh, to Killaloe and the eastern slopes of Lackareagh. There will be no visibility from large parts of the Slieve Aughty uplands, and large areas of the uplands east and southeast of both Keeper's Hill and the Slieve Feilim uplands. A large area from the eastern flanks of the Arra Mountains in Co. Tipperary, to the east of Nenagh is outside the ZTV and will have no visibility

### General pattern of visibility

The pattern and extent of theoretical visibility is discussed in Section 12.2.3. However it should be noted that the viewpoints reflect the pattern of visibility. Within 10 kilometres of the turbines, 17 of the viewpoints are located, where the visual effects are likely to be pronounced, and there are a high concentration of sensitive visual receptors. The pattern of visibility is such that though there is visibility from areas to the east considered of High sensitivity, lower numbers of turbines are potentially visible. To the north and west, higher numbers of turbines are theoretically visible, though this will be less in reality. The remaining 10 Viewpoints are located between 10 and 30 kilometres.

### Viewpoints close to the site

The view which was considered to have Significant visual effects is view 7, which represents an area north of the site. These are in close proximity to the turbines, where the visual effects are likely to

be pronounced. This represent viewers on the local roads as well as local residents, nearby dwellings and receptors on the eastern side of Bodyke village. Viewpoint 1 from Feakle illustrates a view further north

It should be noted that while open views such as these shown in Viewpoint 7 and Viewpoint 13 are likely to occur in more open areas to the north of the site, these will be juxtaposed with areas of the roads which have high roadside screening, and areas of coniferous forestry which will restrict visibility to the northeast of the site, near Knockbrack and parts of Caherhurly. Viewpoint 15 represents views to the north east from the local church, from where the turbines are screened, and while where there are a number of dwellings in Ballylaghnan, no open views of the turbines are available, and screening reduces visibility.

Other viewers to the west and south west are also likely to have open views resulting in significant visual effects, particularly on the local roads off the R465. Visibility to the south at Drummin and along the East Clare Way was assessed but no open views were found, and visual effects are likely to be less in this location.

#### Viewpoints to the east – Lough Derg and vicinity

Significance of effect in relation to the viewpoints ranges from Moderate to Not Significant, where visibility occurs to the east of the site, in the LCA 8 Lough Derg Basin (and on a small part of the LCA Slieve Bernagh). Views of this sensitive landscape east and north-east of the site on the shores of Lough Derg are represented by a high number of viewpoints. Visual effect ranges considerably through this area, in general visibility is greater from the north east of the area. Significance of effect ranges from Moderate to Not Significant, where visibility occurs. Effects include Slight -Moderate, adverse effects (Viewpoints 2,3,) to the northwest, Moderate and neutral (Viewpoint 14) Slight adverse (Viewpoint 4) and Slight, neutral (Viewpoint 17) and Not Significant, neutral (18,22).

Across Lough Derg, several viewpoints were chosen, some of which have open and expansive views of the lake. The visual effects range from Slight (9,10) and Slight-Moderate (19). View 23 is included though there is no visual effect, as the bridge at Killaloe is a well-known landmark and Killaloe an important town in close proximity to the turbines.

It should however be noted that a number of Viewpoints from the north western shore of Lough Derg, Lough Derg itself and its islands, and some views from the north-eastern shore, have panoramic views of the lake and wider landscape. In these views, the turbines tend to occupy a relatively limited proportion of the view, and in addition, the view is often much wider than portrayed by the camera. Furthermore, and the turbines are not always in the direction of the intended view – in particular see Viewpoint 2.

The nature of the wind turbines is such that unlike a building or solid object, they may intrude upon a view but not obstruct a view. The quality of the effect – whether beneficial, neutral or adverse varies.

The careful siting and design has minimised visual effects in particular from the sensitive Heritage landscape to the northeast and east of the site. Viewpoints closest to the site in the Heritage landscape to the east, have visibility of the lower numbers of turbines. While significant visual effects are likely to occur in close proximity to the site, these are localised effects and range from neutral to adverse in quality.