

13 LANDSCAPE AND VISUAL

13.1 INTRODUCTION

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

The study was informed by a desktop study and several surveys of the site and receiving environment in October 2020. 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 proposed 12 turbine Shronowen Wind Farm near Ballylongford, Co. Kerry. The proposed turbines are 150 metres in height – with a maximum tower height of 82m and with a maximum rotor diameter of 136m. For the purposes of the LVIA these are the dimensions used.

13.1.1 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 13.1.3. These ZTV maps are included at full size in **Volume 4**.

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 in **Volume 4**.

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. This is in excess of the Wind Energy Guidelines (2006) and Draft Wind Energy Guidelines (2019) which state that the ZTV of 20 kilometres is adequate for turbines over 100m, and advise a ZTV radius of 25 kilometres if this would include a landscape of International or National importance. No such landscape lies within 25 kilometres of the proposed development. The assessment of landscape and visual effects is concentrated on an area approximately 20 kilometres radius from the proposed turbines as this is where the landscape and visual effects are likely to be most pronounced.

Aerial imagery, OSI Discovery series mapping, CORINE Landcover Maps (2018) were all reviewed to gather accurate information on the study area.

13.1.2 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.

13.1.2.1 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.

13.1.2.2 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)
- Kerry County Development Plan 2015-2021
- Clare County Development Plan 2017-2023
- Limerick County Development Plan (as extended) 2010-2016

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.

13.1.2.3 Assessment of Both 'Landscape' and 'Visual' Effects

Another key distinction to make in a LVIA is 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 site visits, which were carried out in 2020.

13.1.2.4 *Assessment Criteria*

13.1.2.4.1 Landscape Assessment

In Section 13.3 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.

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 in 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 13.2, while Landscape Susceptibility and the overall Sensitivity is discussed in Section 13.3.

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

Table 13.1: 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 13.2: 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 13.3: 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.

13.1.2.4.2 Methodology for Visual Assessment

In Section 13.3 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 Section 13.3. For the purpose of assessment, five categories are used to classify a viewpoint's sensitivity:

Table 13.4: 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 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 13.5: 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 adverse. 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 impacts 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 an objective assessment of its likely landscape and visual impacts.

13.1.2.5 Zone of Theoretical Visibility (ZTV) Maps

ZTV Maps that are produced indicate theoretical visibility and are based on topographical information (the data supplied 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; and
- 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 fully described in Section 13.3.2 and illustrated in Figures 13.7 and 13.8. The full size versions are included in **Volume 4 Photomontages**.

13.1.2.6 Visualisations /Photomontages

A set of 20 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 Media Ltd. and are included in the Photomontage Booklet in **Volume 4**.

Where applicable, Innovision Media 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

13.1.3 Statement on Limitations and Difficulties Encountered

On appointment of CSR to the project, some of the visualisations were already prepared. Following the site visit and study of the area, a list of additional views was then drawn up and a number of additional views captured. However, one potential viewpoint location identified – Scattery Island – was not accessible. The island closes for the winter months from September to May, and therefore instead of visiting the site and including a photomontage, a wireframe view (described in Section 13.3) was taken. In addition, Level 5 Covid-19 restrictions meant that an out of season visit was not possible to arrange. The Covid-19 restrictions also resulted in a reduced number of site visits.

13.1.4 Competency of Assessor

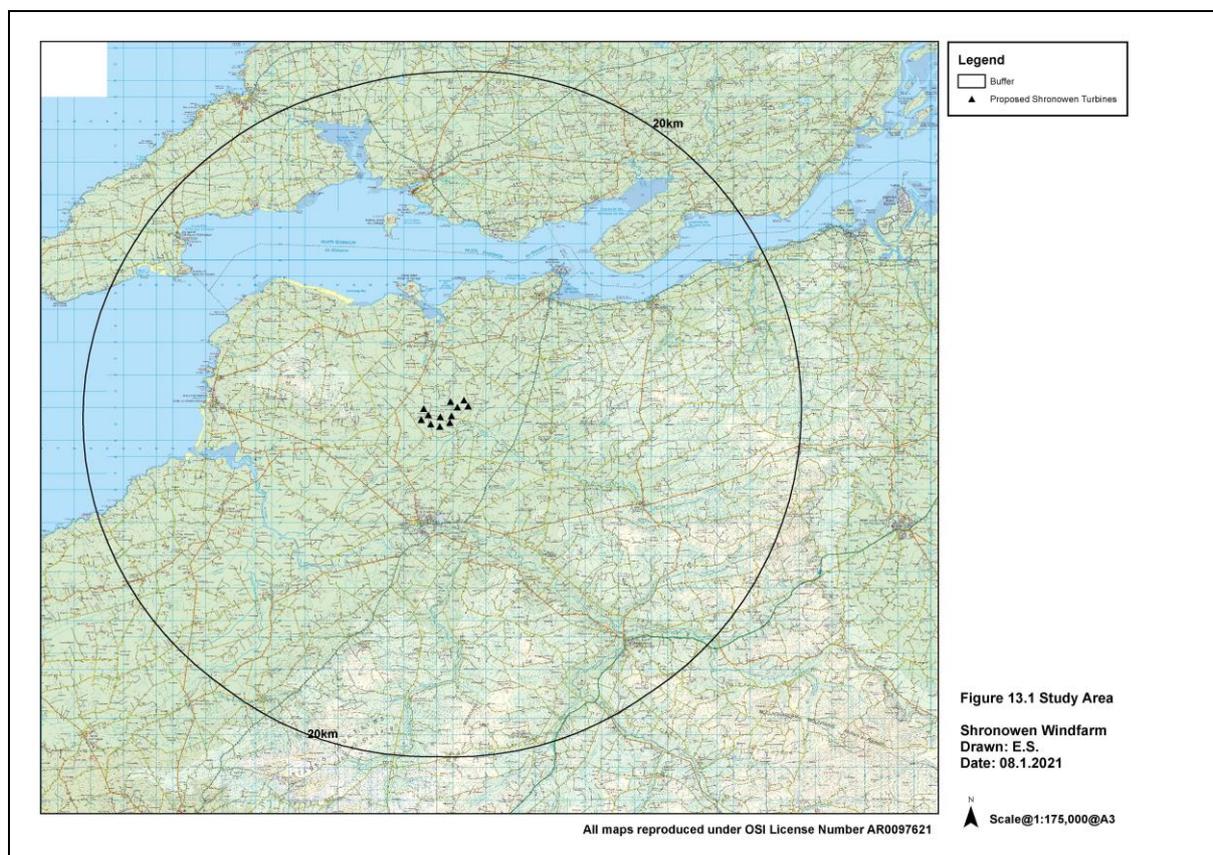
This Landscape and Visual Assessment was carried out by Evelyn Sikora, BA MA, MILI. She has over five years' experience in Landscape and Visual Assessment (LVIA), and has worked on the Landscape and Visual assessment for a range of wind energy developments through Ireland, from single turbine developments 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.

13.2 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 in the north west of Co. Kerry, approximately 3.6 kilometres southeast of the village of Ballylongford. The study area for the landscape and visual assessment extends to a distance of 20 kilometre radius from the proposed turbines, while the ZTV extends to 30km from the turbines. This exceeds the area recommended by the DOEHLG (2006) and DHPLG Guidelines (2019) 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 shown in Figure 13.1 (a reduced version is included below) and is contained in **Volume 3** Appendices (Appendix 13-1) at A3 size.

Figure 13.1 Study Area (reduced version)



13.2.1 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. Kerry, some parts of the wider study area lie within Co. Clare, on the northern shore of the Shannon Estuary. The distance from the most northerly turbine to the closest point on the Shannon Estuary (Moneypoint) is approximately 10 kilometres. Sections of the study area also fall within Co. Limerick, the County boundary lies approximately 7.4 kilometres east of the nearest turbine.

13.2.1.1 Kerry County Development Plan 2015-2021

The Kerry County Development Plan, (hereafter referred to as the Plan) was reviewed for this assessment, including the Renewable Energy Strategy (RES) which includes a Landscape Character Assessment produced in 2012.

Chapter 12 Zoning and Landscape of the Kerry County Development Plan contains objectives and policies relating to landscape character, zoning and views and prospects.

Policy ZL-1 states that it is an objective of the Council to:

Protect the landscape of the County as a major economic asset and an invaluable amenity which contributes to the quality of people's lives.

Policy ZL-2 relates to Landscape Character Assessment:

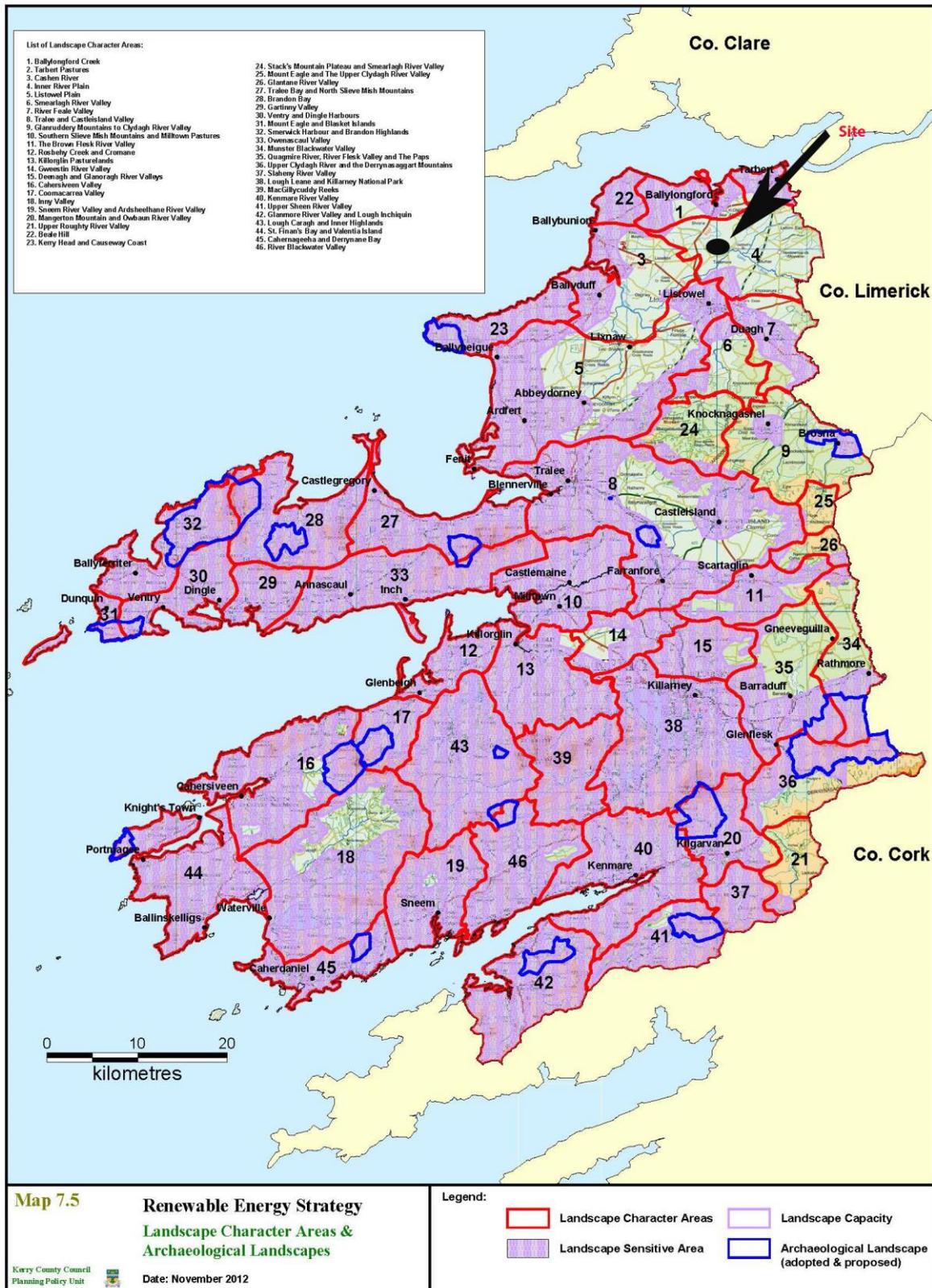
Prepare a Landscape Character Assessment of the County following the publication of the proposed National Landscape Strategy. This assessment will include capacity studies for different forms of development and will involve consultation with adjoining local authorities.

13.2.1.1.1 [Landscape Character](#)

The Plan refers to the variation in landscape character throughout the County, and refers to the Renewable Energy Strategy prepared in 2012, which identified 46 Landscape Character Areas (LCAs). The Plan also notes the importance of intangible values in landscapes - cultural, historical and literary values.

Figure 13.2 below shows the map of the 46 Landscape Character Areas (LCAs) within Co. Kerry, and the proposed development as located in LCA 4 Inner River Plain. A more detailed map and discussion of LCAs is included further on in this section.

Figure 13.2: Landscape Character Areas in Co. Kerry



Further details of the Landscape Character Assessment for the areas in the vicinity of the site are outlined below.

13.2.1.1.2 Landscape Zoning

The Plan recognises that different landscapes within the County have different qualities, as well as different capacity to absorb development. Relevant landscape designations for Co. Kerry and adjacent counties within 20 kilometres of the proposed development are illustrated on Figure 13.3 Landscape Designations and Views.

The Plan contains a number of zoning categories for rural areas, which are as follows:

- Urban
- Rural Prime Special Scenic Amenity
- Rural Secondary Special Amenity
- Rural General
- Tarbert/Ballylongford Landbank (Industrial)
- Shannon Estuary (Land and Marine Development)

Several of these zonings are found in the vicinity of the site, while the site itself is zoned Rural General. This is described as areas which, according to the Plan:

“have a higher capacity to absorb development than the previous rural designations. It is important that development in these areas be integrated into their surroundings in order to minimise the effect on the landscape and to maximise the potential for development”.

There is an area of Rural Secondary Special Amenity approximately 4.2 kilometres north of the site, which extends from the eastern shore of Ballylongford Creek, along the estuary coast as far west as Leck Point, north of Ballybunion. Directly south of this, an area of Prime Special Scenic Amenity extends along the coast as far as Ballybunion, while another area is designated just south of Ballybunion and includes the beach. The closest area of Prime Special Scenic Amenity is approximately 12.6 kilometres west of the proposed turbines.

Prime Special Amenity Areas are described as ‘*very sensitive and have little or no capacity to accommodate development*’ while Secondary Special Amenity Areas are described as *sensitive to development, and accordingly development in these areas must be designed so as to minimise the effect on the landscape*’.

These designations and others are illustrated in Figure 13.3 in **Volume 3 Appendices** (Appendix 13-1) and a reduced version (not to scale) is included below. This illustrates landscape and scenic amenity designations within 20 kilometres of the proposed turbines.

Figure 13.3: Landscape Designations within Study area (reduced)

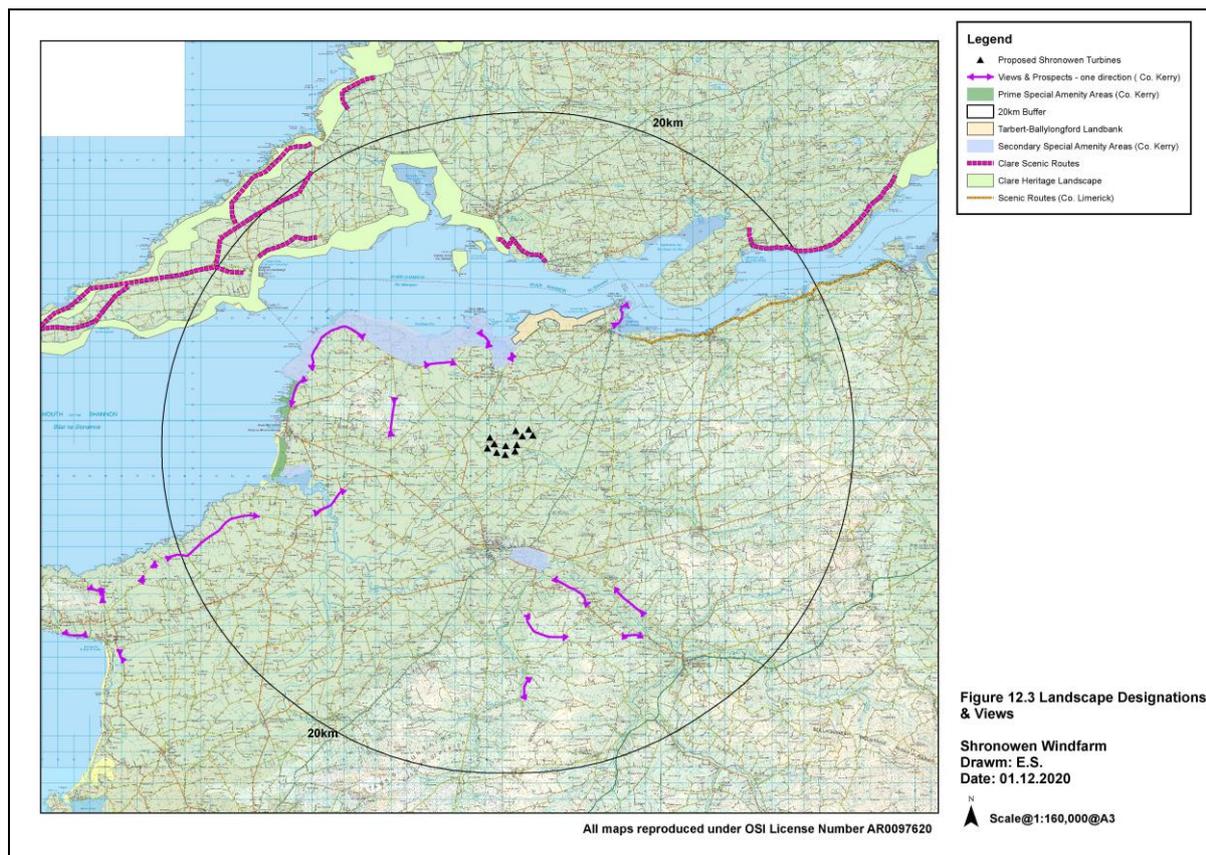


Figure 13.3 also shows that two other industry related zonings are within the 20km radius of the turbines – the Tarbert/Ballylongford landbank is an industrially zoned area approximately 5.4 kilometres north of the nearest turbine, and this zoning extends along the coast west of Saleen as far as Tarbert. The Shannon estuary is approximately 6 kilometres north of the northernmost turbine.

13.2.1.1.3 Views and Prospects

The Plan has identified a number of views and prospects which are considered important to the amenity of the County as well as to the tourist industry. These views and prospects include views along walking, cycling and driving routes and include viewpoint along the Wild Atlantic Way. These are identified in Volume 3 of the Plan and are included in Figure 13.3 (reduced version above) contained in **Volume 4** of this EIAR.

There are several views/prospects identified within 20 kilometres. These viewpoints are divided into views facing in a single direction, or in both directions. These are illustrated on Figure 13.3 as the direction of view is important in considering potential effects. No written description is provided in the Plan, but general locations and view direction are included In Table 13.6 below.

Table 13.6: Scenic Routes in Co. Kerry – 20km

Location and Description	Direction of protected view	Distance form nearest turbine (approx.)
View from local road east of Knockanore Mountain	East (towards site)	6.07km
View from R561 between Asdee and Ballylongford	North (away from site)	5.2km.
View from local road between Lislaughtin Friary and Saleen Pier	Northeast (away from site)	4.6km
View from N67 between Tarbert and Tarbert Pier	East (away from site)	8.4km
View from coast road between Asdee and Ballybunion	North and West (away from site)	10.2km
View from R551 at Ferry Bridge and environs	Northwest (away from site)	9.6km
View from sections of local coast road southwest of Ballyduff	Northwest (away from site)	15km

Of these views listed above, the only view towards the site is that from the road east of Knockanore Mountain, which is in the direction of the site.

The relevant policy from the Plan states:

13.2.1.1.4 [Landscape Character Assessment and Renewable Energy Strategy \(RES\)](#)

The Development Plan contains the following objective in relation to the Renewable Energy Strategy::

EP-11 *Implement the Renewable Energy Strategy for County Kerry (KCC 2012)*

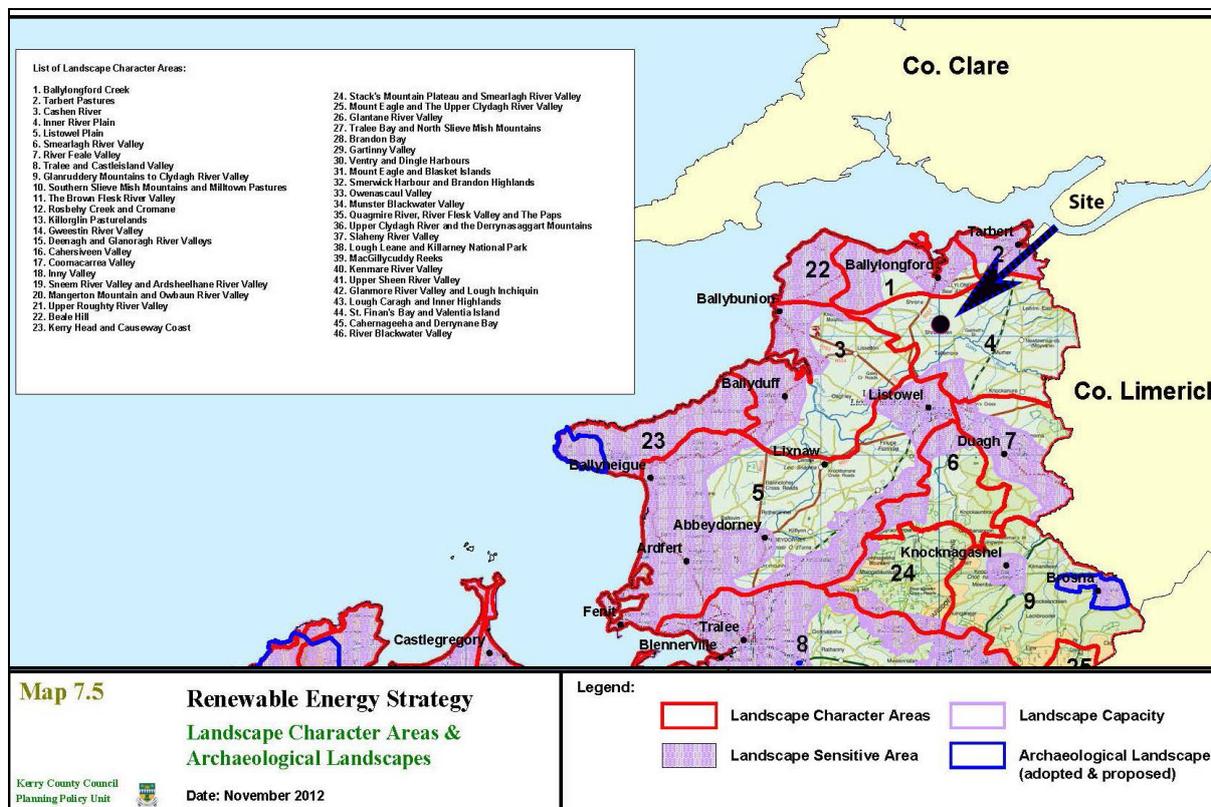
As the current Plan refers to the Renewable Energy Strategy and the LCAs contained therein, the RES was reviewed with reference to the landscape character areas in the vicinity of the site. This assessment, as noted above, categorises the site in the Inner River LCA.

This Assessment identifies a number of LCAs with differing characteristics in the vicinity of the site, and these are briefly described below. The components and characteristics of the LCAs are described and there is a description of the 'Development Capacity' of the LCA. The Assessment also states the wind energy designation. These are:

- Strategic Search Areas
- Open to Consideration

The LCAs within the study area in Co. Kerry are illustrated on Figure 13.4 below:

Figure 13.4: Landscape Character Areas in vicinity of the site



These are described in the Assessment as follows:

Inner River Plain LCA 4

This LCA extends from the summit of Knockathea on the Co. Limerick border, to Knockanore mountain in the west. It extends to just north of Listowel in the south, and just south of Ballylongford, in the north. The centre part of the LCA consists of generally flat lands. The Assessment notes that the landscape varies in scale from the large open moorland in the higher ground to a small patchwork of pastoral fields on the lower ground. An area of peatland is also noted. (This would include the site of the proposed development). The Assessment notes that the human influence is High, with numerous dwellings and a dense network of roads. Knockanore Mountain is noted as a prominent feature, and the landscape quality is described as 'not having any particular qualities'. It notes that turbines are permitted in Leanamore and Tullahennel – these are now built.

Development Capacity

The Development Capacity summary concludes that the landscape is open and inhabited, and that there is scope for further consideration of wind energy development in the north of the LCA, and notes that it is zoned Open to Consideration for wind energy. The Assessment refers to the higher

ground to the east, near the border with Co. Limerick, and notes that there is significant capacity in this area and it is zoned Strategic. The part of the LCA where the site is located is zoned 'Open to Consideration'.

Ballylongford Creek LCA 1

This LCA lies along the coast, north of the Inner River Plain LCA and in close proximity to the site itself. The LCA boundary is located approximately 2 kilometres north of nearest turbine, at its closest point. This LCA includes the village of Ballylongford and extends to Letter Point on the coastline northwest of Asdee and east to Ballylongford Bay, including Carrig Island. Knockanore Mountain defines the LCA to the south west.

The landscape in general is composed of small features including fields, and the landscape is composed of small-scale units, overlooked by Knockanore which is prominent and regarded as a landmark which is visible from the mainly flat surrounds. Moorland is present in the northeast slopes of Knockanore, with pastureland and some marginal land on the lower ground. The human influence is considered High, and this is described as a managed landscape with numerous dwellings outside of settlements with a dense road network. The beach at Letter, as well as Carrig Castle and Lislaughtin Abbey are noted. Views to and from Knockanore and towards the Shannon Estuary are noted.

Development Capacity

The Development Capacity of the LCA notes the importance of the assessment of landscape capacity, given that several permissions are extant (these have now been built). The Assessment describes the area east from Tunnahennel, and it is considered as Open to Consideration. The Assessment considers the area in the vicinity of Knockanore Mountain has no capacity for wind energy development given the dominance of the landform and the views to and from the mountain.

Tarbert Pastures LCA 2

This LCA is located approximately 3.6 kilometres northeast of the nearest turbine and takes in the area around Tarbert, extending along the shore from Tarbert, west to Knockfinglas Point and south as far as Dooncaha and Tarmonhill. The scale is small scale with gently undulating landform. The landcover is mainly pasture, with an area of oak woodland around Tarbert. This is described as an area with High human influence, with numerous dwellings outside of the settlements of Tabert, and a dense network of roads. Tarbert power station and stacks is noted as a prominent feature of this LCA. Walks between Tarbert and Tarbert Island are noted.

Development Capacity

The Development Capacity summary notes the land zoned industrial (Ballylongford Landbank) along the estuary, and notes that there is capacity for wind energy outside of this area. The area around Tarbert with its wooded setting is noted as an area requiring protection. Additional wind development 'of a limited extent' to the Gurteenavallig turbines is considered not to significantly change the nature of the landscape. The area is zoned as Open to Consideration.

Cashen River – LCA 3

This LCA is located approximately 1.2 kilometres southwest of the nearest turbine. It extends over most of the Cashen River valley, from just north of Ballybunion, including the southwestern slopes of

Knockanore, and the higher ground of Farranastack, Knockenagh and Coolkeragh. The extent of this crosses the Galley river north of Lixnaw with the eastern boundary near Ardoughter to the west. The topography is generally flat, apart from the higher ground around Knockanore Mountain in the northeast of the LCA. The area has small features otherwise, with the landcover mainly pastureland with some marshy areas. Like the other LCAs in the h area, this is described as an area with high human influence and with a high number of dwellings in the countryside, outside the main village (Ballyduff) and a dense network of roads. The Assessment notes that Knockanore are prominent features of this landscape, and that the landscape is attractive but typical of many parts of North Kerry. The masts and residential dwellings on Knockanore Mountain, however, are noted also. The views from the Ferry Bridge (out towards the sea) are noted. Other views towards the Stacks Mountain, Kerry Head, and to the Slieve Mish mountains area available. Ballybunion is noted an important amenity area, however in terms of landscape quality the coastal area is described as undermined by residential development.

Development Capacity

The Development Capacity Summary notes that certain areas – lands either side of the Crompaun River, CASHEN River, Galey River, are marginal, sparsely populated and considered to have some capacity for Wind Energy Development. It is stated that turbines of over 75m in height would be considered overly dominant. It is zoned as Open to Consideration.

LCA 5 Listowel Plain

This LCA lies approximately 4 kilometres south of the proposed development, at its closest point. This is a large LCA, extending from the immediately environs of Listowel in the east, to the coast at Ballyheige in the west. The LCA extends along the coastline south to include Banna strand and Fenit, and extending north of Tralee, along the base of the Stacks Mountains. The area is described as generally flat land, with some low hills near the coast and generally pasture and some arable lands with few trees. This is a landscape with high levels of human influence, and a high level of dwellings outside settlements with a high density of roads. Features of amenity value include Banna strand, several golf courses, and the North Kerry Way. There are some views to Kerry Head and Knockanore, which are prominent in the otherwise low lying areas.

Development Capacity

The Development Capacity Summary notes that the landscape is generally flat, with no prominent features (though it references views outside of the LCA). The landscape is not considered to have outstanding landscape qualities and is zoned Open to Consideration. It is also noted that turbine height may be an issue in some parts of the LCA with hub heights of 50-75m considered appropriate in some areas and landscape capacity and residential amenity to be considered in certain areas.

LCA 22 Beale Hill

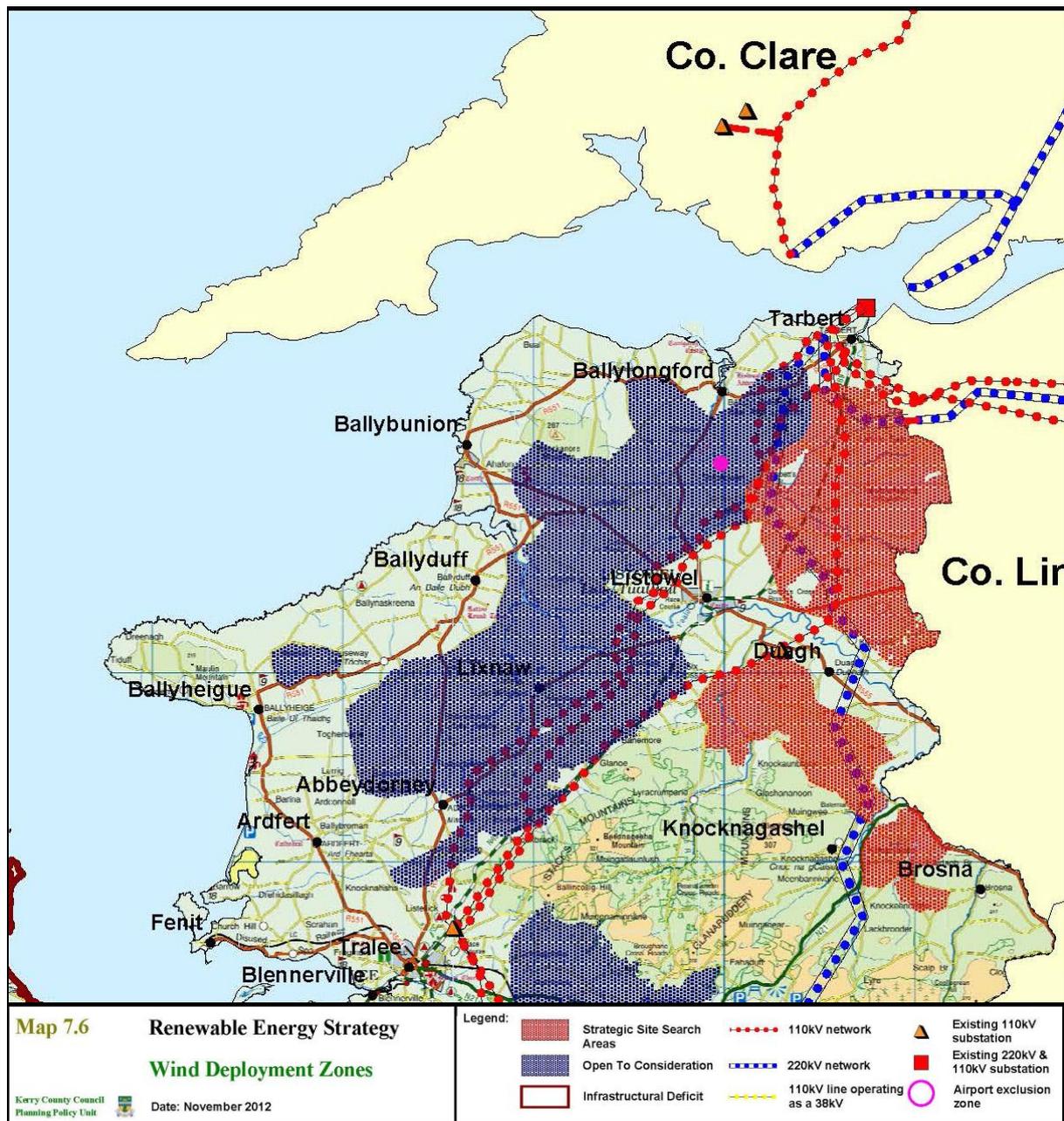
This is a small LCA, approximately 7.4 kilometres west of the closest proposed turbine. The landform is that of a small hill, in the north of the LCA, which slopes to the coast. The LCA is partly enclosed by two ridges of higher ground to the south and east of Knockanore mountain. The landscape is considered small scale apart from Knockanore mountain, and of grassland landcover. It is considered a landscape of High human influence. The most prominent feature of the LCA is considered to be the open and panoramic views to County Clare, across the Shannon estuary.

Development Capacity

The development capacity section describes this LCA as a highly scenic area, with a number of designations (Secondary Special Amenity and protected views towards the coast). It considers there is no capacity for additional windfarm developments.

Map 7.6 from the Renewable Energy Strategy is included as Figure 13.5 – see below. The site location is indicated by a pink dot. This shows the site is located in an Open to Consideration area for wind energy, and is adjacent to a Strategic Search area.

Figure 12.5: Wind Deployment Zones in north Co. Kerry (extract from RES)



13.2.1.2 Clare County Development Plan 2017-2023

The Clare County Development Plan (hereafter referred to as the Clare 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.

13.2.1.2.1 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:

- **Settled Landscape** – areas where people live and work
- **Working Landscapes** – intensively settled and developed areas within Settled 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

Heritage Landscapes

The 20km Study area includes some sections of south Co. Clare, on the opposite side of the Shannon Estuary. This coastline includes a small area of Heritage Landscape, (indicated in Figure 13.3) near Kilrush, approximately 11 kilometres north of the proposed turbines at its nearest point. This area of Heritage Landscape extends from Kilrush west along the coast of Poulaskerry Bay, along the coast to Carrigaholt and Loop Head. The Heritage Landscape also includes Scattery Island, which lies in the estuary, south of Kilrush and is known as a monastic site. Scattery Island is approximately 10.8 kilometres north of the proposed development.

13.2.1.2.2 Views and Prospects

Section 13.5 of the Clare County Development Plan contains a number of objectives in relation to scenic routes. A list of scenic routes is included in Appendix 5 of the Plan.

Several scenic routes are within 20 kilometres of the proposed development. These are listed below in Table 13.7 and shown on Figure 13.3. However only some will experience visibility. The closest scenic route is Route 19, the coast road which lies between Kilrush and Moneypoint where views are in the direction of the proposed development.

Table 13.7: Scenic Routes in Co. Clare – 20km

Scenic Route No.	Location and Description	Distance to nearest turbine (approx.)
17	R487 from outside Carrigaholt to Loop Head	18.9km
18	Along coast road from Carrigaholt to Doonaha	16.7km
19	Coast road south east of Cappagh to Carrowdotia South	10.6km
20	R473 from outside Labasheeda to T-junction before Kiladysert	18.2km

13.2.1.2.3 Landscape Character Assessment of County Clare

The landscape designations in County Development Plan have evolved over the years. The Clare Plan refers to the Landscape Character Assessment of Co. Clare (2004), hereafter referred to as the Assessment. 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 County is divided into 21 LCAs, several of which lie within the 20km study area, which are described below:

The relevant Landscape Character Areas are as follows:

LCA 18 Shannon Estuary Farmlands

This LCA is approximately 10.1 kilometres north east of the nearest proposed turbine. This LCA extends along the Shannon estuary, from Ballynacally in the north, including the Labasheeda peninsula and as far west as Kilrush. The key characteristics of this LCA are described as a prominently ridged landscape, with linear hills aligned east-west to north-east and a flat coastal ridge sloping to the sea. Some areas have open views towards the Shannon estuary and over to Limerick. Scattery Island is noted as an important historical and focal feature. Settlement is described as scattered with a number of settlements. The landscape condition varies, from areas with a traditional landscape pattern to the Kilrush area which has been adversely affected by holiday home development. The Moneypoint power station and pylons, is described as a large-scale detractor on the Shannon. The area around Clonderlaw Bay is noted as a scenic and sensitive area.

LCA 21 Loop Head Peninsula

This LCA extends along the Shannon estuary from west of Kilrush to Loop Head, and at its closest point is approximately 14 kilometres northwest of the nearest turbine. The key characteristics include flat peninsular farmland, with indented estuaries, and a dramatic coastline as one approaches Loop Head. The sea is a key presence in the LCA, and the area is described as remote and detached. Settlement is concentrated in Kilkee and the southern part of the peninsula.

The landscape is described as being in good condition, and 'increasingly intact' as one travels further west where traditional settlement patterns are largely unchanged with few areas of tourist related development. The report notes there are expansive views from the southern coast to Kerry. (This coastline is described as visually sensitive and is designated as a Heritage Landscape in the current Development Plan).

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

13.2.1.3.1 Views and Prospects

There are number of views and prospects identified in Map 7.6 of the Limerick County Development Plan. Two of these views lie within the 20km study area, (see Figure 13.3) but neither are within the ZTV Landscape Designations and Figure 13.7 Hub Height ZTV,) so there will be no theoretical visibility.

13.2.1.3.2 Landscape Character Assessment

Shannon Coastal Zone LCA

The Shannon Coastal Zone LCA lies approximately 7.9 kilometres east of the nearest proposed turbine. It comprises a large area of northern Limerick extending east and south of Glin, along the estuary and is defined by the estuary itself. The ground gradually rises to the south, leading to the agricultural lands and western hills to the south. The landscape is described as enclosed farmland. In certain areas, wind energy is considered open for consideration, but certain design guidance applies, with other areas being considered unsuitable.

Western Uplands LCA

This is described as an upland area, approximately 8.8 kilometres southeast of the nearest proposed turbine. The LCA begins approximately 5km south of Newcastle West and extends to include Barnagh Gap/Sugar Hill area. This LCA has an upland character with the Barnagh Gap area considered an area of important character. The landcover includes improved grassland with blocks of coniferous forestry, which is a component of the area. This area is open to consideration for wind energy development.

13.2.1.4 *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 site of the proposed development is considered to include both elements of Hilly and Flat Farmland, and Transitional Marginal Land. While the land on which the turbines are proposed is

actually peatland, it does not have the characteristics of Flat Peatland as outlined in the above guidance – this relates to large scale peatlands, some of which were used for peat harvesting and are in large scale open and remote landscapes.

The site of the proposed development is considered to have qualities of both Hilly and Flat Farmland, and to a lesser extent, Transitional Marginal land. However, while the site itself can be referred to as peatland, appearing large in scale from parts of the site to the east, the majority of the viewers will experience views from the landscape character types as noted above.

Siting and Design Guidance for Hilly and Flat Farmland

This is defined as intensively managed farmland with a patchwork of fields, and is a working and inhabited landscape. Important considerations include that of the scale and the regard for the surrounding houses, farmsteads and population.

Location: *(Defined as elevation and position of the wind energy development). Location on ridges and plateaux is preferred, not only to maximise exposure, but also to ensure a reasonable distance from dwellings. Sufficient distance should be maintained from farmsteads, houses and centres of population in order to ensure that wind energy developments do not visually dominate them. Elevated locations are also more likely to achieve optimum aesthetic effect. Turbines perceived as being in close proximity to, or overlapping other landscape elements, such as buildings, roads and power or telegraph poles and lines may result in visual clutter and confusion. While in practice this can be tolerated, in highly sensitive landscapes every attempt should be made to avoid it.*

Spatial Extent: *(This is defined as the area covered by a wind energy development, reflecting the number of turbines and their spacing.) This can be expected to be quite limited in response to the scale of fields and such topographic features as hills and knolls. Sufficient distance from buildings, most likely to be critical at lower elevations, must be established in order to avoid dominance by the wind energy development.*

Spacing: *The optimum spacing pattern is likely to be regular, responding to the underlying pattern field pattern. The fields comprising the site might provide the structure for spacing of turbines. However, this may not always be the case and a balance will have to be struck between adequate spacing to achieve operability and a correspondence to field pattern.*

Layout: *The optimum layout is linear, and staggered linear on ridges (which are elongated) and hilltops (which are peaked), but a clustered layout would also be appropriate on a hilltop. Where a wind energy development is functionally possible on a flat landscape a grid layout would be aesthetically acceptable.*

Height: *Turbines should relate in terms of scale to landscape elements and will therefore tend not to be tall. However, an exception to this would be where they are on a high ridge or hilltop of relatively large scale. The more undulating the topography the greater the acceptability of an uneven profile, provided it does not result in significant visual confusion and conflict.*

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

Siting and Design Guidance for Transitional Marginal Landscapes

Key characteristics of Transitional Marginal Landscapes include elements of Mountain Moorland and farmland, involving a mix of fields, tight hedgerows and shelterbelts. Lower areas are usually cultivated and managed as fields while higher areas tend to be wet and boggy. Houses and farmsteads are common in this landscape type, and this landscape type bridges the more intensively managed farmland and the more naturalistic moorland. Siting and design guidance is as follows:

Of the two character types referred to above, the one which will represent the majority of the areas over which the windfarm can be experienced is considered to be Hilly and Flat farmland. As for the Hilly and Flat Farmland, the key consideration is respect for scale and human activity.

Location: *As wind energy developments, for reasons of commercial viability, will typically be located on ridges and peaks, a clear visual separation will be achieved from the complexity of lower ground. However, wind energy developments might also be located at lower levels in extensive areas of this landscape type, where they will be perceived against a relatively complex backdrop. In these situations it is important to minimise visual confusion such as the crossing by blade sets of skylines, buildings, utility lines and varied landcover.*

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

Spacing

All options are possible, depending on the actual landscape characteristics. However, irregular spacing is likely to be most appropriate, given the complexity of landform and land cover typical of these landscapes, and the absence of extensive swaths of fields of regular and rectilinear pattern.

Layout *The likely location of wind energy developments on ridges suggests a linear or staggered linear layout whereas on broader hilltops they could be linear or clustered. Grid layouts are less likely to succeed aesthetically unless there is an open continuity of similar landcover.*

Height: *In small-scaled enclosed areas, short turbines are preferred in order to avoid their spatial dominance and to ensure visual balance. However where the upper ground is relatively open and visually extensive, taller turbines may be more appropriate. In terms of perceived height, the profile can be even or uneven, depending on the profile and visual complexity of the terrain involved. The more rugged and undulating, the greater the acceptability of an uneven profile provided it does not result in significant visual confusion and conflict.*

Cumulative effect: *This would have to be evaluated on a case-by-case basis, but great caution should be exercised. The spatial enclosure often found in transitional marginal landscapes is likely to preclude the possibility of seeing another wind energy development. However, should two or more wind energy developments be visible within a confined setting a critically adverse effect might result, depending on turbine height and wind energy development extent and proximity.*

13.2.2 Receiving Environment – Landscape and Visual Context

In this section, the study area is described under several headings including landform and landcover and settlement pattern. The site itself and the immediate vicinity is first described followed by a description of the wider landscape, in order to fully set the context.

13.2.2.1 *Topography and drainage*

The site is located in an area of peatland, Shronowen Bog, which is generally flat but with some variation, with elevations ranging from approximately 25-100 metres OD across the site.

The landscape around it is generally flat, with a large plain around Listowel and to the south and south west around the river Cashen. One of the most obvious landmarks in the vicinity of the site is (Knockanore Mountain) to the west. This mountain also forms a backdrop for two wind farms located to the east, Tullahennel and Curraderrig, when seen from the east. There is some higher ground to the east, south of Tarbert and Glin, along the boundary with Co. Limerick which is visible from the site and surrounds. Further to the east and south-east, the hills of Sugar Hill, and Knockanumpuha are part of a ridge of higher ground, while to the west on Kerry Head, a small area of higher ground is found. South of Listowel, the Stacks Mountains are a distinctive element of the wider topography, and also a location of a number of wind farms.

To the north of the site, across the Shannon Estuary, the more undulating coastal landscape of Co. Clare gently slopes away from the coast. There are similarities between the north Kerry coastline, near Tarbert, and the area across the estuary, near Moneypoint. Both have scenic aspects to their surroundings, yet also have a strong industrial character as evidenced by the prominent power stations on both sides of the estuary, and the associated infrastructure. There are also a number of wind turbines at Moneypoint. The topography also allows intervisibility across the estuary, so that elements of the opposite shores influence the character of both coastlines.

Plate 13.1: View of Shannon Estuary, the North Kerry coastline and Tarbert power station



13.2.2.2 *Land Cover*

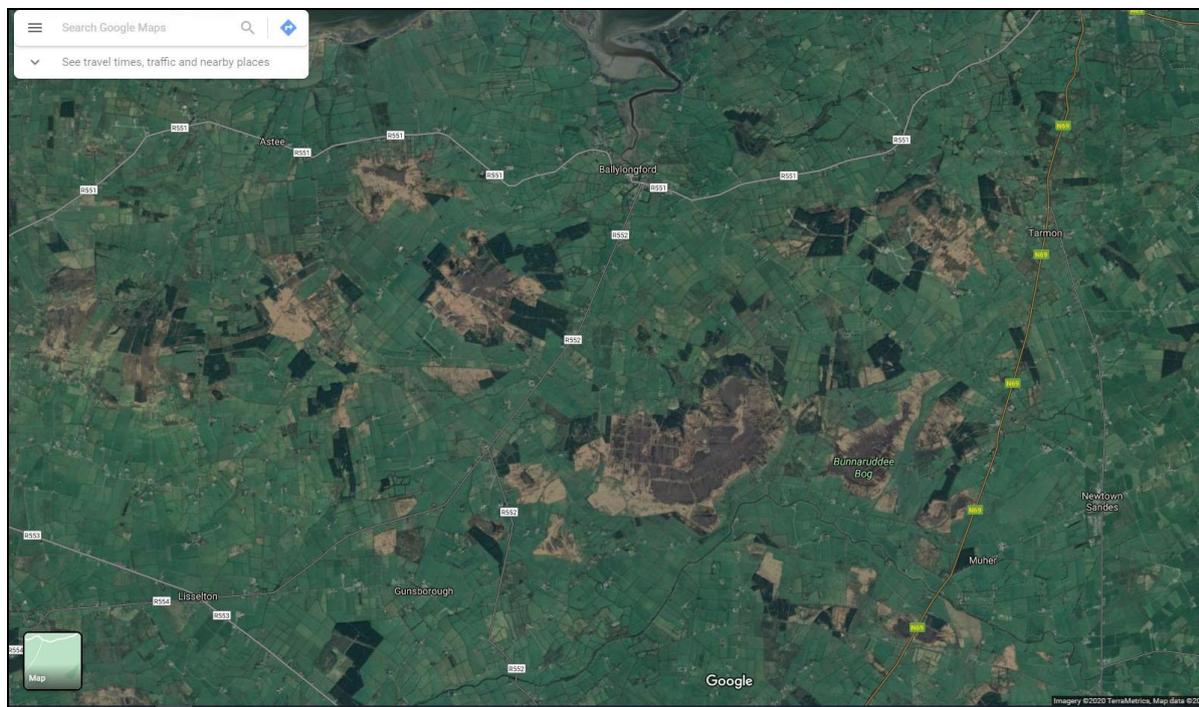
Land Cover on the site itself is peatland, with areas covered by vegetation, including heath and wet grasses, as indicated by the Viewpoints 12,13 and 15 in the Photomontage Booklet (contained in **Volume 4**). Several blocks of coniferous plantation are located within the site boundary, with some areas of marginal or wet grass and scrub. Beyond this, the land cover is mainly improved agricultural grassland interspersed with some marginal grassland and some small blocks of coniferous forestry. Scattered houses and farmsteads are found in the vicinity of the site at Ballyline, as shown in Plate 13.2 below:

Plate 13.2: Scattered houses, turbines and marginal grassland north of the site



This landcover is confirmed by review of the Corine 2018 mapping. Aerial imagery shows several smaller areas of peatland close (within 3 kilometres of the site), several of these also partly forested, with Bunnaruddee Bog being the largest, lying approximately 1 kilometre to the east. There are also other areas of peatland in the wider landscape in this part of North Kerry. This is evident in the aerial image below, showing Shronowen Bog in the centre of the view:

Figure 13.6: Aerial View of site and surrounds (Source: Google Maps)



There are a number of existing wind farms in the vicinity of the site. These include Tullahennel North and South, Curraderrig to the west, with Leanamore to the northeast.

Ballylongford is the nearest settlement, a small village to the northwest of the proposed turbines. Wind turbines are also evident from the northern part of the village.

The presence of wind farms in the local landscape is evident, and becomes obvious when travelling southeast along the R551 between Tarbert and Ballylongford, as the Leanamore and Tullahennel South turbines are clearly visible, as seen in Plate 13.3 and 13.4 below.

Plate 13.3: View of existing Leanamore turbine seen R551



Plate 13.4: View of existing Tullahennel turbines seen against Knockanore mountain



To the southeast, Kilbaha wind farm is located in Co. Limerick. These wind farms are all located within 10 kilometres of the proposed Shronowen turbines. In the wider landscape, there are turbines at Beale in the northwest, as well as a concentration of turbines in the uplands to the south east, stretching from Knockalaght to Keale, near Sugar Hill. To the south, turbines are located along the Stacks Mountains, near the southern boundary of the study area.

Wind turbines are also located across the Shannon estuary at Moneypoint, and at Moanmore, north of Kiltrush. These turbines are indicated on the Cumulative ZTV included in **Volume 4** (and included at a reduced scale as Figure 13.9 in Section 13.3.5).

Large areas of woodland or tree cover are relatively few in the study area, with significant areas of tree cover noticed in the vicinity of Tarbert and Glin, to the north of the site, along the Shannon Estuary.

13.2.2.3 *Land Use*

Peat cutting is carried out on parts of the site, while there are areas of cutover bog, as well as some areas of intact peatland. Surrounding land uses are mainly agricultural with some small areas of coniferous forestry.

As noted above, energy generation, including wind energy, is a feature of this landscape of North Kerry, with several wind farms close to the site. Energy generation is also evident along parts of the Shannon Estuary in Co. Kerry as well as in Co. Clare. In addition to the existing wind farms, the Tarbert and Moneypoint power stations are both within just over 10 kilometres from the most northerly proposed turbine. Thus energy related infrastructure is noticeable in the landscape around the site. The Shannon estuary itself is also related to industrial activities and is an important shipping and industrial area.

Plate 13.5: View of Moneypoint power station and turbines from near Ballylongford creek



Other land uses include recreation, particularly in the seaside areas and beaches on the northwest coast of Kerry.

13.2.2.4 *Settlement and Transport*

The site is located between the R552 between Ballylongford and Listowel, and a local road which connects the R552 to the Ballylongford -Moyvane Road, circling the site on three sides. A small cul-de-sac road lies to the north of the site in the townlands of Ballyline East and West. There are a number of smaller local roads which are cul-de sac roads in the vicinity of the site. The N69 Tarbert to Listowel road lies approximately 3.3 kilometres to the east.

The roads in the immediate vicinity of the site are lined by a number of dwellings, and many of the roads have open views to the surrounding landscape (as shown in Plate 13.2) with relatively low

levels of hedgerow vegetation, seen below and in the viewpoints 11,12,14,15 contained in the Photomontage Booklet in **Volume 4**.

Plate 13.6: Narrow local road north of site



The site lies approximately 3.6 kilometres from Ballylongford, and 5.9 kilometres from the centre of Listowel, which is the largest town in the study area. . The seaside town of Ballybunion lies approximately 12.4 kilometres to the west while Tarbert lies approximately 8.8 kilometres to the northeast. There are several smaller settlements in the vicinity of the site. The Tarbert – Kilmer ferry operates all year round and connects north Kerry with southern Co. Clare across the Shannon estuary.

The Wild Atlantic Way, a tourist route developed by Fáilte Ireland, extends along the north and west coast of Kerry, from Tarbert west along the coast to Banna Strand. From Tarbert it runs north to Killlimer and along the Shannon Estuary including Scattery Island, and west to Loop Head.

13.2.2.5 Recreation and Amenity, Cultural Heritage

13.2.2.5.1 Scenic Routes, Views and Prospects

Several scenic views lie within 20 kilometres of the site. However, as noted in Table 13.6, 6 of the 7 routes identified in the Kerry County Development Plan have views in the opposite direction. Only one view/prospect, that looking east from the road east of Knockanore Mountain, is directly in towards the proposed development. A photomontage is included from this location (Viewpoint 9).

This part of the road is elevated, and has views over a wide area of flatter landscape.

The nearest scenic routes in Co. Limerick both have views in the opposite direction of the site, so these were not considered further.

Within 20km, there are several scenic routes in Co. Clare. The closest is a section of road between Kilrush and Moneypoint, where there are extensive, panoramic views over the Shannon across to Co. Kerry, where the estuary is a key element of the view. This is very close to the Moneypoint power station, and there is a strong industrial character evident when travelling from west to east, towards the power station. The route has panoramic views across the estuary, to the generally flat

coastal landscape of Co. Kerry including views to several wind turbines as well, as shown in Plate 13.7 below:

Plate 13.7: View from Scenic Route near Moneypoint



Several scenic routes are located in the vicinity of Carrogaholt on the Shannon estuary, however these are not in close proximity, the closest being approximately 16 kilometres distant. As for the other scenic route near Moneypoint, these views are panoramic views over the estuary, the seascape being a large element of the view. From this vicinity, the north Kerry coast is clearly visible (in good weather conditions) and Beale Hill and Knockanore hill appear prominent due to the relatively low lying land and the estuary making these features more noticeable.

A limited section of scenic route near Labasheeda is included within the study area, approximately 18 kilometres from the nearest turbine. The views are to the east, south and west. Due to the distance, and also to the proximity of the scenic route to the Co. Limerick coastline, visual effects of the proposed turbines are likely to be not significant, and intermittent.

13.2.2.5.2 Landscape Designations and Cultural Heritage

As noted in 13.2.1, there are several areas in the study area with landscape designations relating to the landscape quality and amenity. These include the areas of Secondary Special Amenity which lies approximately 4.3 kilometres north of the site, along the coast from north Ballylongford west along the coast to Ballybunion. This is also the location of a scenic route, with views out over the coast and the Shannon estuary, across to Co. Clare. Beale Hill and Beale windfarm are located in this area. This area also includes Carrig Island, which is the location of a number of features of cultural heritage, which is connected to the mainland by a narrow causeway. The 15th century Carrigafoyle castle lies just on the mainland side of the causeway, and is a heritage site where one can climb the castle and see a considerable distance. This is an area with a distinctive character, a tranquil area, with very flat topography and a long narrow inlet from the sea (Ballylongford Creek) as shown in Plate 13.8 below.

Plate 13.8: View adjacent to Carrigafoyle castle over Ballylongford Creek



Lislaughtin Friary and graveyard is also within this landscape designation. A number of wind farms are visible from this landscape and one wind farm, Beale Hill, is located within it.

The coast to the north and south of Ballybunion including the beach, is designated as an area of Prime Scenic Amenity and a number of scenic views out to sea are also indicated. This part of the coast north of the town has expansive and panoramic views to the sea, while much of the beach itself is also designated. This is a well-known tourism and recreation location.

Across the estuary, much of the coastline from Kilrush to Loop Head is designated as a Heritage Landscape, with scenic routes also denoting the panoramic views to the estuary. Scattery Island, a Monastic site which lies south of Kilrush, is also included in this designation. The Island is available to visit and is operated under the OPW as a heritage site, open during the summer months.

13.2.2.5.3 Recreation Trails/areas

There are no formal waymarked trails on the OS Discovery Series maps within the study area, but the Shannon Way is a 35 kilometre walking trail (www.sportireland.ie) that traverses the landscape just north of the site, from Tarbert through Ballylongford, through Tullahennel North, over Knockanore and ending in Ballybunion. It is 3.6 kilometres north of the nearest proposed turbine at its closest point. This route traverses mainly minor local roads and travels close to several wind farms. Two other shorter loop walks are indicated at Ballybunion, along the strand, and at Tarbert, from the town to Tarbert point. These trails are all indicated on Figure 13.3 Landscape Designations, Views and Trails. . Viewpoint 9 is located along the Shannon Way.

As noted above, the Wild Atlantic Way, a tourist route developed by Fáilte Ireland, extends along the north and west coast of Kerry, from Tarbert west along the coast to Banna Strand. From Tarbert it runs north to Killimer and along the Shannon Estuary including Scattery Island, and west to Loop Head. Parts of the route (but not all) are scenic areas, and views of the seascape and coast are one of the main features of this route.

13.2.2.6 Summary of Landscape Character

- The site itself is an area of flat peatland, surrounded by agricultural land, with some marginal areas and blocks of forestry. Several minor roads are close to the site boundary and scattered dwellings and farmsteads are found along these roads. The site is close to the R552 Ballylongford-Listowel road, and the village of Ballylongford lies approximately 3.6 kilometres to the north. While the site itself is a quiet and tranquil location, it is not considered remote or isolated and lies within a relatively densely settled landscape with a dense network of roads and a number of small settlements.
- The wider topography is generally flat, with agricultural plains in the vicinity of Listowel. The uplands along the Co. Limerick border to the east are visible from the site and vicinity, the other main landform evident in the area is Knockanore Mountain to the west. The wider landscape is flat or gently undulating in general with some gently sloping lands near the coast to the north.
- There are several existing wind farms in close proximity to the site, and wind energy is an established use in this landscape. In the wider landscape, the power stations of Tarbert and Moneypoint are landmarks, and the industrial nature of parts the Shannon estuary is evident. These wind farms tend to have small number of turbines and are clearly visible from the main roads in the area.
- Areas of cultural heritage importance in the vicinity include Lislaughtin Abbey and Carrigafoyle Castle, north of Ballylongford, along with Scattery Island, a monastic site in the Shannon Estuary, south of Kilrush.
- Several areas of distinct landscape character include the coastal area north of Ballylongford to Beale Hill which has panoramic views to the Shannon estuary and across to Co. Clare. The estuary itself is an important feature of the wider landscape/seascape and it provides a middleground for many scenic views across to Co. Clare. Similarly, the southern coast of Co. Clare has sections of panoramic and scenic views across to Co. Kerry and Co. Limerick. These are reflected by landscape designations on both shores of the estuary.
- The coast near Ballybunion is also recognised for its scenic views out to the sea and the long sandy beach south of the town.

13.2.2.7 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 13.3, 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

13.2.2.7.1 Landscape Value – Site and immediate vicinity

The landscape value of the actual site and the immediate environs (extending to 5 kilometres of the site) of the proposed development, an area of flat peatland within primarily agricultural land, with a number of existing wind turbines, is considered to be **Low-Medium value**. The area is not subject to any specific landscape designations, and is zoned Rural General. Within 5 kilometres of the proposed turbines there is one scenic route, but, as set out in Table 13.6 and shown in Figure 13.3, the view is from a local road towards the inlet at Saleen, and in the opposite direction of the proposed turbines. The landscape is densely settled, with numerous dwellings outside of settlements, and is not considered especially remote or tranquil. As the site of the proposed development is a partly cutover peatland, this is a distinctive landscape type, and one that is unique, however the wider area is not influenced by the peatland characteristics.

13.2.2.7.2 Landscape Value – Wider Landscape

The wider landscape (between 5-20km) contains a number of elements which appear valued. These include several scenic routes as set out in Tables 13.6 and 13.7.

There is a scenic route east of Knockanore Mountain where views are evident over the site of the proposed development, and the area in general has views over the wider landscape. Knockanore is a prominent landscape features in this area. The Shannon Way also traverses Knockanore and the land to the north of the site at Ballylongford.

These include designated landscapes on both the north and south of the Shannon estuary, which are strongly influenced by their proximity to the Shannon and the views over the water. The landscape around Carrig Island is a distinctive one and contains several elements of cultural heritage. Scattery Island in the estuary is also part of the Co. Clare Heritage landscape. Scenic views in these areas tend to focus on views across the estuary.

13.2.3 **Off Site Measures – Receiving Environment**

13.2.3.1 *Grid Connection Route*

There are two options assessed for the connection to the national grid from the wind farm substation, which is located on the eastern boundary of the site. The preferred option is within the site boundary, and will be by means of a short underground cable route to the existing 110kv

overhead transmission that is located to the east of the wind farm. This will require the installation of two new lattice towers within the existing Tarbert to Tralee 110kV OHL. An alternative grid connection is an underground cable route from the proposed substation to the permitted Tullamore solar project substation to the south as described in Chapter 2.

13.2.4 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 13.4, 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 Hub Height and Tip Height ZTV Maps which are included below at a reduced size as Figure 13.7 and Figure 13.8 These are included in **Volume 4** at full size. The 20 viewpoint locations are included on the ZTV maps. As noted in Section 13.1.3, they do not include surface objects including vegetation and buildings. They are both 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 two ZTV maps were produced so 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 13.3.4. 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.

The site of the proposed development and the immediate vicinity (within 2-3 kilometres) is where the visual effects are likely to be the most pronounced within the study area of the proposed development. The 10 kilometre buffer is indicated by a dashed line on the ZTV, with the 20 kilometre buffer also indicated. The final 20 viewpoint locations are also indicated on the ZTV maps.

Figure 13.7: Hub Height ZTV (reduced version)

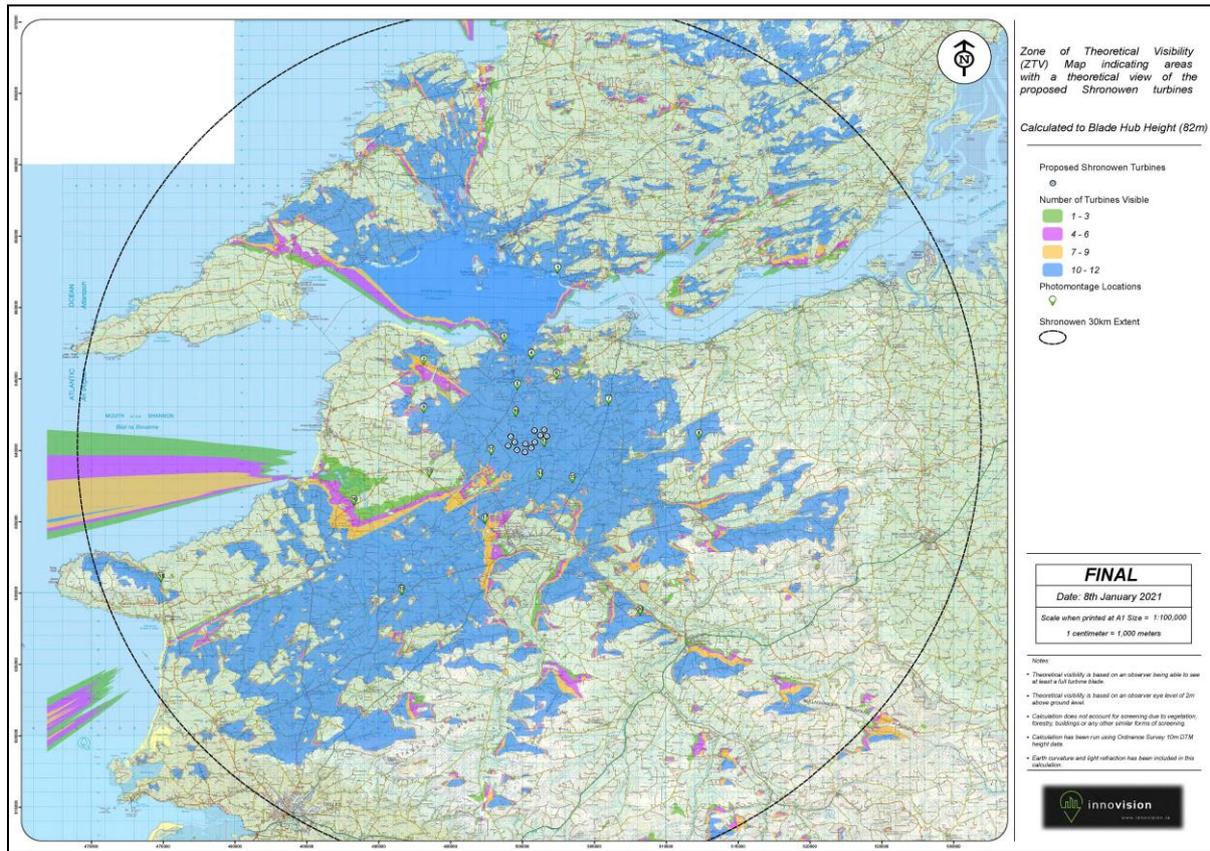
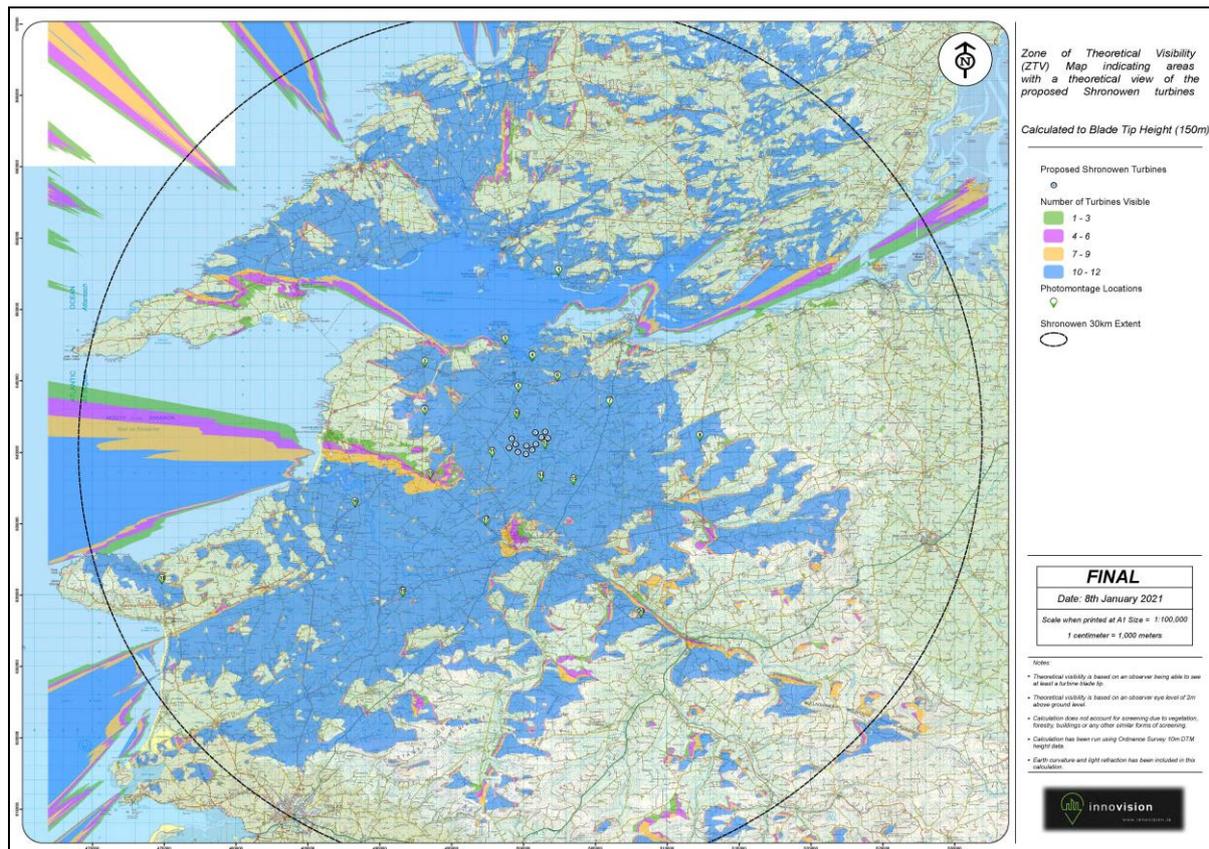


Figure 13.8: Tip Height ZTV (reduced version)



Areas without visibility

A brief review of the Tip Height ZTV indicates where there will be no visibility (areas unshaded in any colour) and areas with visibility.

Areas where there is no theoretical visibility include the coast from Ballybunion to the western slopes of Knockanore, and north towards Beale. Ballybunion beach itself is outside the zone of theoretical visibility. A large area east and south of Glin, and around of Newcastle West, also is without theoretical visibility. Further southwest, the lower ground of Kerry Head will not have visibility, and neither will the town of Tralee and the land immediate around it. The pattern of theoretical visibility south of Listowel is more scattered and uneven, with areas of the Stacks Mountains also outside the zone of theoretical visibility.

Theoretical visibility and potential visual receptors

Visibility is divided into colour bands, each colour representing a number of turbines which are theoretically visible. These are as follows:

- Green – Areas where between 1-3 turbines theoretically visible
- Pink; Areas where between 4-6 turbines theoretically visible
- Orange: Areas where between 7-9 turbines theoretically visible
- Blue: Areas where between 10-12 turbines theoretically visible

The general pattern of visibility extends from the site and immediate surrounds to the north and north east, over the Shannon estuary and into Co. Clare. It extends further southwest from the site, but areas of higher ground including Beale hill to the northwest, the higher ground on the Co. Limerick county boundary, as well as the Stacks mountains to the south, restrict visibility.

Though there is theoretical visibility in some towns and settlements, including Ballylongford, parts of Tarbert and Listowel, this is likely to be affected by built form, with visibility likely to be less than indicated on the maps.

Potential visual receptors 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. Viewpoint locations represent receptors at the following locations:

- Residential clusters in the vicinity of the site (several regional and local roads in the vicinity of the site have theoretical visibility and relatively open views)
- Scenic routes – those in south Co. Clare and the scenic route west of the site near Knockanore as well as the location north of Ballyheigue
- Cultural Heritage sites, recreation trails, amenity areas – Carrigafoyle Castle is an important cultural heritage location
- Rural and regional roads, where viewers will have open views of the proposed development
- Settlements and their environs (Ballylongford, Listowel and surrounds)
- Cumulative views where other wind farms are also visible were also considered in selecting viewpoint locations.

13.2.5 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.

Trends which are likely to continue in the landscape are developments such as one-off housing, agriculture, forestry, and small scale peat extraction. In addition, the development of several permitted wind energy and solar farms is expected to be carried out, resulting in a strong presence of renewable energy elements in this landscape.

13.3 LIKELY SIGNIFICANT EFFECTS

The likely significant effects are assessed at both construction and operational phase, and landscape and visual effects are described separately.

The elements of the proposed development that are most relevant from a Landscape and Visual aspect are noted below. The installation of 12 no. turbines with a tip height of up to 150 metres are the most relevant elements in terms of the LVIA in relation to operational landscape and visual effects, and other elements include site structures including substation and wind control building, anemometry mast, 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. The grid connection will consist of an underground cable route connection from the 110kv wind farm substation to the existing 110kv transmission line due east of the wind farm site.

A full description is included in Chapter 2. An aerial view of the turbine locations is shown below:

Figure 13.10: Proposed turbine locations



13.3.1 Landscape Effects

Landscape Sensitivity- Site and Immediate Vicinity

Landscape sensitivity is considered Low to Medium in the immediate vicinity of the site. The site is a relatively flat plain of bogland, marginal grassland with some conifer plantations. Scattered houses and farms are found in the vicinity of the site. Views are generally unremarkable but the higher ground of Knockanore mountain to the west and the Co. Limerick boundary to the east are landmarks, as are the distant Stacks mountains to the south. Knockanore is an important landmark in this mainly flat landscape, and from its vicinity there are views to the Shannon estuary. The site and surrounds are characterised by agriculture but also by the number of wind farms visible in the area, which are a noticeable feature. The Shannon estuary is not within the visual unit of the site and immediate surrounds however there are views of the Moneypoint and Tarbert power stations and associated electricity infrastructure (pylons) from the vicinity of the site.

Landscape Sensitivity- Wider Landscape

The wider landscape has several elements which have theoretical visibility of the site and are considered of higher sensitivity, including the areas designated as Secondary amenity areas, along the southern shores of the Shannon estuary, including Carrig Island and along Ballylongford Creek, which have a distinctive character and is an island-like landscape with good open and expansive views. Carrigafoyle castle and Lislaughtin Abbey are cultural heritage attractions in this landscape.

Other sensitive landscape receptors areas include the Heritage Landscape in the vicinity of the Shannon Estuary in Co. Clare, extending from Kilrush to Loop Head, and including Scatterry Island. Views are focussed on the estuary and on the Kerry and Limerick coastline across the water while the Clare landscape in this area includes areas of relatively remote and rugged coastline. Several scenic routes denote the scenic qualities of the landscape.

13.3.1.1 Construction Phase

Site and Immediate Vicinity - Magnitude of Change

The site and immediate vicinity are considered to undergo a High magnitude of change to the character of the site during the construction phase, which will be increased site activities to this rural landscape. These activities include site works – including tree felling, excavation, and creation of peat deposition areas, and will involve machinery moving in and out of site. Two temporary construction compounds will be constructed, one to the west and one to the east. Temporary accommodation works are required along the turbine delivery route such as hedge or tree cutting, relocation of powerlines/poles, lampposts, signage and local road widening. These will be re-instated following turbine delivery.

Site and Immediate Vicinity - Significance of Effect

These effects are considered Moderate, and adverse in nature. They will, however, be localised to the site and immediate vicinity, and the construction phase activities will be temporary to short term in duration. The construction compounds will be removed following construction.

Wider Landscape - Magnitude of Change

The wider landscape – beyond 5 kilometres from the site, will experience a Negligible to Low magnitude of change during the construction phase.

Significance of Effect

The significance of the effect is considered Not Significant, adverse and temporary effect on the wider landscape.

13.3.1.2 Operational Phase

Site and Immediate vicinity - Magnitude of Change

Change to the landscape can consist of changes to the fabric of the landscape, as well as to the character and perceptual aspects. Changes to the fabric of the site are limited to the immediate site area, consisting of changes to accommodate the footprint of the turbines and associated elements such as earthworks, roads, and positioning of elements including the substation and cabling.

Changes as a result of non-turbine elements to the landscape fabric and character, will be largely evident at the local level, and not the wider landscape. The peat excavated from the turbine bases is to be stored in six peat deposition areas, around the site's periphery, and the largest area is located to the south of the site, south of T6 and T9. Other non-turbine elements include the proposed substation and connection to the overhead line to the east of the site, which will impart a further degree of industrial/energy related development to the area, and a small amount of tree felling. These elements consist of a Low-Moderate magnitude of change at a local level.

The turbines themselves will impart a larger degree of change on the local landscape. The viewpoints indicate that visibility of the turbines from the immediate surrounds will be pronounced as there are many open and expansive views. While wind turbines have become a feature of the wider North Kerry landscape, and are visible from the site, the presence of 12 turbines of large scale will impart a High magnitude of change to the landscape character of the locality.

Site and Immediate Vicinity - Significance of Effect

The significance of the landscape effect is considered to range from Slight to Moderate in the vicinity of the site. The landscape is a rural, working landscape, generally flat in nature and with extensive views in some areas. Part of the local area, in particular the open and expansive nature of the landscape east of the site, can be considered large in scale as evident in a number of viewpoints. Turbines and elements of energy infrastructure are already part of this landscape (Leanamore turbines to the northeast and Tullahennel turbines to the northwest) and will now become a more pronounced presence in the immediate vicinity of the site due to the turbines, and, more locally, the substation. The quality of the effect is considered adverse.

Wider Landscape - Magnitude of Change

The effects on the wider landscape character vary. Turbines are also a feature of the wider landscape character, including the identified sensitive areas around Carrig Island and Ballylongford Creek, though these will have intermittent visibility and no visibility from some parts. Viewpoints from this area indicate only partial visibility of the turbines, and the ZTV show little visibility west of the beach at Letter. The magnitude of change is considered Low in these areas.

The sensitive landscape north and south of area around Ballybunion will not be affected.

The landscape character to the north of the estuary is already strongly influenced by wind turbines, both on the north Kerry coast and across the estuary on the Co. Clare side. Both sides of the estuary have extensive views across to the opposite side, and this area reads as a visual unit in its own right, with views from the Clare coast showing considerable turbine numbers at a distance. The power stations at Tarbert and Moneypoint also are features of the estuarine landscape. The magnitude of change is considered Low.

The less sensitive landscape receptors in the wider area, and the areas around the settlements, that are categorised as 'Rural General' are considered to have a more robust landscape character. These parts of the landscape have a greater capacity to undergo change, and the proposed turbines will impart an increase in the number of turbines evident in the landscape.

Wider Landscape – Significance of Effect

The effects on the sensitive parts of the northern Kerry coast are confined to the Carrig Island in this landscape character area and are considered Not Significant to Slight, and neutral. The effects on the landscape character of the Heritage landscape to the north of the Shannon estuary are considered to be Slight and neutral in quality.

Effects on the wider landscape to the southwest of the site, and the lower slopes of the higher ground to the south and east, are considered Not Significant.

13.3.2 Visual Effects

13.3.2.1 Construction Phase Visual Effects

The main visual effects will arise during the operational phase, but visual effects are also likely during the construction phase. These visual effects are mainly localised, and are not relevant at the scale of the wider landscape beyond approximately 3-4 kilometres. Visual effects include machinery on the site and surrounds, and carrying out of groundworks on the site and grid connection route, as well as turbine delivery.

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 2-3 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.

Site and Immediate Vicinity - Magnitude of Change

The magnitude of change experienced by the visual receptors during the construction phase is likely to range from Medium to High. The proposed development is located in a relatively open landscape, and views from the surrounding local roads will be evident. Should the alternative grid connection option be utilised, the line will be underground in the road corridor and visual effects as a result will be Not Significant, temporary effects during the construction stage.

Significance of Effect

The effect is considered to be Moderate effect, and the nature of the visual effects are considered to be adverse. The duration, however, is temporary in nature and the temporary elements such as the construction compounds are to be removed following construction. Effects on the wider landscape are considered to be negligible.

13.3.2.2 Operational Phase Visual Effects

The viewpoints 1-20 include viewers in the immediate vicinity of the site and from the wider landscape. These are discussed below in the 13.3.2.3 Summary of Visual effects.

The main visual effects will arise during the operational phase, and 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 13.1.3.

The ZTV maps give an indication of the pattern and the extent of the visibility, while the photomontages and wireframes indicate the nature of the visibility.

Three ZTV maps were produced, as follows:

- Hub Height ZTV
- Tip Height ZTV
- Cumulative ZTV (showing the proposed development with other existing and permitted wind farms)

The Hub Height and Tip Height ZTVs 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 4** and are described and assessed in Section 13.3.2.2 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.

Pattern and extent of visibility

As noted in Section 13.2.2, there are a number of areas indicated on the Tip Height ZTV where there will be no visibility of the proposed Shronowen turbines. Both the Tip Height and Hub Height ZTVs show that where theoretical visibility occurs, in the majority of areas it will be of a high number (10-12) turbines, which are areas shaded blue.

In the site and immediate vicinity, theoretical visibility is shown as far north as Ballylongford and almost as far as Tarbert, as well as east to Moyvane and west to Knockanore. This hill does prevent some views from parts of the coastal land to the west. Theoretical visibility is shown to the south to as far as Listowel, however fewer turbines visible near the town itself. In reality, these views are reduced by screening (buildings and vegetation) though the area immediately around the site itself is a generally open and flat landscape, and there will be open views as shown in Viewpoints 7, 10,11,14 and 15 in particular. However some screening is evident along the R551 to the north of the site, preventing views 4,5,6, showing that the actual visibility does differ from the ZTV in places. Open views also occur along the Ballylongford-Moyvane road and the N69 to the east.

In the wider landscape, open views are also likely from elevated locations, some of which are considered sensitive due to their scenic qualities, and the slopes of higher ground, where screening is not present. Some long distance views of the turbines will be evident as many of these elevated views have open views for long distances, with views from the study areas including views across the Shannon estuary, views to the Stacks mountains and the higher ground along the Limerick county boundary.

Views are available from parts of the flatter coastal landscape, but these areas are relatively few, including the distinctive area of Carrig Island, (and area of Secondary Special Amenity) and the land south of Ballybunion, though importantly, not the beach itself, and a small part of the Kerry Head coastline. Viewers across the Shannon estuary and the Co. Clare coastline (including sensitive receptors in areas of Heritage landscape and along scenic routes) will also have views across the estuary to the proposed turbines, as many of these scenic areas are close to the coast and have open views across the Shannon. The closest point to the Co Clare coast is Moneypoint which is approximately 10 kilometres from the nearest turbine.

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 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, these include landscape and visual designations as well as waymarked trails, viewing points and cultural heritage attractions, local residents and local community views. A range of views are included, from a variety of elevations, landscape contexts and directions.

Viewpoints 1-20 are described below and should be read in conjunction with the Photomontages in **Volume 4**. The locations are indicated on the ZTV maps.

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, there is a second Baseline photograph, also at 90 degrees,

to represent the landscape context where the viewpoint has panoramic views or where an additional image is necessary to depict the landscape setting more accurately).

A wireframe view is also shown underneath with the Baseline Photograph, illustrating theoretical visibility of the turbines. This includes existing, permitted or consented turbines, as well as proposed turbines (those which have not yet been determined). The Proposed View is then described which describes the 'Photomontage' view. The photomontage view is shown as 53.5 degrees, with some viewpoints requiring two 53.5 degree views.

Headings include Visual Receptor Sensitivity, Magnitude of Change, Significance of Effect as well as the Cumulative effect. The quality of the effect is also described. The duration of the visual effect in all views will be Long Term, although it is important to note that the turbines are likely to be decommissioned after 30 years. The change is considered to be reversible, as the removal of turbines will remove the visual effects associated with them.

The viewpoints are as follows:

Table 13.8: Viewpoints for Photomontages

Final No	Description
1	View from N67 and Scenic Route at Ballymacronan Bay
2	View from R551 west of Astee
3	View from Carrigafoyle Castle
4	View from Saleen
5	View from R552 at Ballynacasy
6	View from R551 between Ballylongford-Tarbert
7	View from N69 at Tarmon West
8	View from R524 at Glenagra
9	View from local road and Scenic Rout east of Knockanore
10	View from Ballyline West
11	View from R552 at Coolkeragh
12	View from Gabbett's Bridge, Tullamore
13	View from R553 from Ballybunion-Listowel south of Lisselton Cross
14	View from Guiney's Cross Roads, Coolacarig
15	View from local road near Dore's Cross Roads, Clontubbrid North
16	View from R551 northeast of Ballyduff
17	View from R553 northwest of Listowel
18	View from local road and protected view location at Glenlea
19	View from 5556 at Clooncolla
20	View from R555 southeast of Duagh

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

Table 13.9: Viewpoint 1

<p>Viewpoint 1 - View from N67 and Scenic Route at Ballymacronan Bay</p> <p>Existing View</p> <p>This view is taken from the N67 which runs along the coast, just west of Moneypoint power station. This view shows the road and curving shoreline to the left of the view, and the grass embankments and some machinery related to the power station. Several turbines and a mast are visible along the shoreline in the middleground. The remainder of the view is characterised by the expanse of the Shannon estuary, with the land of Co. Limerick and Co. Kerry in the distance. The topography across the estuary is gently sloping, and several wind farms are clearly visible across the water, with clusters of turbines visible across the view, which appear in three distinct clusters. This view is an open, expansive, and tranquil view, with strong scenic qualities and the open view across the estuary the key characteristic of the view.</p> <p>While the view is considered scenic, it should be noted that there are industrial elements to the view (and especially as the viewer turns to the left to see the Moneypoint power station) and wind energy is an established component of the view, with wind turbines both in the foreground and the distance.</p>
<p>Visual Receptor Sensitivity</p> <p>Visual receptors would be those travelling the coast road, which is also a scenic route, and a view with high scenic quality. The visual receptor sensitivity is considered High.</p>
<p>Magnitude of Change</p> <p>The proposed photomontage shows that all 12 turbines are partly visible across the estuary, with all of the hubs visible, but much of the turbine towers screened from view by the topography. The turbines occupy a moderate spatial extent of the view, however they appear as distant features across the estuary. The turbines are in close proximity to two of the existing Leanamore turbines. The turbines are considered to complement the simplicity of the view. The magnitude of change is considered Low:</p> <p><i>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</i></p>
<p>Significance of visual effect</p> <p>The visual effect is considered Slight to Moderate. The quality of the effect is considered neutral.</p>
<p>Cumulative Effect (proposed turbines in addition to other existing, permitted and proposed turbines).</p> <p>Existing turbines: The photomontage shows the proposed Shronowen turbines in conjunction with the existing Leanamore turbines to the left, and the existing Tullahennel turbines to the right of the image. The existing Stacks turbines are too distant to make out, in this view.</p> <p>Existing, permitted and proposed (undetermined) applications: The wireframe view (below the</p>

existing view) illustrates the proposed turbines along with the existing turbines, as well as permitted turbines. Those permitted, but not built, include the consented Ballylongford turbines to the right of the view, which from this view appear as an extension of the existing Tullahennel South turbines. The proposed Ballyhorgan turbines are not discernible from this view.

The Cumulative effect of the proposed Shronowen turbines, in addition to the existing, permitted and proposed turbines is considered a **Slight cumulative effect**. Though visible, they are seen at a distance across the estuary, and do not change the character of the overall view. In this view the quality is considered **neutral**.

Table 13.10: Viewpoint 2

<p>Viewpoint 2: View from R551 west of Astee</p>	
<p>Existing View:</p> <p>This view, taken from a Regional Road, shows a field of marginal grassland in the view, bounded by a hedgerow to the rear. Several field boundaries are visible in the background, with the land rising gently to the right of the view. In the left of the view are some scattered buildings. To the right of the view a floodlight pole is visible. In the centre of the view, several turbines are visible in a cluster, partly obscured by the intervening vegetation.</p>	
<p>Visual Receptor Sensitivity</p> <p>This would represent viewers travelling at some speed along a regional road, and would be considered of Low sensitivity.</p>	
<p>Magnitude of Change</p> <p>The magnitude of change is considered Negligible. Approximately 3 of the turbine blade tips may be visible to the rear of the vegetation, however these are at some distance and not discernible from this view. These may be noticeable when the blades are moving but these are hidden by the vegetation in this view.</p>	
<p>Significance of visual effect</p> <p>The visual effect significance is considered Imperceptible. The quality of the effect is considered neutral.</p>	
<p>Cumulative Effect</p> <p>The proposed Shronowen turbines are screened by the intervening vegetation, apart from three blade tips which are barely distinguishable in the montage. They do not give rise to Cumulative effects.</p>	

Table 13.11: Viewpoint 3

<p>Viewpoint 3: View from Carrigafoyle Castle</p> <p>Existing View</p> <p>The existing view shows an elevated view from the upper storey of the castle (accessible during the summer months). This view shows the wall of the castle to the left of the image, with a glimpse of Ballylongford Creek through the window opening. To the centre and right, the view shows fields and a farmstead below, with clumps of trees, and the ground rises gently away in the distance. Along the horizon a cluster of turbines is visible in the centre of the view, with another small cluster to the right against a backdrop of higher ground.</p>
<p>Visual Receptor Sensitivity</p> <p>At a tourist and cultural heritage location in an area of designated landscape, the receptor sensitivity is considered High.</p>
<p>Magnitude of Change</p> <p>The magnitude of change is considered Negligible. The proposed photomontage shows that only one of the 12 turbines are visible, just to the right of the castle wall. It is just visible, but is a very minor addition to the overall view and does not impart any change to the character or composition.</p>
<p>Significance of visual effect</p> <p>Not Significant, neutral effect.</p>
<p>Cumulative effect:</p> <p>The wireframe and photomontage shows that only one of the 12 Shronowen turbines is visible. The wireframe view shows the existing turbines along with the consented Ballylongford turbines, which will be visible in the centre of the view, adjacent to the existing Tullahennel North turbines. However, the addition of the proposed Shronowen turbines to this view does not change the character of the view. The cumulative effect is considered Not Significant, adverse effect.</p> <p>It should be noted that an alternative view was taken at ground level from Carrigafoyle castle, where the wireframe overlaid on the image showed no visibility of any of the proposed turbines.</p>

Table 13.12: Viewpoint 4

<p>Viewpoint 4 - View from Saleen</p> <p>Existing View</p> <p>This view is taken from a local road at Saleen, near both Saleen pier and Lislaughtin Abbey. This view shows the road, an adjacent dwelling, and some rough grassland in the foreground, while the inlet at Saleen is visible to the right of the image. In the middleground, sloping fields lined with mature trees are visible, and to the left of the image, Lislaughtin Abbey itself is visible among a group of trees and a cluster of buildings. To the rear of the Abbey in the distance, some existing turbines are visible against a backdrop of higher ground.</p>
<p>Visual Receptor Sensitivity</p> <p>The visual receptor sensitivity is considered to be High, as it is located adjacent to the pier, with a view of the Abbey, and in an area of Secondary Special Amenity. The view is also considered to have scenic qualities.</p>
<p>Magnitude of Change</p> <p>The proposed photomontage shows that here are two 'stacked' turbines (one visible in front of another) partly visible through the mature trees, slightly to the right of the view, and the remainder are hidden by the vegetation and the building. In reality, as the blades turn, they may be partly visible through the trees. In summer, leaves are likely to further screen these views. The proposed turbines will not affect the views towards the Abbey.</p> <p>The magnitude of change is considered Negligible.</p>
<p>Significance of visual effect</p> <p>The significance of the visual effect is considered Not Significant. The quality of the effect is considered Neutral.</p>
<p>Cumulative Effect</p> <p>Of the proposed Shronowen turbines only two are visible through the trees. The wireframe view and baseline view show the existing Tullahennel South seen against Lislaughtin Abbey, but the proposed turbines do not affect this part of the view. The cumulative effect is considered Negligible, and neutral in quality.</p>

Table 13.13: Viewpoint 5

<p>Viewpoint 5 View from R552 at Ballynacasy</p> <p>Existing View</p> <p>The existing view is located along a Regional road, just south of Ballyllongford. The view shows a large field adjacent to the road, with a well-developed hedgerow and tree line in the middleground of the view. To the left of the view, distant fields and some trees are visible. Some dwellings are just visible among the trees. The road verges to the right of the view are also lined with shrubs and some trees.</p>
<p>Visual Receptor Sensitivity</p> <p>This represents viewers along a Regional road, just south of a cluster of houses. The viewers would be mainly those travelling along the road, and include those entering and exiting the houses. The visual receptor sensitivity is considered Low-Medium.</p>
<p>Magnitude of Change</p> <p>The photomontage shows that the majority of the proposed Shronowen turbines are hidden by the intervening tree line. The two turbines to the left are partly visible.</p> <p>(Several blade tips may be visible behind the trees, for part of their rotation as in reality the blades will be moving.)</p> <p>It should however be noted that some of these turbines are likely to be partly visible in the winter months when the leaves are not on the trees. In a winter scenario, they would be partly visible but would be seen behind the trees, which would still reduce their visual effect. Some turbines would still be screened from view, behind the dwelling and by dense vegetation.</p> <p>Notwithstanding this, the turbines which are visible are not dominant, and are at a sufficient distance to prevent them from being a dominant feature of the view.</p> <p>The magnitude of change is considered to be Low:</p> <p><i>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.</i></p>
<p>Significance of visual effect</p> <p>The visual effect is considered to range from Not Significant, in summertime views, to Slight, when the trees are bare and some more turbines are likely to be partly visible. The quality of the effect is considered neutral.</p>
<p>Cumulative Effect</p> <p>Though the wireframe indicates the Stacks mountain turbines are theoretically visible, the baseline view and proposed photomontage shows that no other turbines are visible. These are screened</p>

from view by the intervening vegetation. Therefore, there is no 'in combination' cumulative effect. However, combined 'in succession' where a viewer turns their head to see another windfarm, may arise, as if the viewer looks to the right the Ballylongford turbines are likely to be visible at close proximity. However due to the low magnitude of change, due to visibility of the Shronowen turbines, in this location, cumulative visual effects are considered Not Significant.

Table 13.14: Viewpoint 6

<p>Viewpoint 6 – View from R551 between Ballylongford-Tarbert</p>	
<p>Existing View</p>	<p>This view, taken from a Regional Road, shows a field of agricultural grassland. A mature hedgerow and shrubs are visible in the middleground as well as two turbines at relatively close proximity. Other, gently undulating, fields are just visible in the distance, and a block of coniferous forestry is evident in the background to the left of the view. Several wooden 110kV poles are visible in the background of the view.</p>
<p>Visual Receptor Sensitivity</p>	<p>This represents viewers traveling along a regional road, at greater speeds than a local road, and so visual receptors are considered Low to Medium sensitivity.</p>
<p>Magnitude of Change</p>	<p>The proposed photomontage shows that two turbine hubs/nacelles, and three blade tips are visible, the rest being screened by topography and intervening vegetation. The turbines are visible in a cluster of limited spatial extent, and does not impart a high degree of change to the view. The magnitude of change is considered Low.</p>
<p>Significance of visual effect</p>	<p>The visual effect is considered Not Significant. The quality of the effect is considered adverse.</p>
<p>Cumulative Effect</p>	<p>The proposed Shronowen turbines which are visible to a limited extent, are seen through a view of two existing turbines, which are at close proximity. The addition of the proposed Shronowen turbines further adds to the presence of wind energy in the landscape and is considered a Slight cumulative effect. The quality of the effect is considered adverse.</p>

Table 13.15: Viewpoint 7

<p>Viewpoint 7 - View from N69 at Tarmon West</p> <p>Existing View</p> <p>This existing view shows a number of agricultural fields in an open, generally flat landscape. In the foreground, fields are bounded by well-defined hedgerows and some scattered trees. In the middleground of the view, the cluster of existing Leanamore turbines are visible to the right of the image, (two are obscured by vegetation) with some scattered buildings evident. In distance, the hill of Knockanore is partly visible.</p>
<p>Visual Receptor Sensitivity</p> <p>This view represents those travelling along the N67 (national route) which would involve viewers typically experiencing the landscape at higher speeds, where there are open views to the surrounding landscape, with some scenic qualities. The visual receptor sensitivity is considered Low-Medium.</p>
<p>Magnitude of Change</p> <p>The proposed Shronowen turbines are visible in a cluster to the left of Knockanore mountain. While all 12 are visible, they are in a relatively tight cluster and occupy a moderate extent of the view. They are clearly visible but do not dominate, and do not affect the overall character of the view. The magnitude of change is considered Medium:</p> <p><i>... 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>Significance of visual effect</p> <p>The Significance of visual effect is considered Moderate. The quality of the effect is considered neutral.</p>
<p>Cumulative Effect:</p> <p>The wireframe and baseline view show the existing Leanamore turbines are relatively prominent in the existing view, while some of the Tullahennel turbines are visible in the distance. The landscape is generally flat with open views, and wind energy is already present in this landscape, and the addition of the proposed Shronowen turbines to the existing and permitted turbines is considered to result in a Slight-Moderate cumulative effect. The quality of the effect is considered neutral, as the open flat nature of the landscape is considered of sufficient scale to absorb several wind farms. The two windfarms appear in distinct clusters, but occupy a considerable proportion of the view.</p>

Table 13.16: Viewpoint 8

<p>Viewpoint 8 - View from R524 at Dromreask</p> <p>Existing View</p> <p>The existing view shows a view from a regional road which is slightly elevated, between Glin and Athea in western Co. Limerick. The view shows a marginal field in the foreground, with scrubby vegetation and trees to the left of the view. In the middleground, the land dips slightly and some bogland and areas of coniferous plantation are visible. There are also some scattered dwellings. In the background, the hill of Knockanore is visible, along with what appears as three clusters of turbines, to the right of the image. (It is noted that in some cases existing turbines appear in front of other clusters, so they read as one cluster but are, in fact, distinct.)</p>
<p>Visual Receptor Sensitivity</p> <p>The visual receptors are considered to be of Low- Medium sensitivity – this represents viewers along a Regional Road, and the view has some pleasant elements but is not considered scenic overall.</p>
<p>Magnitude of Change</p> <p>The proposed Shronowen turbines are visible in the centre of the view, over a limited spatial extent. The turbines are partly seen against the backdrop of Knockanore mountain, similar to some of the Tullahennel turbines, while the remaining Shronowen turbines are seen against a backdrop of flatter land. The cluster while reading as one, is somewhat spaced out, increasing the extent of the turbines in the view. The magnitude of change is considered Low to Medium, as the turbines are at some distance. The overall character of the view undergoes little change.</p>
<p>Significance of visual effect</p> <p>The visual effect is considered Slight. This is as a result of a Low-Medium visual receptor sensitivity, and a Moderate degree of change.</p>
<p>Cumulative Effect</p> <p>The cumulative effect is illustrated by the baseline image, and the wireframe view. The existing Toberatooreen turbines are screened from view, while the existing Tullahennel north and south, and the Leanamore turbines are visible. The consented Ballylongford turbines will appear adjacent to the Tullahennel cluster, with the proposed Shronowen turbines appearing to the left of the Tullahennel turbines. While the proposed Shronowen turbines will increase the spatial extent of turbines visible in the view, the turbines which will be visible from this view are all at some distance. and do not dominate the view. The cumulative effect is considered Slight and neutral in quality.</p>

Table 13.17: Viewpoint 9

<p>Viewpoint 9 - View from local road and Scenic Route and Shannon Way, east of Knockanore</p> <p>Existing View</p> <p>The existing view shows the view from the local road and scenic route, on the eastern slope of Knockanore. It is a panoramic and extensive view of the landscape. The view shows marginal fields with some shrubby vegetation, and areas of bogland interspersed with conifer plantations.</p> <p>To the left of the view, four turbines are clearly visible at close proximity, while in the centre of the view, a further cluster of turbines is visible. Some distant turbines are also visible in the background of the view.</p> <p>In the background, the land slopes away from the viewer, with the Shannon estuary visible to the left of the image, and even the Co. Clare coastline, with the Moneypoint power station and turbines, is visible in the distance. The Tarbert power station is visible in the distance.</p> <p>The view undoubtedly has scenic qualities, however wind energy is a component of this view, as are the distant power stations.</p>
<p>Visual Receptor Sensitivity</p> <p>This is a panoramic view with scenic qualities and a designated view, so the receptor sensitivity is considered High.</p>
<p>Magnitude of Change</p> <p>The proposed turbines are visible on the lower ground, to the right of the existing Tullahennel South turbines. They occupy a medium extent of the view, and appear relatively distant, compared to the nearest Leanamore and Tullahennel North turbines. The turbines do not obstruct any feature of the view, and are seen against a backdrop of higher ground to the east. The proposed turbines do extend the presence of wind energy in the landscape, which is scenic but also characterised by wind energy and power generation. The magnitude of change is considered Medium:</p> <p><i>...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>Significance of visual effect</p> <p>The visual effect is considered Moderate. While the visual receptor sensitivity is considered High, and the magnitude of change is Medium, it is not considered that the result is a Significance visual effect as would be suggested in Table 13.3.</p> <p>The quality of the effect is considered neutral, as the proposed turbines site well into the landscape, on an area of low ground, with the higher ground to the east providing a backdrop and they are sited</p>

so as to avoid breaking the skyline.

Cumulative Effect

A number of existing wind turbines are seen in the baseline photograph, which are both at relatively close proximity, in particular the Tullahennel North turbines to the left of the view, while the turbines in the centre of the view are also clearly visible and in a distinct cluster. Other existing turbines are visible in the distance, and the wireframe shows the consented Ballylongford turbines will largely appear in between the Tullahennel South turbines and be read as part of that cluster. The addition of the proposed Shronowen turbines will not introduce a new element, but does further extend the visibility of turbines across the view. The cumulative effect is considered **Moderate, and neutral.**

Table 12.17: Viewpoint 10

Table 13.18: Viewpoint 10

Viewpoint 10 - View from Ballyline West

Existing View

This view is taken from a minor local road to the north of the site, and shows an open expansive view over a flat landscape of marginal grassland. A dwelling is visible to the left of the image. In the middleground, agricultural fields, defined by hedgerows and some trees are visible. A ridge of higher ground is visible in the distance, to the right of the image. Two groups of distant turbines are barely visible on the higher ground to the left and to the right of the view but are not in any way prominent.

Visual Receptor Sensitivity

This view is located close to several residences, and along a narrow road which is a cul-de-sac. The visual receptor sensitivity is considered to be Medium.

Magnitude of Change

There are two photomontages, 10a and 10b, which show the proposed turbines in two images of 53.5 degrees.

Photomontage 10a depicts the more enclosed part of the view, and shows the proposed Shronowen turbines are visible at close proximity, and occupy a large extent of the view. 7 turbines are visible, though two are partly screened by the dwelling and vegetation to the left of the image.

Photomontage 10b shows the proposed turbines are all visible across the extent of the view and appear large, as would be expected in a location close to the site.

Overall, the magnitude of change is considered to be High:

Extensive intrusion of the development in the view... to the extent that the development becomes co-

dominant with other elements in the composition

Significance of visual effect

The visual effect is considered to be **Significant**. The quality of the visual effect is considered **adverse**.

This is a result of the High magnitude of the change, and the Medium sensitivity of the visual receptor. The two montages are described separately, but an overall conclusion as to visual effect is drawn.

The quality of the effect is considered adverse in photomontage A and neutral in Photomontage B. The view in Photomontage A already has a number of elements in the view, and the turbines are spread across the entire extent of the view, and appear behind the dwelling and buildings as well as behind some vegetation, increasing the sense of clutter. However, the view in Photomontage B is a simpler composition, and while the turbines are clearly visible, the open nature of the view remains.

Cumulative Effect

The cumulative effect (combined/in combination, where other turbines are visible in the same field of view) is considered Not Significant – as there are few existing turbines visible in the photomontages and these are in the distance.

However, combined 'in succession' views, are likely, where the viewer would turn their head to the north/northeast and would be likely to see some of the existing Leanamore turbines blade tips which would also appear in close proximity, being approximately 3.3 kilometres from this location. To the northwest and west, the viewer would likely see some of the existing Tullahennel South and the permitted Ballylongford turbines, depending on the screening. The cumulative visual effect is considered **Moderate**. The quality of the view is considered **adverse**. Refer to additional detail in Section 13.3.5 regarding Cumulative effects.

Table 13.19: Viewpoint 11

Viewpoint 11 - View from R552 at Coolkeragh

Existing View

The existing baseline view is taken from the Regional road as it travels through a flat landscape between Listowel and Ballylongford. In the foreground, a large grass field is visible, with a hedgerow and some vegetation evident in the middleground. To the left of the view, the land slopes and some bogland is evident in between the gaps in the vegetation. In the distance, the hills of Co. Clare are visible, with the chimney stacks of Moneypoint power station seen to the left of the view. A number of wind turbines are evident – several to the left of the view, near Moneypoint, and several turbines are visible to the left and the centre of the view.

Visual Receptor Sensitivity

This viewpoint is along a regional road and represents viewers driving or walking through the

landscape, though the road is relatively narrow with no real verge, and motorists may be travelling slower than on other stretches of the road. However there are some long distance and expansive views. The visual receptor sensitivity is considered Low-Moderate.

Magnitude of Change

The photomontage shows that the proposed Shronowen turbines are visible across a large proportion the view. All 12 turbines are visible and while they appear as a cluster, with the exception of the left turbine, they are generally in a staggered layout. The turbines, while clearly visible, are not a new element in this view. The magnitude of change is considered to be 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 visual effect is considered Moderate, as a result of the Low-Medium visual receptor sensitivity and the Medium magnitude of change. The quality of the effect is considered adverse. The turbines are seen against the skyline with little or no backdrop, appearing to protrude against the horizon.

Cumulative Effect

The baseline photograph shows there are several existing wind turbines visible, including the distant Moneypoint turbines, as well as the existing Leanamore turbines to the centre of the view. The wireline shows that several of the consented Ballylongford turbines would also likely be visible to the left of the view. The proposed Shronowen turbines are likely to result in a **Slight-Moderate** cumulative effect, in addition to the existing turbines in the view.

Table 13.20: Viewpoint 12

Viewpoint 12– View from Gabbett’s Bridge, Tullamore

Existing View

Two baseline photographs, A and B, represent the existing views. This is due to the proximity of the viewer to the turbines, meaning two baseline images are necessary to capture the view of the site and context.

This viewpoint is located on the local road directly south of the site. This view shows an open landscape, with an open grass field in the foreground, with a distant view of flat bogland in the distance. In the background, Baseline photograph 12a shows the hill of Knockanore provides the backdrop to an otherwise flat landscape. There is little vegetation, with several scattered trees. To the right of the view, in the distance, two distinct group of wind turbines are visible. (Tullahennel South and the more distant Tullahennel North turbines). (The wireline view shows a third group of permitted turbines). Baseline photograph 12b shows the existing Leanamore turbines are visible to the right, and appear in this view as two distinct groups.

Visual Receptor Sensitivity

Representing a viewpoint location from a minor road at Gabbett's bridge, the viewpoint is not directly representative of residential receptors, but a dwelling a short distance to the east is likely to have a similar view. The view is over a flat landscape but the peak of Knockanore is prominent and adds a scenic quality to the view. The visual receptor sensitivity is considered Medium.

Magnitude of Change

There are 3 photomontages, A, B and C, representing the three photomontage views at the narrower angle required (53.5 degrees.) The magnitude of change is considered High:

Extensive intrusion of the development in the view... 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.

Photomontage A shows the turbines occupy a large proportion (both in width and in height) of the view, though they appear well spaced out. The turbines appear large, though this is to be expected in such close proximity, and are considerably larger in scale in this view, than any existing turbines. Turbines, however, are not a new feature in this view.

Photomontages B and C and shows the turbines occupy a lesser extent of the view, but are large structures in close proximity. Though existing turbines are a feature of the view, they are at some distance and much smaller in scale.

Significance of visual effect

The significance of the visual effects at this location is considered a **Significant** visual effect. The quality of the effect is considered adverse in Photomontage A, as the high number of turbines adversely affect the simplicity of the view towards Knockanore. It is noted that the quality of the effect in Photomontage B and C is considered neutral as the open and expansive views are not adversely affected. However, as the viewer is in one location experiencing the views the overall quality is considered adverse.

Cumulative Effects:

The 2 baseline views, 12a and 12b, and the accompanying wireframes illustrate the two closer wind farms in the area, Tullahennel South and Leanamore, are clearly visible. A further permitted wind farm, Ballylongford, is yet to be constructed but will appear adjacent to the Tullahennel South turbines. The proposed Shronowen turbines are much closer to the viewer, relative to the other turbines, so the viewer will experience both close up and distant views of turbines in several directions from this location. The cumulative effect is considered **Moderate-Significant**.

Table 13.21: Viewpoint 13

<p>Viewpoint 13 - View from R553 from Ballybunion-Listowel south of Lisselton Cross</p> <p>Existing View:</p> <p>This view shows a large flat grass field, with a dense hedgerow to the right of the view, and some vegetation and scattered houses to the left of the view, in the distance. In the centre of the view, distant vegetation is visible.</p>
<p>Visual Receptor Sensitivity</p> <p>This view, from a Regional road, with no designations and not considered scenic, represents viewers travelling at some speed through the landscape and is considered of Low sensitivity.</p>
<p>Magnitude of Change</p> <p>None – the proposed turbines are not visible.</p>
<p>Significance of visual effect</p> <p>None.</p>
<p>Cumulative Effect</p> <p>None.</p>

Table 13.22: Viewpoint 14

<p>Viewpoint 14 - View from Guiney's Cross Roads, Coolacarig</p> <p>Existing View</p> <p>The existing view shows a view from close to Viewpoint 15 but more directly south of the proposed turbines at a crossroads along the same local road. In the foreground, a large area of grassland is visible, with a cluster of farm buildings and a dwelling to the right of the view. A hedgerow with vegetation defines the middleground, while in the background, a patchwork of fields with some vegetation is evident, with an area of open bogland also visible. A number of wind turbines are visible to the left and right of the image, as well as a steel pylon and some wooden electricity poles. The view is that of a flat, open landscape with the existing turbines and steel pylon the main elements of height. The chimney stacks of Moneypoint are also visible in the distance, in the centre of the view. The view is a pleasant view over a working rural landscape, but not considered highly scenic. The landscape appears relatively large in scale.</p>
<p>Visual Receptor Sensitivity</p> <p>This viewpoint is close to a crossroads and while not outside any residence, a number of dwellings</p>

<p>line the nearby roads. This viewpoint therefore represents viewers travelling along these roads. Visual receptors sensitivity at this location is considered to be Low-Medium.</p>
<p>Magnitude of Change</p> <p>Two photomontages (at 53.5 degrees) depict the proposed Shronowen turbines. The turbines are all visible, with the towers of the turbines visible also. They are spread across the view, and are of large spatial extent in both photomontages, particularly in Photomontage A. The magnitude of change is considered High:</p> <p><i>Extensive intrusion of the development in the view, or partial intrusion that obstructs valued features..., 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.</i></p> <p>It is noted that the character of the view is already somewhat industrial, with several large wind farms and the steel pylon and powerline evident in the view.</p>
<p>Significance of visual effect</p> <p>The significance of the visual effects at this location would be Moderate, resulting from a Low-Medium visual receptor sensitivity and a High magnitude of change. The quality of the effect is considered adverse. The proposed photomontages show a somewhat ‘cluttered’ view, resulting from the existing turbines, proposed turbines, and electricity related infrastructure, in both the foreground and in the distance of the view.</p>
<p>Cumulative Effect</p> <p>The baseline image shows a view with several existing wind turbines (Tullahennel and Leanamore) which are clearly visible in the view. There is a strong element of electricity infrastructure in the view (Moneypoint stacks and powerlines) and the addition of the proposed Shronowen turbines adds to an already cluttered landscape with an agricultural and increasingly industrial character. It should be noted that ‘in succession’ visual effects are likely where the viewer looks to their left, where the permitted Tullamore solar farm panels may be visible. The cumulative effect is considered Moderate, and adverse in nature.</p>

Table 13.23: Viewpoint 15

<p>Viewpoint 15 - View from local road near Dore’s Cross Roads, Clontubbrid North</p> <p>Existing View</p> <p>The existing view shows a narrow local road to the left of the image, with a flat field of grassland to the foreground of the view. In the middleground, a line of coniferous plantation extends across the view, with some shrubby vegetation at the edges of the plantation. To the right of the image, trees and shrubs also restrict views. A gap in the vegetation allows views to an area of bogland, interspersed with some shrubby vegetation. The vegetation restricts long distance views, due to the flat topography. However in the background, several wind turbines are just visible over the trees,</p>
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along with some steel pylons where the gap in vegetation allows views. Overall, the view has an open character with a simple composition of fields, bogland and vegetation with few structures.

Visual Receptor Sensitivity

Representing a viewpoint location along a local road, though close to a cluster of houses and a GAA pitch, the visual receptors would largely be those walking on and driving on the road. Sensitivity is considered Low-Medium.

Magnitude of Change

The proposed photomontage shows that all 12 of the proposed turbines are visible in the view. While several of these are partly screened behind the forestry, four of the turbines are fully visible. They occupy a moderate extent of the view, and are visible but not dominant. The forestry and vegetation are vertical elements which makes the turbine height less apparent. 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 effect is considered Slight - Moderate, resulting from a Low-Medium sensitivity combined with a Medium magnitude of change. The quality of the effect is considered neutral, as the turbines do not dominate, and the forestry provides an element of height. The overall simplicity of the view is not affected.

Cumulative Effect

Several of the Tullahennel turbines can be seen behind the forestry, as noted above. The wireframe shows that the consented Ballylongford turbines would be located to the right of these and the blades are likely to be visible. The addition of the proposed Shronowen turbines will result in a view where these existing turbines would be seen in the background, and among the Shronowen turbines. The overall cumulative effect is considered **Slight** and neutral.

Table 13.24: Viewpoint 16

<p>Viewpoint 16 - View from R551 northeast of Ballyduff (taken from a location of a view/prospect but looking in the opposite direction from the intended view)</p> <p>Existing View</p> <p>The existing view is taken from a stretch of road south of the Ferry Bridge, which crosses the Cashen River. This view shows a slightly elevated view, showing dense roadside vegetation which blocks the foreground view. In the middleground, a large swathe of coniferous plantation is visible, which, combined with the roadside vegetation, prevents views of the river. In the background, higher ground is visible in the distance, with more prominent hills visible to the centre and right of the view. Several wind turbines are evident on the higher ground and slopes to the centre of the view.</p>
<p>Visual Receptor Sensitivity</p> <p>This is along a stretch of road indicated as a scenic view in one direction (to the east, towards the Cashen River estuary) away from the proposed development) and so the view in this direction is not designated. The view itself has some scenic qualities but overall is considered Moderate sensitivity.</p>
<p>Magnitude of Change</p> <p>The proposed view shows the proposed Shronowen turbines appear as distant features in the background, to the right of the road. Just two hubs are visible in the image (three in the wireframe but one is screened) and several blades are also visible. These appear in a cluster behind a distant ridge and are not in any way prominent. The magnitude of change is considered Negligible:</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>Significance of visual effect</p> <p>The significance of effect is Not Significant. The quality of the effect is considered Neutral.</p>
<p>Cumulative effect:</p> <p>Several groups of wind turbines are shown in the baseline photograph, but these are extremely distant and difficult to distinguish. The wireframe depicts two of the proposed Ballyhorgan turbines to the right of the view. The cumulative effect as a result of the addition of the Shronowen turbines is considered Imperceptible and neutral in quality.</p>

Table 13.25: Viewpoint 17

<p>Viewpoint 17 - View from R553 northwest of Listowel</p> <p>Existing View</p> <p>This is a view from the outskirts of Listowel, along a stretch of road with many houses. The view shows a large open grass field in the foreground, with an entrance gate to the left. In the centre of the view a wall is visible in the distance, to either side, adjacent residences are visible, set back from the road. An area of vegetation is visible to the right of the view in the distance. The character of the view is sub-urban.</p>
<p>Visual Receptor Sensitivity</p> <p>This represents those travelling along the road at some speed, and is nearby to a number of residences though these are set back from the road and may have less open views. The visual receptors sensitivity is considered Low.</p>
<p>Magnitude of Change</p> <p>The magnitude of change is considered Low. Three turbine hubs are visible in the photomontage, occupying a very limited proportion of the view. The remaining turbines are screened by the forestry, apart from one blade being slightly visible. These are visible but are in the distance, and are not obtrusive elements in the view.</p>
<p>Significance of visual effect</p> <p>The visual effect is considered Not Significant, neutral effect.</p>
<p>Cumulative Effect</p> <p>The existing and consented turbines are not visible so there is no cumulative effect.</p>

Table 13.26: Viewpoint 18

<p>Viewpoint 18 - View from local road and protected view location at Glenlea</p> <p>Existing View</p> <p>The existing view shows an open, expansive view over an agricultural landscape, with the coastline visible to the left of the image. The foreground is composed of several large fields with low or no hedgerows, creating an open character. In the middleground, several scattered dwellings are visible, and a patchwork of fields, and to the left of the view, a beach and the sea is visible. In the background, the higher ground of Knockanore is the main feature, though some distance away. A ridge of higher ground is also seen to the right of the image, in the distance, with some wind farms visible in the distance. A number of existing turbines are evident in the wireframe view, though these are difficult to make out due to their distance and to weather conditions.</p>

<p>Visual Receptor Sensitivity</p> <p>This view represents viewers travelling along the scenic route (which is in the direction of the view, to the northeast) and sensitivity is considered High. The view is close to but not within any landscape designations.</p>
<p>Magnitude of Change</p> <p>The proposed view shows that the proposed turbines are just visible in the centre of the view, where several turbines protrude very slightly above the horizon. The wireframe view shows that only a small proportion of the turbines are visible due to the topography, and in the photomontage, even fewer are visible due to screening. These are difficult to distinguish. The magnitude of change is considered Negligible:</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>Significance of visual effect</p> <p>The significance of effect resulting from a High visual receptor sensitivity and Negligible magnitude of change is considered Not Significant.</p>
<p>Cumulative Effect</p> <p>Several turbines are outlined in the wireframe, however the majority of these do not appear discernible in the baseline photograph. The Dromada/Athea cluster is just visible in the right of the image on the higher ground. The wireframe view also shows the proposed Ballyhorgan turbines will appear to the right of the baseline image. The Cumulative effect is considered Imperceptible.</p>

Table 13.27: Viewpoint 18

<p>Viewpoint 19 - View from R556 at Clooncolla, east of Lixnaw</p> <p>Existing View</p> <p>This view is taken from the R557 north west of Finuge village. The view shows a road bordered by managed hedgerows, with a large field of agricultural grassland to the left of the view. In the middleground there are some mature trees and vegetation, which are visible across the extent of the view. In the background, to the left, there is a ridge of higher ground. The character is that of an open, flat rural landscape with a proportion of trees and vegetation to the right of the view. A cluster of turbines are partly visible behind a ridge to the left of the view, while there are also some distant turbines to the centre of the view. (It is noted that the wireframe includes the proposed Ballyhorgan turbines in the foreground to the right of the drawing).</p>

<p>Visual Receptor Sensitivity</p> <p>The visual receptors would be those driving along the Regional road, or possibly walking – though it is noted that the road has no hard shoulder and a narrow verge. Visual receptor sensitivity is considered Low.</p>
<p>Magnitude of Change</p> <p>The photomontage shows that the proposed Shronowen turbines are visible in a cluster, in the centre of the view. Nine of the turbines are visible or partly visible, with three screened by intervening vegetation. The turbines are visible but distant, and not in any way dominant. The magnitude of change is considered Low:</p> <p><i>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.</i></p>
<p>Significance of visual effect</p> <p>The visual effect is considered Not Significant. This results from a Low visual receptor sensitivity, and a Low magnitude of change. The quality of the effect is considered neutral.</p>
<p>Cumulative Effect</p> <p>Several distant windfarms are visible in the baseline photograph, and the addition of the Shronowen turbines, also distant and partly visible behind the intervening vegetation is considered to be Not Significant. The turbines appear close to the existing Leanamore cluster and only result in a minor increase of the spatial extent of turbines in the view. The wireline drawing also shows several of the proposed Ballyhorgan turbines would be visible to the right of the view, relatively close to the viewer.</p> <p>The cumulative effect arising from the addition of the proposed Shronowen turbines in the distance is considered Not Significant. The quality of the effect is considered Neutral.</p>

Table 13.28: Viewpoint 20

<p>Viewpoint 20 - View from R555 southeast of Duagh</p> <p>Existing View</p> <p>This view is from a regional road, in an elevated location, and represents viewers southeast of Duagh. This view is taken opposite a dwelling, and there are rough grass fields on either side of the house in the foreground. In the middleground, the land rises to the left of the view, while falling to the right of the view. The landscape is a patchwork of small fields with a large clump of vegetation in the centre of the view. Several turbines are barely visible to the left of the view.</p>

Visual Receptor Sensitivity

This is considered to be Medium, as it is directly adjacent to a residence, and a location with some long distance views.

Magnitude of Change

The proposed turbines are visible along the ridge of higher ground to the rear of the view, and at some distance. They do not appear prominent, and are visible but in no way dominate the view and appear over a limited extent. (At this distance, weather conditions will also have a greater effect on visibility.) The magnitude of change is considered 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.

Significance of visual effect

The visual effect is considered Slight. The quality of the effect is considered Neutral.

Cumulative Effect

A number of turbines are visible in the view, including the Beanaspuck turbines to the right of the baseline photograph, and the Tullahennel South turbines are just visible behind the ridge, though these are distant and difficult to perceive. Several other existing turbines in the wireline drawing are distant, and difficult to see. The addition of the proposed Shronowen turbines to the view, along with the consented Ballylongford turbines, would result in a greater number of turbines being visible behind the ridge, in the distance. These turbines would appear in a cluster, as indicated on the wireline. It is noted that the viewer could turn their head to see the Beanaspuck turbines which is considered a combined 'in succession', effect.

The cumulative effect is considered to be **Not Significant** and neutral in quality.

13.3.2.3 Summary of Visual Effects

The summary of the visual effects at the viewpoints are as follows:

Table 13.29: Summary of visual effects at Viewpoints 1-20:

Final No	Description	Visual Effect
1	View from N67 and Scenic Route at Ballymacronan Bay	Slight-Moderate, neutral
2	View from R551 west of Astee	Not Significant, neutral

3	View from Carrigafoyle Castle	Not Significant, neutral
4	View from Saleen	Not Significant, neutral
5	View from R552 at Ballynacasy	Not Significant - Slight, neutral
6	View from R551 between Ballylongford-Tarbert	Not Significant, neutral
7	View from N69 at Tarmon West	Moderate, neutral.
8	View from R524 at Dromreask	Slight, neutral.
9	View from local road and Scenic Rout east of Knockanore	Moderate, neutral
10	View from Ballyline West	Significant, adverse
11	View from R552 at Coolkeragh	Moderate, adverse
12	View from Gabbett's Bridge, Tullamore	Significant, adverse
13	View from R553 from Ballubunion-Listowel south of Lisselton Cross	None
14	View from Guiney's Cross Roads, Coolacarig	Moderate, adverse
15	View from local road near Dore's Cross Roads, Clontubbrid North	Slight-Moderate, neutral
16	View from R551 northeast of Ballyduff	Not Significant, neutral
17	View from R553 northwest of Listowel	Not Significant, neutral
18	View from local road and protected view location at Glenlea	Not Significant, neutral
19	View from 5556 at Clooncolla	Not Significant, neutral
20	View from R555 southeast of Duagh	Slight, neutral

The visual effects range from Not Significant to Significant, and the quality of the visual effects range from neutral to adverse. Eight of the views are considered Not Significant or Not Significant-Slight, while three viewpoints were considered Slight. Two viewpoints were considered Slight-Moderate, Four were considered Moderate and two Significant. One of the viewpoints had no view of the proposed development.

Site and Immediate Vicinity

A high number of views were taken in the immediate vicinity of the site – Views 10,11,12,14 depict a number of locations along local roads where open views of the site are evident. These viewpoints range from Moderate to Significant, depending on the location. The visual effects are more pronounced in these locations due to the proximity to the turbines and the flat topography, and open views with little or no intervening vegetation. These visual effects are localised, and all occur within just over 2 kilometres from the nearest turbine. A further viewpoint 15, which is less than 4 kilometres from the nearest turbine, will undergo a Slight Moderate effect.

However, all other views, with the exception of Viewpoint 9, resulted in Not Significant, Slight or Slight-Moderate effects.

There are a number of non-turbine elements which will also give rise to localised visual effects. The proposed substation to the west of the site (close to viewpoint 12) is likely to be visible from the nearby road, as it is in an open location. The nearby pylons will also be visible from this road and are considered to have Slight to Moderate adverse effects in this area. These effects are relatively localised, but the pylons may be visible from some distance.

However, should the alternative grid connection option be utilised, as outlined in Chapter 2, the line will be underground in the road corridor and connecting to the Tullamore solar farm substation, and therefore reduce visual effects. Visual effects as a result of this will be temporary effects in the road corridor during the construction stage, but no visual effects will occur as a result of the grid connection cabling during the operational phase.

Wider landscape

Viewpoint 9, an elevated scenic view on the eastern side of Knockanore, was considered to have a Moderate and neutral visual effect. Viewpoints 5,6,7, all within 5 kilometres of the nearest turbines, range from Not Significant (Viewpoints 5,6) to Moderate (Viewpoint 7). Viewpoints 5 and 6 illustrate that further north, vegetation and topography provide screening along sections of the Regional Road R551. More distant views range from Not Significant to Slight, with one Slight-Moderate.

Designated Landscapes/Viewpoints

Several areas in the wider landscape are considered to have sensitivities, and several viewpoints represent these. The only part of the Secondary Special Amenity Area to the north of the site which shows theoretical visibility is the area in the vicinity of Carrig Island and Carrigafoyle Castle, represented by Viewpoint 3. Though the elevated view from the castle shows visibility of only one turbine, a further view from the ground level was taken but showed no visibility. This area has considerable views of the existing Tullahennel turbines and will have views of the permitted Ballylongford turbines also, but the landscape retains its tranquil character, and simple landcover. Viewpoint 4 is also taken from within this landscape designation and close to Lislaughtin Abbey. The view back towards the Abbey shows that the Shronowen turbines will result in little change to the view.

The area of Primary Special Scenic Amenity in the vicinity of Ballybunion will not be affected by the proposed turbines, as seen on the ZTV map.

The Shannon estuary has its own character, and areas on the northern and southern shores are designated by various local authorities. The shores from Kilrush as far as Loop Head are part of Heritage Landscape, with several scenic routes. A scenic route is also located to the east of Kilrush near Moneypoint.

These coastal areas are likely to have views of the proposed development, and Viewpoint 1 is representative of the closest scenic route along the northern shore, to the proposed development. This viewpoint is considered a Slight-Moderate and neutral visual effect, and though a number of other scenic routes are located in the vicinity of Carrogaholt, the views will be more distant, and the visual effects are likely to be similar or less pronounced and may be Slight, but not considered to be Significant. Visibility across the estuary will also be dependent on the weather conditions. The closest part of the Clare Heritage Landscape to the proposed development is on Scatterry Island, a location which could not be visited due to seasonal closure and Covid-19 related restrictions. At

approximately 11 kilometres, the turbines may be visible, but the effects are not likely to be significant. Review of aerial imagery and Google Maps suggests that many of the houses face to the east, and there is some vegetation which may reduce visibility from the vicinity of the monuments.

The other scenic route in Co. Kerry which has views in the direction of the proposed development is Viewpoint 18, and the visual effect is considered Not Significant.

13.3.3 Decommissioning Phase

As noted in Chapter 2, if planning permission is not sought after the end of life of the turbines, the site will be decommissioned and partially reinstated with all 12 No. wind turbines and towers removed. 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 an environmental assessment of the decommissioning operation demonstrates that this would do more harm than leaving them *in situ*.

The proposed substation will remain in place as it will be under the ownership of ESB/EirGrid.

Hardstand and turbine foundation areas will be left in situ and covered with soil to match the existing landscape. Access roads will be left for use by the landowners and local population who have established access rights to Shronowen Bog.

13.3.3.1 Landscape Effects Site and Immediate Vicinity - 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.

While the changes to the landscape fabric will have happened, the landscape will return largely to what it is today. A proportion of peat will have been extracted and is to be stored in several deposition areas which is to remain there permanently.

The changes to the overall landscape fabric (the physical structure) as a result of the decommissioning are considered Low. The changes to the overall landscape character following the removal of the turbines will be minimal, and the area will be returned to similar to what it is today. The substation and pylons will remain, and these are permanent in duration.

Wider Landscape - Magnitude of Change

The changes to the wider landscape character following the removal of the turbines will be minimal, and the area will be returned similar to what it is today, resulting in a Negligible magnitude of change.

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.

13.3.4 Risk of major accidents and disasters

n/a

13.3.5 Cumulative effects

An inventory of all existing, permitted (those granted permission but not built) and proposed developments (those in the planning process where a decision has yet to be made) was carried out.

The existing wind farms within 30 kilometres include:

- Curraghderrig (2 turbines)
- Beale (4 turbines)
- Beale Hill (2 turbines)
- Larha (2 turbines)
- Tullahennel North (2 turbines)
- Tullahennel South (9 turbines)
- Leanamore (9 Turbines)
- Toberatooreen (4 turbines)
- Beenanaspuck (3 turbines)
- Pallas (26 Turbines)
- Tullabrack (6 Turbines)
- Moanmore (7 Turbines)
- Moneypoint (5 Turbines)
- Dromada/Athea cluster (37 turbines)
- Stacks mountain cluster (149 turbines)

Permitted:

- Ballylongford (6 turbines)
- Carhooearagh (2 turbines)

Proposed:

- Ballyhorgan (12 turbines)

In addition, a solar farm has been granted planning permission approximately 2 kilometres south of the proposed wind farm site, at Drombeg.

13.3.5.1 Cumulative Landscape Effects

Cumulative landscape effects include the effects as a result of the proposed development in addition to the other wind farm developments on the landscape character.

This relates mainly to the visibility of the proposed turbines in the landscape and the change as a result of their presence. The landscape character of the site and immediate vicinity is already influenced by a number of wind farms and at the wider landscape scale, this will not result in significant effects on the wider landscape character.

Much of the sensitive designated landscapes in the study area will not have visibility of the proposed turbines, and cumulative effects at Viewpoints 3 and 4 in the area of secondary Special amenity closest to the site are considered Not Significant and visibility is confined to a smaller area.

Viewers in the landscape close to the site are likely to experience the most pronounced visual effects as there are several wind farms in relatively close proximity. Combined – ‘in combination’ effects and ‘in succession’ effects are likely to arise, but sequential views as viewers travel through the

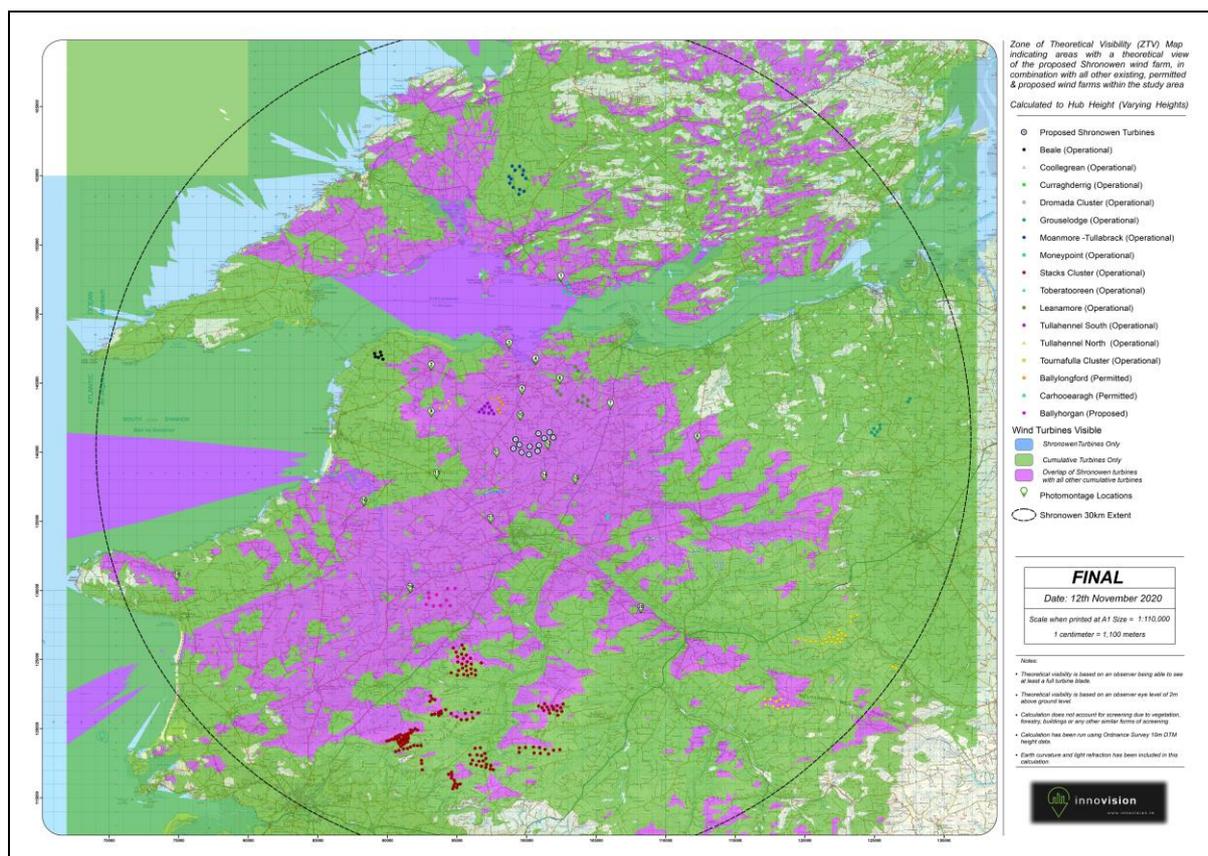
landscape, will also be experienced. The likely effect on the landscape character of the area will result in an increase in parts of this landscape in an area where wind energy is a key characteristic. This will depend on the visibility of the turbines which will change as one moves through the landscape, and therefore cumulative landscape effects are more pronounced in the site and immediate vicinity. Cumulative visibility is discussed further below.

13.3.5.2 Cumulative Visual Effects

Cumulative ZTV Map

The Cumulative ZTV is included at full size in **Volume 4**, and a reduced version included as Figure 13.9 below. This indicates the other wind farms in the 30km radius, as well as the theoretical visibility of the proposed Shronowen turbines, The map differentiates the areas with theoretical visibility of the Shronowen turbines in conjunction with the other cumulative turbines from the areas with theoretical visibility of the other turbines only (and not visibility of Shronowen).

Figure 13.9: Cumulative ZTV (reduced version)



The map shows that there are no areas which will have visibility of the proposed Shronowen turbines without views of any other turbines.

The pattern of visibility of the Cumulative turbines plus Shronowen reflects that of the ZTV of the proposed turbines, extending from around the site itself, to areas along the Shannon estuary and into parts of Co. Clare, and from the site to the southwest along the lower ground. Visibility from the slopes of higher ground to the south and east is also evident. Refer to the ZTV description in section 13.3.2.2 for a fuller description.

Viewpoints –Cumulative visibility

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.

Cumulative visual effects may also be experienced as sequential effects, for example, several windfarms experienced in sequence along a route.

It should be noted, as in Section 13.2.2, that wind turbines are an established feature of this landscape, and part of its character.

The 20 viewpoints were assessed for cumulative effects, as outlined in the Viewpoint descriptions. These mainly focussed on combined in combination effects, where more than one wind farm was visible in the same image. However, in a number of views, combined ‘in succession’ views were also identified.

Out of the 20 viewpoints, cumulative effects arise in 18 of the views, which is largely to be expected in an area where wind farms are an element of the character and of many of the views. Two views (13 and 17) both south of the site showed no Cumulative effects.

The cumulative effects arising at each viewpoint is summarised in Table 13.30 below:

Table 13.30: Summary of visual effects at Viewpoints 1-20:

Final No	Description	Cumulative effect
1	View from N67 and Scenic Route at Ballymacronan Bay	Slight, neutral
2	View from R551 west of Astee	Not Significant
3	View from Carrigafoyle Castle	Not Significant, adverse
4	View from Saleen	Not Significant, neutral
5	View from R552 at Ballynacasy	Not Significant, neutral
6	View from R551 between Ballylongford-Tarbert	Slight, adverse
7	View from N69 at Tarmon West	Slight-Moderate,

		neutral
8	View from R524 at Dromreask	Slight, neutral
9	View from local road and Scenic Rout east of Knockanore	Moderate, neutral
10	View from Ballyline West	Not Significant to Moderate, adverse
11	View from R552 at Coolkeragh	Moderate, adverse
12	View from Gabbett's Bridge, Tullamore	Moderate-Significant, adverse
13	View from R553 from Ballubunion-Listowel south of Lisselton Cross	None
14	View from Guiney's Cross Roads, Coolacarig	Moderate, adverse
15	View from local road near Dore's Cross Roads, Clontubbrid North	Slight, neutral
16	View from R551 northeast of Ballyduff	Imperceptible, neutral
17	View from R553 northwest of Listowel	None
18	View from local road and protected view location at Glenlea	Imperceptible.
19	View from 5556 at Clooncolla	Not Significant, neutral
20	View from R555 southeast of Duagh	Not Significant, neutral

Of the 18 views where cumulative visual effects were identified, two were considered Imperceptible, six Not Significant, four were Slight, Four Moderate, and one Moderate-Significant In only three viewpoints (Viewpoints 10,11 and 14) were the quality of the effects considered adverse.

Cumulative visual effects - immediate vicinity of the site

Viewpoints close to the site are likely to experience the most pronounced visual effects as there are several wind farms in relatively close proximity. Combined – 'in combination' effects and 'in succession' effects are likely to arise, but sequential views will also be experienced.

Viewpoint 10 represents a minor local road close to the site, where open views to the proposed Shronowen turbines will be experienced. In addition, the viewer is likely to see some of the Leanamore turbine tips to the north west (partly screened by buildings) and turning to the west/northwest, views of some the Tullahennel South/North and permitted Ballylongford turbines are likely. However, not all of these other turbines are evident at this actual viewpoint. Sequential views of these various windfarms are likely to be available while driving along this road and nearby roads north of the site, and in some locations the turbines may appear at relatively close proximity. Distant views of turbines to the east are also likely to be available.

Viewpoint 12 also illustrated pronounced cumulative effects, to the southeast of the site, with the effect considered Moderate-Significant. Cumulative visual effects from Viewpoints 11 and 14, south of the site, are also considered of Moderate significance.

'In-combination' and 'in-succession' effects are also likely for visual receptors north and west of the site, along the R551 and the Ballylongford-Moyvane road north of the site, as a result of the Tullahennel (and permitted Ballylongford) turbines to the west of the R551, and the existing Leanamore turbines on the north of the Moyvane-Ballylongford road. The effects will vary depending on screening and are likely to be intermittent. There are considerably open views along the Moyvane road, with slightly more screening along the R551. Viewpoint 7 is slightly further away to the east and cumulative effects here are considered Slight -Moderate.

In relation to the permitted solar development south of the site, it is noted that this is likely to be visible from Viewpoint 14 Guiney's crossroads in the Existing View as noted in Table 13.22, with more open views of the panels and proposed turbines available to the west of Viewpoint 14.

The solar farm would therefore be visible to the left of the wind turbines, resulting in 'in succession' cumulative effect. Based on the information available, it does not appear the solar farm would be visible from Viewpoint 12 Gabbett's bridge due to screening. Views of the permitted solar farm and the proposed Shronowen turbines, either 'in-combination' or 'in-succession', are likely on open sections of the local road between Bedford Cross Roads and Guiney's Cross roads. 'In succession' views may be available from parts of the road southwest of Gabbett's bridge, where the turbines would be visible to the north of the road, and the solar farm to the south. Cumulative visual effects are considered to be relatively localised, however some glimpses may be available from elevated locations. It should be noted that visibility in the wider landscape is not illustrated in the documentation's viewpoints.

Cumulative visual effects – wider landscape

Combined cumulative visual effects will also be experienced in the wider landscape, but these are not likely to result in Significant effects. The visual effect from viewpoint 9 from east of Knockanore is considered Moderate, and neutral in quality, while views range from Imperceptible to Slight-Moderate. In many of these viewpoints, the proposed turbines will be a distant feature, including Viewpoints 16,18,19,20. Sequential cumulative effects are likely when travelling through the wider landscape, whether from Co. Clare across the Shannon estuary by ferry to Tarbert, and when driving north-south through the landscape with the considerable cluster of Stacks mountains to the south and the Athea/Dromada cluster to the east. West of Listowel, however, is an area relatively free of turbines.

Designated Landscapes/Viewpoints

Cumulative visual effects resulting from the addition of the Shronowen turbines are not considered to be Significant in views representing sensitive receptors in the wider landscape.

Several views (1,9,18) are taken from scenic routes. Of these, the closest is Viewpoint 9, a scenic view and Shannon way trail, which is considered Moderate and neutral in quality, being an elevated vantage point with panoramic views over the landscape and Shannon estuary. Viewpoint 18 is distance and cumulative effects are considered Imperceptible.

Much of the designated landscapes in the study area will not have visibility of the site, and cumulative effects at Viewpoints 3 and 4 in the area of Secondary Special Amenity are Not Significant and visibility is confined to a smaller area.

Viewpoint 1 represents viewers on the scenic route west of Moneypoint in Co. Clare, where several turbines are visible across the estuary. This is an area with high scenic qualities, and the views across the estuary have a simple composition of seascape, with a backdrop of gentle hills and several wind farms. Turbines are a feature of the estuarine landscape, which is tranquil but not without its industrial elements. This view is not adversely affected by the proposed turbines, though they will be visible in clear weather and are considered a Slight-Moderate and neutral effect.

The Heritage landscape includes Scatterry Island, and further west, extends to Loop Head, with several scenic routes along the coast. There are likely to be views of several wind farms in addition to views of the proposed Shronowen turbines, however, at a distance of over 10 kilometres, and up to 16 kilometres in the vicinity of Carrigaholt, the Cumulative effects are not considered to be Significant. Here, the turbines are likely to appear in some views to the rear of the Tullahennel and proposed Ballylongford turbines, so may appear as part of a larger cluster. Visibility will be affected by weather conditions.

Recreation trails and Cultural Heritage

The Shannon Way which runs to the north of the site from east to west, traverses a number of roads and tracks, which wind through a landscape in which wind turbines are an established feature. There will be an increase in the turbines visible in many views from this walking route, which, travels very close to the Tullahennel turbines. Both sequential and combined cumulative effects will occur, and the addition of the Shronowen turbines is considered to result in Moderate cumulative effects, however this will vary throughout the route and in some cases the turbines will not be evident.

13.4 MITIGATION (AVOIDANCE AND REMEDIAL MEASURES)

13.4.1 Construction Phase

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

The second (temporary) entrance from the local public road L-1009 on the western side of the site will be closed following construction, and access will be possible but controlled.

Peat deposition areas will be located in six locations on the site, close to the location of the peat excavation. These will be deposited in areas where peat has been removed and will in some areas help to restore ground levels where there is an existing depression. Once the excavation works are completed, the peat deposition areas will be re-graded, fenced off for 12 months, in order to allowed to naturally re-vegetate.

13.4.2 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.

In relation to non-turbine elements, an earth berm of approximately 4.5 metres in height will be located outside the steep fencing of the substation. This berm will then be planted with a mix of native trees to assist in screening the substation from the local road. Over time as this vegetation establishes, the visual effect of the substation will be reduced. Enhancement Measures

The proposed new roads and upgrades to existing roads will greatly improve site access for walkers and cyclists. While access will be temporarily curtailed during construction, once operational, the

wind farm will have full, open and improved access to all users, landowners and to people who have turbary rights.

13.4.3 Decommissioning and Restoration Phase

No mitigation measures identified.

13.5 RESIDUAL IMPACTS

As for Likely significant effects.

13.6 CONCLUSION

- The site is located in North Co. Kerry, on a relatively flat plain. The site is bogland surrounded by mainly agricultural land, other areas of bogland, and settlements. Residences and roads are scattered throughout the area which is a working landscape. The Shannon estuary is approximately 6 kilometres to the north and the coastline of north west Kerry is within the study area.
- The site is considered 'Open to Consideration' for wind energy. The RES (2012) which is part of the Development Plan also characterised the landscape into 36 LCAs and took into consideration landscape characteristics in designating sites for wind energy.
- The site itself is not subject to any landscape designations which relate to scenic amenity. The nearest area of Secondary Special Scenic Amenity is approximately 4.6 kilometres to the north with the nearest area of Prime Special Scenic Amenity is located approximately 12.6 kilometres west of the site. The nearest scenic view is 6.3km west of the site.
- Wind turbines are an established characteristic of this landscape, and there are also industrial elements in the landscape. There are several existing wind farms in close proximity to the site, and wind energy is now an established use in this landscape.
- In the wider landscape, the power stations of Tarbert and Moneypoint are landmarks, and the industrial nature of parts the Shannon estuary is evident. This area is highly scenic, but also has strong industrial elements. North of the site, along the coast between Tarbert and Ballylongford, an area of land is designated for industrial use along the southern shore of the Shannon estuary. This lies directly east of an area of Secondary Special Scenic amenity.

Landscape Effects

- The landscape effects of the proposed turbines relate mainly to the change in overall landscape character, particularly at a local level. The change to the landscape character in the immediate vicinity of the site is considered to result in Moderate, and adverse effects in parts of this area, particularly to the east where the character is more open. It is however noted that wind farms and electricity generation are features of the landscape.
- However, the effects on the areas of more sensitive landscape in the wider area are considered to be less pronounced, and range from Not Significant to Slight. The Shannon estuary (particularly the Co. Clare coastline) is a sensitive landscape but also an industrial one in some areas.

- With regard to landscape effects, it is important to note that these are considered to be Long Term effects, and in terms of duration, they are reversible. Once turbines are decommissioned, the landscape character, other than limited parts of the actual site, will largely be as it was before.
- Cumulative landscape effect: Viewers in the landscape close to the site are likely to experience the most pronounced visual effects as there are several wind farms in relatively close proximity. Much of the sensitive designated landscapes in the immediate vicinity of the study area will not have visibility of the proposed turbines, and cumulative effects at Viewpoints 3 and 4 in the area of Secondary Special amenity closest to the site are considered Not Significant and visibility is confined to a smaller area.

Visual Effects

- The majority of the views (14) resulted in Not Significant, Slight or Slight-Moderate visual effects. One view (Viewpoint 13) resulted in no visual effects.
- Out of 20 views, four were considered to have an adverse quality, while the remainder were considered neutral in quality. These four views range from Moderate-Significant and are extremely localised, location within 2km of the site.
- No significant visual effects result from any designated viewpoints/scenic routes (or designated landscapes) within the study area, including in Co. Clare along the Shannon estuary.
- One scenic view (Viewpoint 9) was considered to undergo a Moderate and neutral visual effect as a result of the proposed Shroneowen turbines.
- Visual effects are also considered Long Term effects, and are reversible – these visual effects are mainly associated with the turbines, and will be removed when turbines are decommissioned.
- Cumulative visual effects: Viewpoints close to the site are likely to experience the most pronounced visual effects as there are several wind farms in relatively close proximity. Combined – ‘in combination’ effects and ‘in succession’ effects are likely to arise, but sequential views will also be experienced. Cumulative visual effects resulting from the addition of the Shronowen turbines are not considered to be Significant in views representing sensitive receptors the wider landscape.