Derrybrien Wind Farm Project

Gort Windfarms Ltd.

Remedial Environmental Impact Assessment Report
Chapter 9- Landscape and Visual

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9 Landscape and Visual

9.1 Introduction

The Derrybrien Wind Farm Project (the "Project") comprises:

- Derrybrien Wind Farm and associated ancillary works
- Grid connection comprising Derrybrien-Agannygal 110kV Overhead Line and Agannygal Substation connecting into the Shannonbridge -Ennis 110kV Overhead Line and associated ancillary works.
- Works undertaken in response to peat slide which occurred during construction of wind farm and associated ancillary works.

The wind farm comprises 70 no. wind turbines (with a rotor diameter of 52m and a hub height of 49m) , arranged in a grid formation across the ridge of Cashlaundrumlahan in the northern part of the Slieve Aughty Mountains in south east Galway. A number of turbines were buried to give a reduced hub height. The nearest settlement is Derrybrien, a small village 2km to the south. The wind farm is approximately 11km due south of Loughrea, 12.7km north north east of Gort and 25 km west of Portumna. Galway City lies some 35km to the north west of the site.

A full description of the project is contained in Chapter 2 of this remedial EIAR. The baseline environment against which impacts have been assessed is that which pertained in 1998.

9.1.1 Chapter Scope

This chapter provides an assessment of the impact of Derrybrien Wind Farm Project with respect to landscape and visual effects. This chapter includes the assessment of:

- Impacts which have already occurred
- Impacts which are occurring
- Impacts which are likely to occur.

9.1.2 Statement of Authority

The assessment of landscape and visual effects has been carried out Evelyn Sikora, BA MPlan, MILI. Evelyn has over six years' experience in preparing Landscape and Visual Assessment Reports (LVIA) as part of Environmental Impact Assessments (EIA) for various types of development including wind energy, solar, flood alleviation, and other infrastructure, as well as residential and commercial developments, in both rural and urban contexts. Declan O' Leary, MLI, MILI, Managing Director of Cunnane Stratton Reynolds also provided inputs and review of the report content.

Declan O'Leary has 25 years' experience in local development, landscape design, urban and environmental renewal. This includes master planning and design to implementation of a broad range of strategic environmental improvement schemes to industrial, highway and urban regeneration sites as well as reclamation, amenity,

rural/countryside, educational and housing projects. He is experienced in working closely with community organisations and statutory agencies to deliver local environmental, social and economic development.

Declan has worked in the area of Landscape and Visual Impact Assessment (LVIA) and Landscape Planning in Ireland since 2000. He has experience of addressing landscape issues in sensitive and heritage landscapes, the development of policy to guide appropriate development in those landscapes, and the preparation of LVIA for developments in the rural and urban context including renewables projects, roads, bridges and similar linear infrastructure. He is a Corporate Member of the Irish Landscape Institute and a Chaptered member of the Landscape Institute (UK).

9.1.3 Difficulties Encountered

A number of difficulties were encountered during the project.

9.1.3.1 Establishment of Baseline Landscape Environment

Difficulties were encountered in establishing exact baseline conditions for the windfarm site and wider landscape. The baseline for the Derrybrien wind farm project is c. 1998, before the wind farm was constructed. This is 22 years ago, a considerable period of time, and there were a number of difficulties in establishing an accurate picture of the landcover and landscape elements of the site environs and wider landscape in 1998.

The landcover of the wider landscape c. 1998 was difficult to establish in detail, and sources indicate a broad picture of the landscape at the time. Though certain sources (referred to in Section 9.2) were available to give information on the site and environs, including the forestry on the site, difficulties were encountered when attempting to distinguish features in the landscape which may or may not have been present.

These include buildings, and small scale changes to the landcover such as growth of trees and vegetation, which may not be evident or difficult to distinguish on aerial imagery. Section 2.1.4 also refers to difficulties encountered, including the lack of exact locations and dates of the off-site replacement tree planting in Co. Roscommon and Co. Tipperary.

It was not possible to determine accurately all of the landcover changes in the wider areas, but general trends in development were observed on the aerial images. Some difficulties were encountered in determining whether all elements in the viewpoints today were present circa 1998..

With regard to the views, and the visual baseline, there may have been views available at the time which are not available at the date of this assessment. Where assumptions are made with regard to the baseline, these are clearly stated. In the assessment of the viewpoints, it is not possible to accurately state whether screening would have been similar at the time of the baseline. Any assumptions made are clearly stated. Several site visits to the study area were carried out in 2016, as well as October 2018, July and November 2019.

The landscape and visual baseline, described in Section 9.3, was established through desktop study of Development Plans and their supporting documents for County Galway, produced in 1997, 2003, 2009 and 2015 and contain designations, policies, and maps and aerial imagery which provide information on the baseline c. 1998. The Phase 1 EIS and Planner's Report were reviewed as they contain some relevant information regarding the baseline, though the complete EIS was not available and some information (Viewpoint locations and Photomontages) was not accessible. The An Bórd Pleanála Inspector's Report for the Phase 3 EIS was also consulted for references to the baseline.

However, it should be noted that is that the benefit of a retrospective assessment it that allows the assessor to understand exactly how the development has been assimilated into the landscape.

The information gaps noted above are not considered to be such as to affect the robust assessment of the landscape and visual effects of the project.

9.1.3.2 Establishment of Methodology

Other difficulties encountered included the necessity of a different approach from standard assessment methodology in order to retrospectively assess the landscape and visual effects. As Landscape and Visual assessment usually deals with projects which do not yet exist, using a baseline of the present day scenario, guidelines do not cover retrospective visual assessment. Aids to visual assessment include the production of ZTV maps and visualisations. However as the project already exists in the landscape, the methodology to assess using visualisations was changed to reflect the needs of the project and is explained in Section 9.2 Methodology.

9.1.3.3 Access restrictions

Due to the flooding in the vicinity of Gort and Kiltartan in Winter 2019/2020, access to Thoor Ballylee in order to take a photomontage from the rooftop, was not possible. In addition, movement restrictions as a result of Covid-19 came into effect on March 28 2020 and have prevented any additional field visits or verification.

9.2 Methodology

The following section discusses the methodology currently used in LVIA, followed by an explanation of how this methodology was adapted to suit the retrospective nature of the assessment.

9.2.1 Definition of Landscape

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 on Landscape and Visual Impact Assessment* 3rd Edition (GLVIA) which is referenced in Section 9.2.2. below, refers to the many aspects of landscape. It refers to the landscape as a cultural resource, and the setting the landscape provides 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), and for recreation and tourism activities.

9.2.2 Forces for Landscape Change

The GLVIA also notes that landscape is dynamic. Many different pressures have progressively altered familiar landscapes over time and will continue to do so in the future, creating new landscapes. For example, the landscape of the Slieve Aughty Mountains was changed dramatically by afforestation in the latter part of the 20th century.

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.

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 transition from carbon-based fuels to renewable energies, is established in international, national and local policy. Large scale renewable energy projects have been one of the main causes of landscape change in the Irish landscape in the 21st century.

9.2.3 Guidance Documents

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 of the Derrybrien Wind Farm Project has been informed by several 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).
- *Guidelines on the Information to be Contained in Environmental Impact Statements,* 2002, published by the Environmental Protection Agency
- *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*, Draft 2017)
- *Draft Advice Notes for Preparing Environmental Impact Statements* (EPA, September 2015)
- *Wind Energy Guidelines for Planning Authorities*, 2006, (Department of Environment, Heritage and Local Government)
- *Draft Revised Wind Energy Development Guidelines*, (Department of Housing, Planning and Local Government, December 2019)
- *Guide to Visual Representation of Wind Farms* (Scottish Natural Heritage, 2017)
- Assessing the Cumulative Impact of Onshore Wind Energy Developments, (Scottish Natural Heritage, 2012).

Some of the key principles of the GLVIA are as follows:

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 Derrybrien development the impact would be the installation of the 70 no. turbines and associated infrastructure, the removal of trees/forest cover to facilitate this, and the peat slide that resulted from these actions. '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.

Assessment of Both 'Landscape' and 'Visual' Effects

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

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

Visual effects refer to the interrelationship between people and the landscape and refer to effects on views and visual amenity as experienced by people or groups of people. The GLVIA prescribes that visual effects 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. These are usually views which are accessible to the general public.

9.2.3.1 Methodology for Landscape Assessment

In Section 9.4 of this report the landscape effects of the Project are assessed. The nature and scale of changes to the landscape elements and characteristics are identified, and the consequential effect on landscape character and value are discussed. Trends of change in the landscape are taken into account. The assessment of significance of the effects takes account of the sensitivity of the landscape resource and the magnitude of change to the landscape which resulted from the Project.

Sensitivity of the Landscape Resource

The sensitivity of the landscape is a function of its land use, landscape patterns and scale, and the value placed on the landscape. The nature and scale of the development in question is also taken into account. For the purpose of assessment five categories are used to classify the landscape sensitivity of the receiving environment.

Table 9-1 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.

9.2.3.1.1 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 9-2 Categories of Landscape Change

Magnitude of Change	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.

9.2.3.1.2 Significance of Effects

In order to classify the significance of effects (landscape and visual – refer to 2.3 below), the predicted magnitude of change is measured against the sensitivity of the landscape/viewpoint, using the following guide. There are seven classifications of significance, namely: (1) imperceptible, (2) not significant, (3) slight, (4) moderate, (5) significant, (6) very significant, (7) profound. The Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports, (EPA, August 2017) is followed in respect of terminology relating to significance of effects.

Table 9-3 Guide to Classification of Significance of Landscape Effects

		Sensitivity of the Landscape 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*

The matrix above is used as a guide only and to illustrate the process of the assessment of landscape effects. As the GLVIA (2013) guidelines note, there is no standard approach to defining what constitutes a significant effect, and notes the relationship between the two axes, Sensitivity and Magnitude, is not linear, and the axes are likely to have different weightings. The assessor also uses professional judgement informed by their expertise, experience and common sense, to arrive at a classification of significance that is reasonable and justifiable.

Landscape effects are also classified as positive, 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 profoundly changed.

Methodology for Visual Assessment

In Section 9.4 of this report the visual effects of the wind farm are assessed. Visual assessment considers the changes to the composition of views, the character of the views, and the visual amenity experienced by visual receptors. 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 viewpoint sensitivity against the magnitude of change to the view resulting from the development.

Sensitivity of the Viewpoint/Visual Receptor

Viewpoint 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 sensitive to change include travellers on road, rail and other transport routes (unless on recognised scenic routes), 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).

For the purpose of assessment five categories are used to classify a viewpoint's sensitivity.

Table 9-4 Categories of Viewpoint Sensitivity

Sensitivity	Description
Very High	Iconic views - 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	Views that that are recognised in policy or otherwise designated as being of value, or views 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 are such that its capacity for accommodating compositional change in the form of development is low. The principle management objective for the view is its protection from change that reduces visual amenity.
Medium	Views that may not have features or characteristics that are of particular value but have no major detracting elements and which thus provide some visual amenity. These views may have capacity for appropriate change and the principle management objective is to facilitate change to the composition that does not detract from visual amenity or enhances it.
Low	Views that have no valued feature or characteristic, and where the composition and character are such that there is capacity for change. For such views the principle management objective is to facilitate change that does not detract from visual amenity, or enhances it.
Negligible	Views that have no valued feature or characteristic, or in which the composition may be unsightly (e.g. in derelict landscapes). For such views the principle management objective is to facilitate change that repairs, restores or enhances visual amenity.

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 9-5 Categories 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 significance of visual effects, the magnitude of change to the view is measured against the sensitivity of the viewpoint, using the guide in Section 9.2.2.3 above.

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 wind farm. One person might consider a wind turbine an elegant structure, appropriately located in a remote, windy upland. This person would be inclined to view the visual effect of the wind farm as positive. Another person might consider it an industrial intrusion in a landscape otherwise free of built elements and perceive its visual effects as negative.

For another perspective on the guidance in terms of the classification of effects, Sustainable Energy Ireland's (SEI's) *Attitudes Towards the Development of* Wind Farms in Ireland (2003) was reviewed. The report suggests that a simple classification of the visual effects of a wind farm as either positive, neutral or negative would inevitably be inaccurate or at least arguable. The most likely response to the visual effects of wind farms amongst visual receptors would be a range of all three

possibilities, the majority tending towards neutral, followed by positive and lastly negative. Significantly, the response of residents of the receiving environment with views of the development would tend to be more positive than non-resident visual receptors or residents with no view of the wind farm.

Several tools are used to assist the assessment of visual effects, including Zone of Theoretical Visibility (ZTV) maps, and Photomontages. These are described in Section 9.2.3.5.

Quality and Timescale of Effects

The predicted impacts are also classified as beneficial, neutral or adverse. As noted above, This is not an absolute exercise; in particular, visual receptors' attitudes to development, and thus their response to the impact of a development, will vary. However, the methodology applied is designed to provide robust justification for the conclusions drawn. These qualitative impacts/effects are defined as:

- Adverse – Scheme at variance with landform, scale, pattern. Would degrade, diminish or destroy the integrity of valued features, elements or their setting or cause the quality of the landscape(townscape)/view to be diminished;

- Neutral - Scheme complements the scale, landform and pattern of the landscape(townscape)/view and maintains landscape quality;

- Beneficial – improves landscape(townscape)/view quality and character, fits with the scale, landform and pattern and enables the restoration of valued characteristic features or repairs / removes damage caused by existing land uses.

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

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

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

9.2.3.2 Assessing Landscape and Effects in Remedial Environmental Impact Assessment Reports (rEIAR)

This chapter includes assessing the landscape and visual effects of:

- Impacts which have already occurred

- Impacts which are occurring
- Impacts which are likely to occur

Impacts/Effects which have already occurred

In order to assess the landscape and visual effects which have already occurred, using a baseline date of c. 1998, a number of sources of information were consulted to assist in building up a picture of the landscape change between 1998 and the present. As noted in Section 9.1.3, this presented some difficulties. While there is no photographic record available (apart from aerial imagery) for the baseline date, data sources consulted were as follows:

- CORINE land cover maps prior to construction (2000) and post construction 2006, 2012, and 2018
- Aerial imagery (map.geohive.ie) from both prior to construction (2000) and post construction (2005, and 2005-2012 and 2017)
- Bing and Google aerial images for 2020
- References to the baseline scenario from the planning documentation relating to the Derrybrien wind farm project including the Phase 1 EIS and Planner's Report, and Inspector's Report relating to the Phase 3 EIS.
- Galway County Development Plans 1997, 2003-2009, 2009-2015, 2015-2021
- Landscape and Landscape Character Assessment of County Galway, 2002

As noted below, the tools used to support the assessment had to be modified to reflect the retrospective aspect of the assessment.

9.2.3.3 Tools used to support the assessment

Several tools are used to assist in the Landscape and Visual Assessment. These include:

- ZTV Maps (Zone of Theoretical Visibility) Maps
- Visualisations (Photomontages)

ZTV Maps

ZTV Maps are produced to 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 usually represent a greater extent of visibility than in reality. This is particularly relevant in a landscape with considerable forestry planting.

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

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

It should be noted that the last point, while usually relevant to a proposed development, is not relevant as the existence of the Derrybrien Wind Farm Project means that actual visibility can be clarified on the ground.

ZTV maps are also 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 each turbine is potentially visible. However, as they do not take into account the presence of vegetation of structures in the landscape, and therefore areas showing theoretical visibility on the ZTV maps will not always have visibility in reality.

As the wind farm is already existing, the description of the actual visibility of the windfarm project, and the areas covered by the ZTV, are included in the baseline, in Section 9.3.2. The ZTV map, in this case, is helpful as it indicates areas where there is no theoretical visibility due to landform.

Visualisations

Visualisations, (in this case photomontages), are used as a tool to assist in the assessment of visual effects. Photomontages of 16 viewpoint locations have been included to assist in the assessment of visual effects. A photomontage of the Agannygal substation was not included, however this has been assessed. A photograph is included in Section 9.3.1. As noted in Section 9.1.3.3, it was not possible to get access to Thoor Ballylee to take a rooftop view, due to flooding.

To produce a photomontage, the proposed development is usually "placed" into the existing baseline 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. Wind farm developments may follow particular guidance on this, for example Scottish Natural Heritage (SNH) guidance.

While photomontages are extremely useful in giving an impression of a proposed development, 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

However, the fact that the Derrybrien Wind Farm is in existence means that the viewpoints can be visited, and the turbines seen in their setting in reality.

Existing/Baseline Description

In this case, the wind farm is already in place so there is no 'existing' or baseline' photograph of the landscape as it would have been, without the turbines.

Therefore the description of the 'existing view are descriptions of the landscape as it currently is seen, but without references to the turbines The description of the viewpoints does take into account that there may have been minor changes in the views- growth or removal of vegetation may have changed views, and buildings or structures may not have been present.

It should be noted that while there may have been minor changes, however the sensitivity of the viewer, and the change to the overall character of the view is what is considered relevant. Where possible, the descriptions in Section 9.4.1 identify any elements in the viewpoints which may have not been present circa1998. However it is not possible to accurately describe every element in each viewpoint as it was prior to development., and the assessment of effects focusses on the overall character of the view as it is likely to have been. Any assumptions are clearly stated in the descriptions.

A set of 16 no. photomontages were produced from carefully selected viewpoints, (including some of the viewpoints identified in the Phase 1 EIS), from various locations throughout the study area. These photomontages were produced by Innovision and are included in the Photomontage Booklet in Appendix 9-3. It should be noted that while a view from Thoor Ballylee (Yeats' Tower) was selected for inclusion, it was not possible to access this location to produce a photomontage, following flooding in Winter 2019/2020. A number of new viewpoints from the motorways were also included, which were not present in the pre-development baseline landscape circa 1998.

Magnitude of Change

This section describes the magnitude of change which has taken place as a result of the presence of the Derrybrien Wind Farm Project in the landscape- -e.g., the presence of the turbines and any other associated elements, into the view.

Description of Effects

The Significance of effect of the viewpoint is described. This description is based on the magnitude of change which has taken place, and the sensitivity of the receptor. This description also takes into account the 53.5 degree angle of view which would usually be prepared to represent a proposed development, but also on assessment of the turbines as they are visible at the viewpoints

For certain viewpoints (3,5,7,10,14) an additional view showing the proposed decommissioning scenario are included – showing the turbines removed - at an angle of view at 53.5 degrees.

It should be noted that while the baseline for assessment of effects which have occurred is circa 1998, several views (Viewpoint 1,16) from the M6 and M18 motorway are included to represent new views which were not there at the time of the wind farm construction and represent viewpoints that are available today.

Other developments

The Cumulative effects assessment includes the proposed Sonnagh Old Wind farm in the assessment as it was permitted in 2000 and constructed around the same time to the Derrybrien wind farm project. The full list of projects considered under cumulative effects is listed in Chapter 2 and further discussed in Section 9.5.

The photomontages are also used to assist in the assessment of cumulative effects.

9.3 Baseline Environment

It should be noted that the references to the character of the landscape prior to the construction of the Project (circa 1998) is based on sources mentioned in Section 9.2.3.4 above, but is not expected to form a complete representation of every aspect of the receiving environment at that time.

This section describes the character of the landscape, with references to the character of the landscape prior to the construction of all 70 turbines and associated works. This is based on site visits to the receiving environment, study of the CORINE maps from 2000-2012 and 2018 and aerial imagery from 2000 to the present and a review of the Phase 1 EIS.

This section also identifies the visual receptors and concludes with a summary of the landscape values of the area. This includes visual receptors relevant to the 1998 baseline, as well as some viewing locations which were not present at the time (locations along the M6 and 18 motorway).

9.3.1 Landscape Character and Visual Amenity

9.3.1.1 Geology and Topography

Derrybrien Wind Farm is located in the Slieve Aughty Mountains in south east Galway. While this is in southeast Galway, the western part of Co. Galway, to the west of the city and Lough Corrib, has some of the most complex geology in Ireland. This area is part of the Dalradian sequence that extends through Mayo, Donegal and across to western Scotland. In this area the igneous and metamorphic bedrock is dramatically folded and faulted and variations in resistance have further contributed to the complex upland topography of Connemara, which includes the Twelve Bens and Maumturk mountain ranges.

In contrast the eastern part of Co. Galway has a simple underlying geology. This area is mostly underlain by more recently deposited Carboniferous limestone, which erodes more evenly forming the typical lowland topography of the midlands. The only significant variation in this part of the county is the Slieve Aughty Mountains in the south east (extending into Co. Clare), where an inlier of Devonian sandstones and conglomerates projects through the limestone, forming an upland landscape.

As a result of the bedrock geology, the Slieve Aughty Mountains are lower and less dramatic in landform than the uplands of Connemara which are typified by the Twelve Bens. The highest peak in the Slieve Aughtys (in Co. Galway) is Cushlaundrumlahan at 365m, compared to the 729m of Benbaun in the Twelve Bens. The Slieve Aughty peaks are rounded and the slopes are shallow compared to the steep-sided and pointed profiles of the Connemara mountains. See Figure 9-2 *Topographical Map of Co. Galway.*

Figure 9.1 *Bedrock geology map of Co. Galway.*

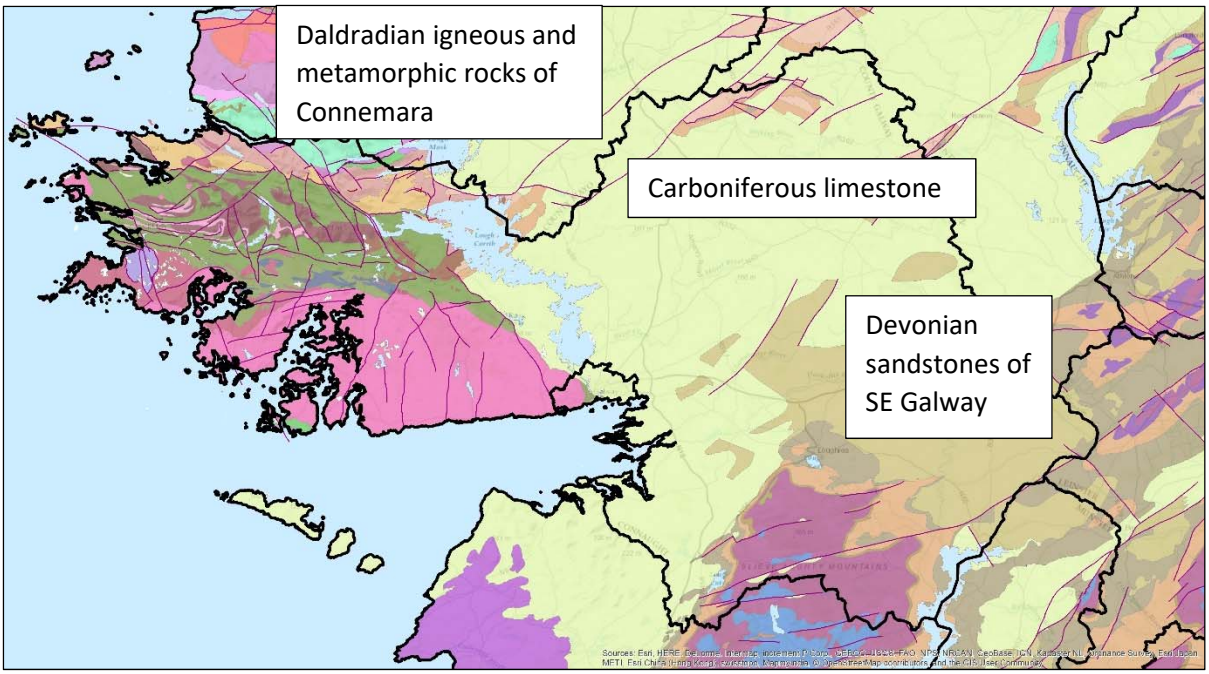
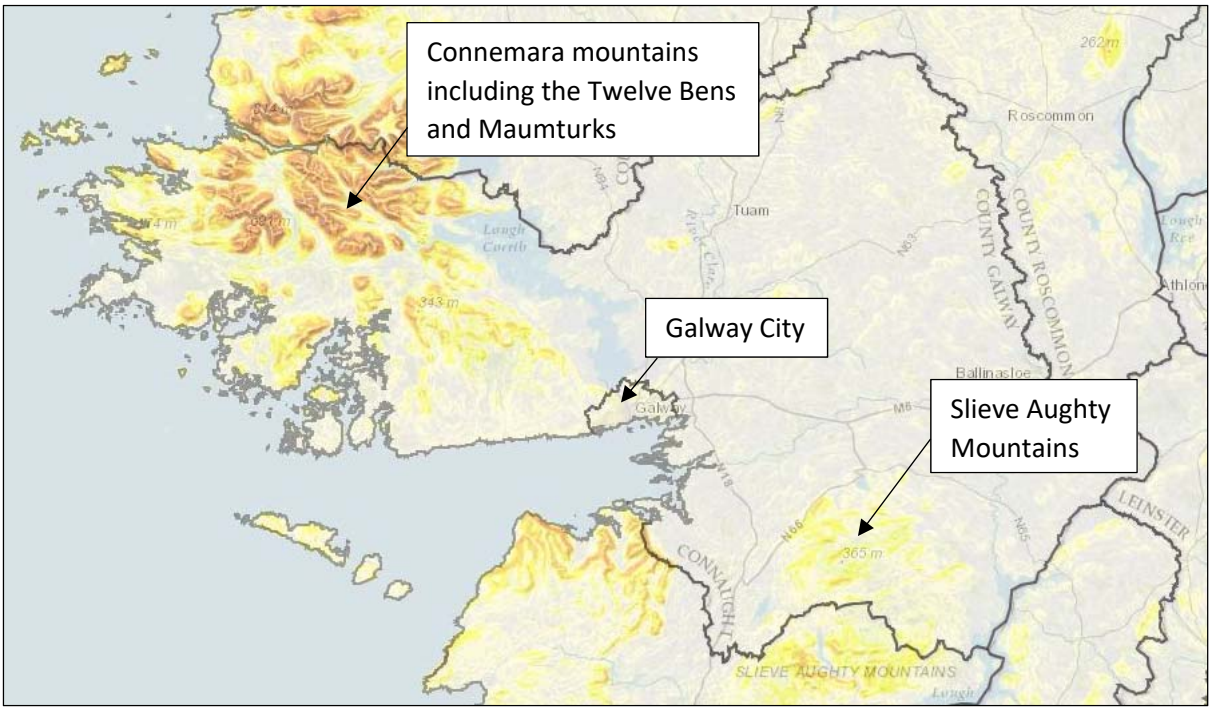


Figure 9.2 *Topographical map of Co. Galway.*



Derrybrien Wind Farm is in the northern part of the Slieve Aughty range east of the peak of Cushlaundrumlahan. This is a linear mountain, aligned approximately SW-NE, with a relatively flat, rounded top and gently sloping sides. It is a monolithic landform feature, with no outlying ridges or peaks. Due to its limited height and undramatic landform, as an upland feature it is unremarkable in appearance.

There is a similar but smaller landform lying parallel to the north, in the area of Sonnagh Old Wind Farm. It should be noted that the Sonnagh Old windfarm which is located upon this ridge, was not present in the landscape in 1998. To the south there is a broad, flat upland valley through which the Owendalllleegh and Bleach Rivers flow, and beyond that the Slieve Aughty range extends into Co. Clare. These features, the Sonnagh Old peak and the upland valley and peaks to the south further diminish the presence of Cushlaudrumlahan in the landscape as they buffer the mountain from the surrounding lowlands.

Plate 9-1 Viewed from the north the Slieve Aughty Mountains have a low, rounded profile

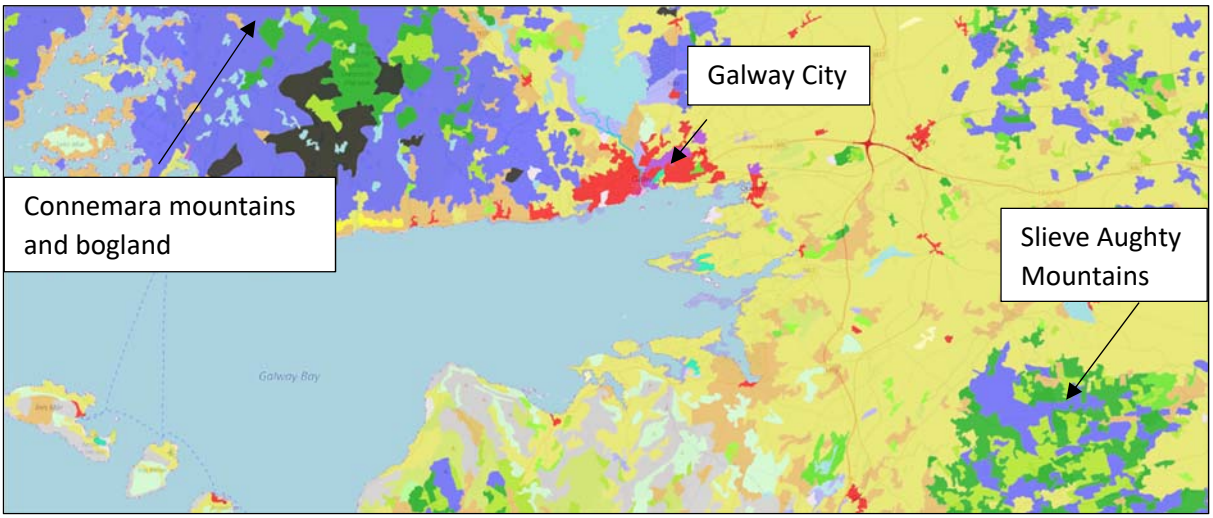
Plate 9-2 The view towards the Slieve Aughty Mountains from the west

Plate 9-3 A view towards Derrybrien from the south across the upland landscape

9.3.1.2 Land Use and Land Cover

The variations in geology and topography between the uplands of Co. Galway translate into variations in land use capability. The CORINE Land cover map (the most recent version is the 2018 update) below shows the major variations in land use across the county. See Figure 9-3 CORINE land cover maps of County Galway for 2000, 2006, 2012, and 2018. Purple shading indicates peat bog. Dark green indicates coniferous forest. Light green indicates transitional woodland scrub. Yellow indicates pasture land.

Figure 9.3 *CORINE land cover map of Co. Galway (EPA 2018). Purple shading indicates peat bog. Dark green indicates coniferous forest. Light green indicates transitional woodland scrub. Yellow indicates pasture land.*



The Connemara uplands have very limited potential for both agriculture and forestry; they are predominantly covered by peat bog. In contrast, the Slieve Aughty Mountains have one of the largest concentrations of coniferous forest in the country (ref. Atlas of the Irish Rural Landscape, p.125). The plantations are interspersed with areas of peat bog - indicating limited land use capability - but the relatively low elevation of the Slieve Aughty Mountains allows for forestry to be practiced and the landscape is productive. Visible signs of turf cutting contribute further to the impression of a 'working landscape', and this seems to have been the case c. 1998 as turf cutting is also referred to in the Phase 1 EIS. Turf cutting within and immediately adjacent to the site is evident today. On the site of the windfarm, turf cutting occupies an area of approximately 67ha on the east of the site, though only a small area of this may be visible from the public (Black) road.

The forest cover is one of the defining characteristics of the Derrybrien area and the Slieve Aughty Mountains generally. This was also the case c. 1998, as seen on aerial imagery and from the documents available describing the landscape at that time. At an elevation of approximately 100m above sea level around the flanks of the mountains, land use transitions from predominantly pastoral agriculture to predominantly forestry. In views towards the mountains the large, angular, dark coloured plantations are prominent, often blanketing the landscape and giving the horizon line a jagged profile (see Plates 4 and 5 below). In views from within the uplands the plantations often block lateral views from the roads, generating a high degree of visual enclosure.

The Planner's Report relating to the Phase 1 EIS refers to the extensive afforestation in the area. The practice of planting trees in large angular blocks which are interspersed with areas of bogland is evident today and was evident at that time.

Aerial photography from 2000 clearly shows areas of coniferous plantation, in geometric forms, and areas of bog on the site and immediate surrounds. Some of forestry would have been less mature than it is now. The site of the windfarm project on the 2000 aerial image was composed of open bog to the east of the site, dense coniferous plantation to the centre of the site and what appears to be immature plantations to the west of the site. The immediate surrounds of the site were covered by a mosaic of coniferous forestry and open bogland. The nearest areas of agricultural lands with small scale field patterns, appear to be to the south and south east near Derrybrien village.

A 60 metre high mast was present on the Derrybrien site, and the mast at Maghera is noted to the south of the site,

The undulating plains surrounding the Slieve Aughty Mountains c. 1998, like today, would have been largely covered by grassland. The fields which today are of various size and shapes are divided by a wide variety of boundary features including fences, stone walls, hedgerows, treelines and belts of deciduous woodland.

Plate 9-4 Extensive coniferous plantations in the Slieve Aughtys were a feature of the landscape prior to the wind farm project development

Plate 9-5 Extensive areas of forestry are interspersed with areas of peat bog and transitional woodland scrub, forming a typical marginal mountain mosaic landscape

Plate 9-6: Within the uplands the forest would have generated a high degree of visual enclosure as is evident today, though some felling and replanting would have occurred since 1998

The route of the overhead line which connects to the Agannygal substation, both of which are part of the project to be assessed, lies to the south of the wind farm. The land cover along the route of the overhead line is similar to that of the site, with a contrast between the mosaic of open bogland and large areas of coniferous plantation and this appears to have been the landcover prior to the construction of the wind farm as depicted in historical aerial images. Consequently, views vary

between a high degree of enclosure and open areas with views of the wider landscape.

This area is also sparsely settled, and would have been prior to the development of the Project. The location of the substation at Agannygal (seen in Plate 7 below) was previously a dense block of coniferous forestry with a large area of open bog or moorland to the east. While some felling of the forestry was carried out during construction of the substation, the land to the west remains open moorland, Additional felling of the forestry around the substation is evident from aerial imagery from 2017 and 2020.

Plate 9-7 Open bogland and coniferous forestry was present in the landscape around the Agannygal substation. Today the forestry is partly felled, increasing visibility.

9.3.2 Transport and Settlement Patterns – Visual Receptors

This section discusses visual receptors, with reference to the pre-development baseline scenario as well as comments on the actual visibility of the wind turbines and including references to the theoretical visibility as depicted on the ZTV map. However, the presence of the Derrybrien Wind Farm Project allows us to refer to the actual visibility of the wind farm.

At an elevation of approximately 100m above sea level around the flanks of the Slieve Aughty Mountains the landscape transitions from one dominated by pastoral agriculture, with a typical dispersed rural settlement pattern, to an upland landscape dominated by forestry and peatland. The upland above 100m is generally very sparsely populated, except for local pockets of agricultural land where there may be clusters of farmhouses, and this pattern seems to have changed little since c. 1998.

As the Derrybrien Wind Farm is located on the upper slopes of Cashlaundrumlahan at an elevation of around 300m and above, it is, and would have been, well removed from the settled agricultural landscape of the surrounding plains and is separated from areas of concentrated settlement and transport routes by a buffer of forest and peatland.

The Planner's report on the Phase 1 EIS notes that apart from Derrybrien village, the area was sparsely populated.

South of the Site – Derrybrien, the R353 and the Slieve Aughty Uplands

The nearest houses to the site are in the village of Derrybrien some 2km to the south. A derelict house is now visible to the southeast of the site (and is visible in Photomontage 10) and it appears that this was not occupied prior to construction of the wind farm.

Derrybrien is a low density, scattered linear settlement along the R353 on the lower slope of Cashlaundrumlahan, where there is a strip of marginal agricultural land on the south-facing slope. Due to the local topography (the convex slope above Derrybrien) the village falls outside of the Zone of Theoretical Visibility (ZTV) of the wind farm, i.e. the turbines are not visible from most of the houses, the former national school and the church that comprise Derrybrien. Aerial imagery shows a very minor increase in dwellings in the vicinity, with some buildings along the road to the west of the church that were not present in 1998. These would be outside the ZTV and so have no visibility of the turbines. This includes the nearest house to the windfarm, at a distance of just over 2km, at Derrylaur.

The nearest road to the south of the site is the R353. This is the east-west aligned regional road connecting Gort to Portumna across the Slieve Aughty Mountains and passing through Derrybrien. As it passes through the village the road is outside of the wind farm's ZTV.

Plate 9-8 Dense coniferous forestry along R353 west of Derrybrien

To the west of Derrybrien the R353 descends from the uplands to the plains following a winding path through a landscape with near blanket forest coverage as shown in Plate 8 above. The road is outside of the wind farm's ZTV for most of its length to the west of Derrybrien. However, travelling east towards Derrybrien, for a short stretch between Bunnaglass and Tooravoola, the wind farm can be glimpsed. It appears that the landcover in this area and views remain similar to the pre-development scenario, albeit the roadside trees would have been less mature.

To the east of Derrybrien the R353 follows a straight path across a part-forest, part-peatland covered upland plain. There are some open views to the open bogland and coniferous plantations to the south and some areas enclosed by forestry.

Plate 9-9 The R353 east of Derrybrien

The Flaggy Bridge lies on the R353 just east of the junction with the Black Road. Peat and debris from the peat slide would have been temporarily visible from here, but no trace of the slide is now evident. The present view is shown in Plate 9-10 below:

Plate 9-10 Flaggy Bridge on the R353 east of Derrybrien

Further east, the road then descends towards Ballynakill and the junction of the R353 with the R351.

Ballynakill is situated at lower elevation and is therefore mostly outside of the wind farm's ZTV. To the west of Ballynakill travelling towards Derrybrien along the R353 the wind farm is occasionally visible through gaps in roadside vegetation. There are some open views in the vicinity of what is locally known as Wasteland cross, to the east of the site. There do not appear to have been large scale changes to landcover in this area since c. 1998, which appears on the aerial images from 2000 as a mixture of forestry blocks and open bogland areas. The presence of forestry between the road and the wind farm indicates the likelihood that these views could change over the forestry cycle (felling and replanting). Some roadside vegetation today provides partial screening to some of the turbines. Photomontage 11 shows the view from this vicinity where there are views to the wind farm but partly screened by roadside vegetation.

Beyond Derrybrien and the R353 the sparsely settled forest and peatland covered Slieve Aughty upland landscape extends for some distance south, into Co. Clare. A local road traverses this landscape (a broad upland plain), aligned roughly NE-SW, connecting the R353 to Lough Graney which lies 11km to the south west of the site. Along its route this local road passes through the townlands of Cloghvoley, Derreenamucka and Slievanore. There are a small number of houses dispersed along this road, variously surrounded by conifer plantations and peat bog. The landcover remains similar, with the plantations relatively mature in comparison to the pre-development baseline date , where they appear from the aerial images to be recently planted. Views towards the wind farm site may have been more open than they are today. One new residence near the junction with the R353 was observed. Views of the wind farm are afforded from the road and some of the houses where forestry does not screen views.

The Agannygal substation is visible across an area of bog, from a short section of the local road, in the townland of Loughatorick North as shown below in Plate 9-11. Views from the south are also available. Overall, the views of the substation are localised.

Plate 9-11 Agannygal substation (visible from the local road to the west) is located in an area which was forested

The substation is set within an area of bogland interspersed with coniferous forestry landcover. Today, an area of peatland is located to the west of the substation, while the forestry in the immediate vicinity of the substation has been partly felled since 1998, on inspection of the 2017 GeoHive aerial view, and 2020 Google maps aerial view. The substation is likely to have been more screened from view before the felling took place.

The Moneypoint-Woodford 400kV line traverses this road, which would have been visible prior to the development of the windfarm project, while the Ennis – Shannonbridge overhead line traverses the road further south, near the Bleach River Today, the 110kV overhead line connecting the Derrybrien wind farm with the Agannygal substation also traverses this landscape. The large scale forestry and 400Kv overhead line would have created a somewhat industrial character to parts of this landscape prior to the introduction of the Derrybrien-Agannygal overhead line.

Further south, the East Clare Way follows the local roads encircling Lough Graney. The wind farm is visible from the most elevated sections of the waymarked way.

East of the Site – The Black Road, Ballynakill, the R351, Portumna, the N65 and Lough Derg

The nearest public road to the wind farm site is known locally as 'the Black Road'. This is a single lane, relatively remote local road aligned roughly north-south, crossing the ridge of Cashlaundrumlahan and connecting Derrybrien and the R353 to Loughrea to the north. The Black Road passes some 1km to the east of the wind farm. (It was partially blocked during the peat slide in 2003.)

Plate 9-12 View from Black Road towards the turbines and location of the peat slide

There are no occupied houses along the Black Road in the vicinity of the wind farm, and this was the case prior to the existence of the Project. Today, the nearest house along this road is an isolated farmhouse near the junction with another local road in the townland of Coppanagh some 2.2 km to the north east of the nearest turbine. The dwelling faces southeast and glimpses of blade tips are available from the road just south of the dwelling. This is a quiet local road, with potentially open views from the higher ground, an area of open moorland which appears relatively unchanged, and the lower ground, to the east of the wind turbines dominated by forestry, based on review of aerial imagery.

Plate 9-13 Enclosure by forestry along Black Road

Plate 9-14 Open bogland along Black Road

Comparison of the aerial images shows some felling and replanting has occurred, particularly east of the Black Road, and plantations which were young prior to the wind farm construction have matured.

To the east of the Black Road the largely unpopulated forest and peatland covered upland landscape extends for some 5km, down the slope of the mountains towards the village of Ballynakill and nearby Curra West on the R351. The loose cluster of houses comprising Ballynakill is largely outside of the wind farm's ZTV. Views of the wind farm from the R351 are similarly blocked by the intervening topography except for a short stretch of the road in the area of Curra West.

To the east of the R351 an undulating agricultural landscape extends to the shore of Lough Derg, 18km to the east of the site. Portumna is the nearest large town east of the site. It is some 23km distant on the northern shore of Lough Derg. Due to landcover there are no views of the wind farm from Portumna, but from the far side of Lough Derg in Co. Tipperary (e.g. Terryglass) the wind farm is visible in the distance.

The N65 National Road follows an arcing route north west from Portumna to Loughrea. It traverses an undulating rural landscape and passes through the village of Killimor.

North of the Site – Sonnagh Old, Loughrea and Environs,

To the north of the site the forest and peat covered upland landscape extends for several kilometres, with a local road (over 'Francis Gap') and forest tracks providing access. However, there are no houses in this area. A linear mountain, smaller but similar in shape to Cashlaundrumlahan lies parallel to the north. Today, the Sonnagh Old wind farm is located on this ridge however c. 1998 the Sonnagh Old turbines would not have been present.

Beyond Sonnagh Old, on the outer northern slopes of the Slieve Aughtys the topography breaks up into a complex hilly landscape where coniferous forestry has largely replaced the marginal grassland. The village of Killeenadeema is at the centre of this landscape, between the mountains and Lough Rea. The area is accessed by a complex pattern of local roads. There is a relatively dense distribution of houses - including urban-generated housing - along the roads, particularly towards the north around Lough Rea.

The town of Loughrea is located to the north of the lake. The urban area spreads around the northern shoreline behind a corridor of open space which includes parkland with footpaths, a playground, a shoreline parking area and viewpoint. In views across the lake from the houses and open space around the shoreline the Slieve Aughtys form the horizon with the Derrybrien and Sonnagh Old wind farms visible, but as noted neither wind farm was present in the 1998 baseline scenario.

The town of Loughrea has expanded to the north, and the bypass road constructed since the pre- development baseline.

An undulating agricultural landscape extends to the west, north and east of Loughrea. Several national and regional roads follow radial routes from the town through this landscape. There is widespread dispersed rural housing along the road network which is also evident on the aerial photos from 2000. The undulating topography and mature hedgerows, tree lines and patches of forest generate a high degree of visual enclosure in this area.

In the present, from elevated locations where there is no foreground vegetation, views of the distant mountains and the wind farms (Derrybrien and Sonnagh Old) are afforded. However, these views prior to the windfarm construction would have been views to the distant uplands without any turbines.

Today, the M6 motorway passes on an east-west alignment some 7km to the north of Loughrea, and 18km north of the site. This is the main transport route from Galway City, carrying a large volume of traffic through the wind farm's ZTV. However this road was not constructed in 1998 (the pre-development baseline date) , and therefore this would not have formed a visual receptor at the time.

West of the Site – Gort, the R380 (and M18)

The forested upland landscape extends for several kilometres to the west of the site before falling away towards a wet lowland landscape characterised by drumlins and marginal grassland. The R380 passes at the foot of the western slopes of the Slieve Aughty Mountains, linking Loughrea to Gort which lies some 12km to the west of the site. Much of the landscape east of the R380 is outside of the wind farm's ZTV the western convex slopes of the mountains hiding the turbines from view.

Today, much of the section of road from Gort to just south of Peterswell has visibility of the turbines. Also at present, the M18 also passes through Gort linking Galway City and Ennis to the south in Co. Clare. The M18 between Limerick and Gort opened in 2010, while the M18 from Gort to Tuam was constructed between 2015 and 2018 and thus would not have been part of the pre-development baseline 1998.

To the northwest of Gort lies Coole Park, which is a well-known Nature Reserve and the former home of Lady Gregory which is currently managed by the NPWS and is a visitor attraction. Visibility of the Derrybrien turbines is not possible, and would not have been considered likely prior to the development, due to the heavily wooded nature of the site. (They are, however, visible from the M18 motorway overpass on the access road into Coole Park). Northeast of Gort, approximately 10 kilometres west of the Derrybrien turbines, lies Thoor Ballylee, known for its connection with WB Yeats, which is just within the ZTV. The Derrybrien turbines are not visible from the base of the tower due to screening, but views are available from the rooftop battlements.. Lough Cutra lies approximately 13.7 km to the southwest and lies within the Zone of Theoretical Visibility. Lough Cutra Demesne (a private castle and estate) lies to the west of the lake. While visibility from the public road adjacent to the demesne is blocked by heavy screening, there may be some visibility of the distant

turbines from open areas within the demesne. The mature nature of the screening indicates that this was the case before construction of the development.

The lowland rural landscape west of the Slieve Aughtys is relatively sparsely populated compared to the plains to the north and east, except along the main road corridors and in Gort. This would have been similar in the pre-development baseline environment.

Further west, the ZTV shows visibility in the Burren Lowlands, west of Gort, however the turbines are at some distance from the viewers in this area and are not prominent.

In summary, he R353 passes through Derrybrien 2km to the south of the site but due to the local topography, and vegetation cover, the wind farm cannot be seen from most of the village and the road. The site is surrounded on all sides by a belt of almost completely un-populated upland forest and peatland landscape several kilometres in breadth, forming a buffer between the wind farm and the agricultural landscape on the surrounding plains. These plains form part of the midlands basin and extend for tens of kilometres to the east and north, as well as to the coast of Galway to the west. There are numerous visual receptors in this vast area, but the Slieve Aughtys (and the wind farm) are not a prominent feature in any views except from close up. There are several towns in these plains, notably Loughrea, Gort and Portumna, where there are concentrations of visual receptors, but no major urban areas.

Summary of Changes in the baseline environment 1998-2020

In summary, today, due to the upland location of the wind farm there are few houses and roads in its immediate vicinity. This is likely to have been the case in 1998.

From the review of aerial imagery, Development Plans and Planners' reports associated with the Derrybrien Wind Farm project applications, the area in the vicinity of the site appears to have undergone little change. The cyclical nature of forestry and small scale turbary activities are likely to have been ongoing in the vicinity of the site. Following the peat slide, a number of measures were undertaken, but these are assessed in Section 9.4 and not part of the baseline.

Landscapes are constantly changing, and there have been some changes in the receiving environment. Much of the land on the site and in the immediate vicinity is covered in coniferous forestry, and this results in changes over time as there is a continuing cycle of felling and re-planting.

Aerial imagery shows that between 2000 (prior to construction) and 2005, felling occurred outside the site boundary to the west of the site, and some smaller areas to the southeast of the site. Between 2005 and the more recent aerial images, felling is indicated in several areas between the turbines and the Black Road to the east. Felling directly to the west of the site was carried out between 2016 and 2018.

Thus, views can change, in some cases relatively dramatically, when trees are felled, and as forestry grows up, other views may be obscured. This forestry cycle is likely to continue.

Other changes in the wider landscape include the construction of the M6 motorway between Ballinasloe and Oranmore (opened in 2017) and the M18 motorway (constructed between 2015-2017). These motorways and some associated access roads have also opened up new viewing opportunities not available in 1998 (views from both the M6 and M18 are represented in the set of photomontages). It should however be noted that visual receptors on motorways, travelling at high speeds, are not usually regarded as highly sensitive, as they do not tend to be focussed on their surrounds.

There was an increase in dwellings in the wider landscape, but very few in the immediate vicinity of the site – one dwelling noticed in the Derrybrien vicinity which is outside the ZTV. Settlements including Gort, and Loughrea showed an increase in dwellings since 1998 as noted above.

Several other projects were carried out in the wider landscape, as noted in Chapter 2 and in Section 9.5 of this chapter.

9.3.3 Landscape, Visual Amenity and Wind Energy Policy

This section includes relevant policies, ranging from policy which was in place prior to the construction of the wind farm, (prior to 2006) to current policies. Sections 9.3.3.1 refers to policy prior to the wind farm construction, while Section 9.3.3.2 and subsequent sections refer to policy development and present day policies. This provides a historic context for the precedent whereby wind farm developments in this location have been deemed acceptable. This section also details the evolving wind energy policy on the site.

The statutory plan for the area is the Galway County Development Plan (GCDP), which is reviewed and updated on a six yearly cycle.

9.3.3.1 Galway County Development Plan 1997-2003

The plan in place at the time of the original planning assessments was the GCDP 1997-2003. Applications to extend the duration of the original permissions were made in September 2003, following the adoption of the GCDP 2003-2009.

Wind Energy Policy

The GCDP 1997 contained no statement of policy on renewables or wind energy development other than Objective no 13 in Chapter 7, Rural Areas. Objective no 13 stated:

> *"The Planning Authority will require that windfarm development comply with the Department of Environment Guidelines, particularly the policy statement at **Subsection 3.2** (Page 5) and also the main considerations set out in Section 4 e.g. Visual Amenity, Noise, Electromagnetic Interference and other environmental factors."*
>
> p. 60, GCDP 1997-2003 (**own emphasis**).

Wind Farm Development Guidelines for Planning Authorities, 1996

The Guidelines referred to in Objective 13 were the *Wind Farm Development Guidelines for Planning Authorities, 1996* (hereafter referred to as the Guidelines), which were in force at the time. This is a ten-page document prepared in anticipation of an increase in planning applications for wind farm projects which was expected to result from various national policy documents encouraging development of alternative energy sources.

Wind Farm Development Guidelines for Planning Authorities, 1996 - Section 4

The GCDP 1997 also refers specifically to Section 4 of the Guidelines. Subsection 4.8 discusses visual impact, noting that it is 'among the more important considerations to be taken into account in arriving at a decision on a particular application':

> *"Wind turbines are tall and their prominence is emphasised by the movement of the rotors. Visual impact must be assessed with their particular and unusual characteristics in mind. Visual impact is influenced by:*
>
> - *form and characteristics of the landscape;*
> - *Design and colour;*
> - *The existing skyline;*
> - *Layout of the turbines;*
> - *Number and size of turbines."*
>
> Section 4.8, p. 7, *Wind Farm Development Guidelines for Planning Authorities*, 1996.

Subsection 4.9 of the Guidelines sets out further considerations regarding visual impact:

> *"Assessment of visual impact should have regard to both immediate visual impact and views from a distance (especially from any adjacent areas of high landscape quality). Turbines should not dominate landscape features, especially views designated in the Development Plan as views of special amenity or interest which it is necessary to preserve and views from adjacent areas subject to national or international designation or designated in the Development Plan as being of high landscape quality. Turbines should not be prominent when seen against an elevated skyline background from public roads, towns or village centres."*

The GCDP 1997's reference to the Guidelines indicates that the County Council accepted the necessity of wind energy development in principle, and the need to facilitate wind farm development where the resource existed, and significant constraints/sensitivities were not a factor. In subsections 2.3-2.4 the Guidelines state:

> *"The use of wind for power generation requires that turbines be located in areas with significant wind energy resource. Areas of high wind energy tend to be upland and/or coastal…*
>
> *"The western and north-western parts of the country have the greatest wind resource, in terms of average speeds. However there may be constraints on development in these areas such as inaccessibility, lack of energy infrastructure, excessive winds, and extensive areas of high visual amenity."*
>
> Sections 2.3-2.4, p. 4, *Wind Farm Development Guidelines for Planning Authorities*, 1996.

By its reference to the Guidelines the GCDP 1997 accepted that wind farms would be located in upland areas in the county. It also recognised that the particular

characteristics of wind turbines – their dimensions and the movement of the rotors – inevitably result in landscape and visual impacts where they are installed.

The GCDP required that site selection, and the consideration of impacts, take account of the strength of the wind resource and availability of grid access, compatibility with other land uses including housing and recreation, landscape character, the impact on landscapes and views designated for protection, and other natural and cultural designations.

Galway County Development Plan 1997 - Scenic Amenity Areas

The GCDP 1997 defined Scenic Amenity Areas (SAA) as follows:

> *"landscapes, which contain natural features such as mountains, hills, moorlands, woodlands, vegetation and areas of water, including coastlines, and which exhibit a significant degree of visual and aesthetic interest."*

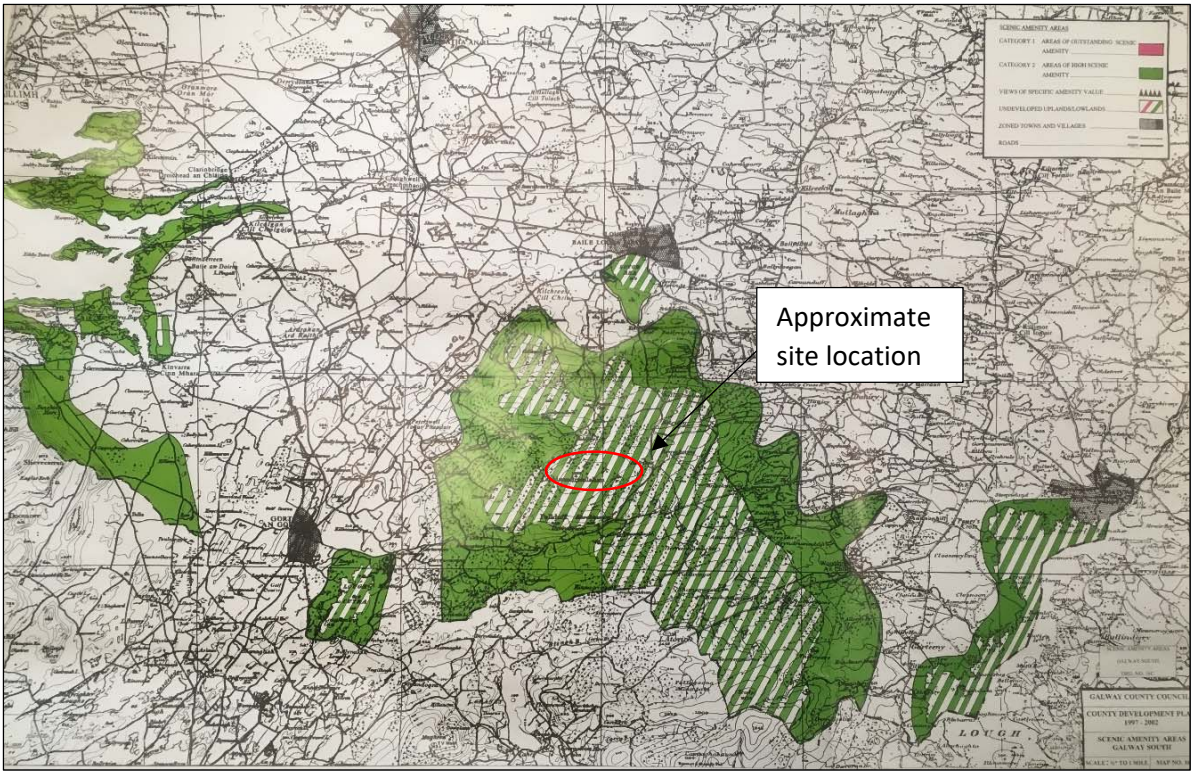
All of the upland landscapes, coastal areas and lakes of significant scale in the county were designated as SAAs. Two categories of SAA were identified, for the purpose of policy implementation, as follows:

- **Category 1: Outstanding Scenic Amenity Area (OSAA)**. These areas contained dramatic landscape features of the highest scenic quality and visual interest. Many of these areas were of an 'unspoilt' character. The Connemara mountains and coastline were designated OSAA. No areas in the eastern part of the county (east of Galway City) were designated OSAA.

- **Category 2: High Scenic Amenity Area (HSAA)**. These areas were defined as areas of lesser scenic quality than Category 1 areas. These areas included parts of the Lough Derg shoreline, South Connemara, and the Slieve Aughty Mountains.

The site fell into a Category 2 High Scenic Amenity Area (HSAA) as shown in Figure 9-4 Scenic Amenity Areas

Figure 9.4 GCDP 1997 Scenic Amenity Areas



The Development Control Objectives within these areas (both OSAA and HSAA) were:

> *"To restrict development which would detract from the amenity value of the zoned areas in the relevant maps, where such development would be visually inappropriate and out of character, or could not be satisfactorily blended into its surroundings."*

Both categories of SAA were subdivided into four subcategories. The Derrybrien wind farm project site would appear to have fallen within the subcategory 2B, Undeveloped Mountain Areas (Blanket Bog), for which 'Permissible Development' was identified as 'None other than essential or directly related to current use'. Category 2B is the most relevant, and this is deduced as the site is a mixture of forest and bogland but this is, and was at the time, underlain by blanket bog and is not a lowland area or Karst area, an undeveloped bog road or undeveloped limestone karst as in categories 2C, 2E and 2F. The Planner's report for the Phase 1 EIS refers to the location of the area in an 'undeveloped upland region'.

This table is reproduced below (see Table 9.6).

Table 9-6 Galway County Development Plan 1997: Policies on Development in Scenic Amenity Areas

Category	Sub-Category	General Description	Permissible Development
1.OSAA	1A	Developed Areas	Residential Development
	1B	Undeveloped Mountain Areas (Blanket Bog)	None other than essential or directly related to current use
	1C	Undeveloped Lowland Areas (Blanket Bog)	None other than essential or directly related to current use
	1D	Undeveloped Bog Roads	None other than essential or directly related to current use
2. HSAA	2A	Developed Areas	(i) Residential Development
	2B	Undeveloped Mountain Areas (Blanket Bog)	None other than essential or directly related to current use
	2C	Undeveloped Lowland Areas (Blanket Bog OR Karst Limestone)	None other than essential or directly related to current use
	2E	Undeveloped Bog Roads	None other than essential or directly related to current use
	2F	Undeveloped Limestone Karst	None other than essential or directly related to current use

It should be noted that Commercial, Industrial and Community facilities development was permitted in all subcategories – including the site area's HSAA 2b subcategory - only if it was essential, and had no acceptable alternative location.

> *"The Planning Authority will permit Commercial, Industrial and Community Facilities development which would not be out of character with, and which can be satisfactorily assimilated into the landscape. Such development shall include only development which is essential to the overall socio-economic development of the area, and which has no alternative location which would be acceptable to the Planning Authority."*

Galway County Development Plan 1997 - Views and Prospects of Specific Amenity Value

The GCDP 1997 included a policy on views and prospects of special/specific amenity value. (See Figure 9-4 – GCDP 1997 Scenic Amenity Areas - at the end of this chapter) The Development Control Objective for this designation was:

> *"To restrict development which would impair Views and Prospects of Special Amenity Value or Special Interest which are considered necessary to be preserved and particularly those indicated on the zoning maps."*

These views were designated in urban areas only. There were no 'Views of Specific Amenity Value' (as defined identified on the map legends) on the Scenic Amenity Areas Maps anywhere in south or east Galway. This policy was thus not relevant to the site.

Galway County Development Plan 1997 - Areas of Recreational Amenity

The GCDP 1997 identified Areas of Recreation amenity as National and public parks, walking routes, pony trekking routes, golf courses, fishing areas, beaches and inland areas for swimming, and sites for water sports.

Lough Rea, 10km to the north of the site and Lough Cutra 12km to the south west were the closest designated Areas of Recreational Amenity to the site. The Slieve Aughty Mountains were not so designated.

Galway County Development Plan 1997: Natural Heritage Areas (NHAs) and Candidate Special Areas of Conservation (cSAC)

In 1997 there were a number of proposed Natural Heritage Areas and candidate Special Areas of Conservation. There was some overlap between the two designations. Sonnagh Bog, some 2km to the north was designated as both a pNHA and cSAC, as were the Peterswell Turlough, 8km north-west, Slieve Aughty Bog, some 6km to the south-east, and the Loughatorick South Bog, due south of that, 13 km from the site.

Other cSACs were Lough Coy, 9km to the west; and Pollagoona Bog over the Clare border at a distance of approximately 7km to the south. Both Lough Rea (8km north) and Lough Cutra (9km south-west) were pNHAs.

9.3.3.2 Galway County Development Plan 2003-2009 – Wind Energy Development and Landscape Policy

The site was no longer designated as a High Scenic Amenity Area (HSAA) from 2003 onwards.

The GCDP was revised in 2003 and it incorporated a statement of wind energy development policy), informed by Landscape Character Assessment of County Galway carried out in 2001-2002 (hereafter referred to as the Assessment.) This would have represented the landscape baseline prior to the construction of the project and is an important source of information.

The Assessment comprised desktop studies, backed up by fieldwork and GIS mapping. The assessment includes mapping of the County's Landscape Value, Sensitivity, Focal Points and Views, and Wind Farm Potential.

The Assessment identified 25 character areas within the County. The location of the Derrybrien Wind Farm project is located within LCA 6 Slieve Aughty Mountains. This was described as follows:

The landscape is mountainous with areas of both coniferous and deciduous woodland. The landscape is wild, natural and scenic. Long distinct (sic) glimpse views are available through the trees towards the lower ground in the surrounding areas.

Landscape Value, Sensitivity and Focal Points/Views were also mapped. Refer to Figures 9-5, 9-6, 9-7, 9-8, 9-9, 9-10 which are maps contained in the Landscape Character Assessment.

The vicinity of the project was indicated as of 2 Medium Landscape Value out of a possible 4 categories, from Class 1 Low to Class 4 Outstanding. Landscape Sensitivity in the vicinity of the project was indicated as Class 2 Moderate (out of a possible 5 categories from Class 1 Low to Class 5 Unique.)

The Assessment also mapped the Enclosure by Forestry (see Figure 9-11) of the County, and this shows extensive areas of enclosure in the vicinity of the project.

The Assessment goes on to state the following in relation to the Slieve Aughty Mountains LCA in relation to the landscape and wind farm potential:

The Slieve Aughty Mountains area potentially has adequate wind resource for wind farm development and has an acceptable landscape sensitivity class i.e. class 3 high. Views within this area are generally restricted by existing woodland, which would also restrict visibility towards the proposed turbines thus reducing the size of the zone of visual influence. There are no areas of unique sensitivity in the surrounding landscape with high scenic quality therefore visual intrusion of scenic views is unlikely as a result of wind farm development. However mitigation of visual impacts is required to minimise any long distance views.

(It should be noted that the text and maps of the Assessment regarding Landscape Sensitivity do not always correspond.)

A protected view was identified in the direction of Derrybrien Wind Farm from the lakeshore at Lough Rea, approximately 10 kilometres distant.

It was the stated policy of Galway County Council to facilitate wind energy development, in the Slieve Aughty Mountains (identified as a Strategic Area in the Landscape Character Assessment), mindful of the associated landscape and visual effects. The other Strategic Area was located northwest of Galway City with some smaller areas designated in parts of Connemara.

The following policies in relation to landscape are of relevance.

Policy 105 "*Include landscape Sensitivity Ratings as an important factor in determining development uses in areas of the county."*

Policy 106 "*Afford protection to views of amenity value."*

Policy 107 "*Protect designated areas as both environmental resources and economic assets."*

Policy 108 "*Preserve the character of the landscape where, and to the extent that, in the opinion of the Planning Authority, the proper planning and sustainable development of the area requires it, including the preservation of views and prospects and the amenities of places and features of natural beauty or interest."*

Figure 9.5:Landscape Character Assessment of County Galway County 2003: Landscape Value Rating

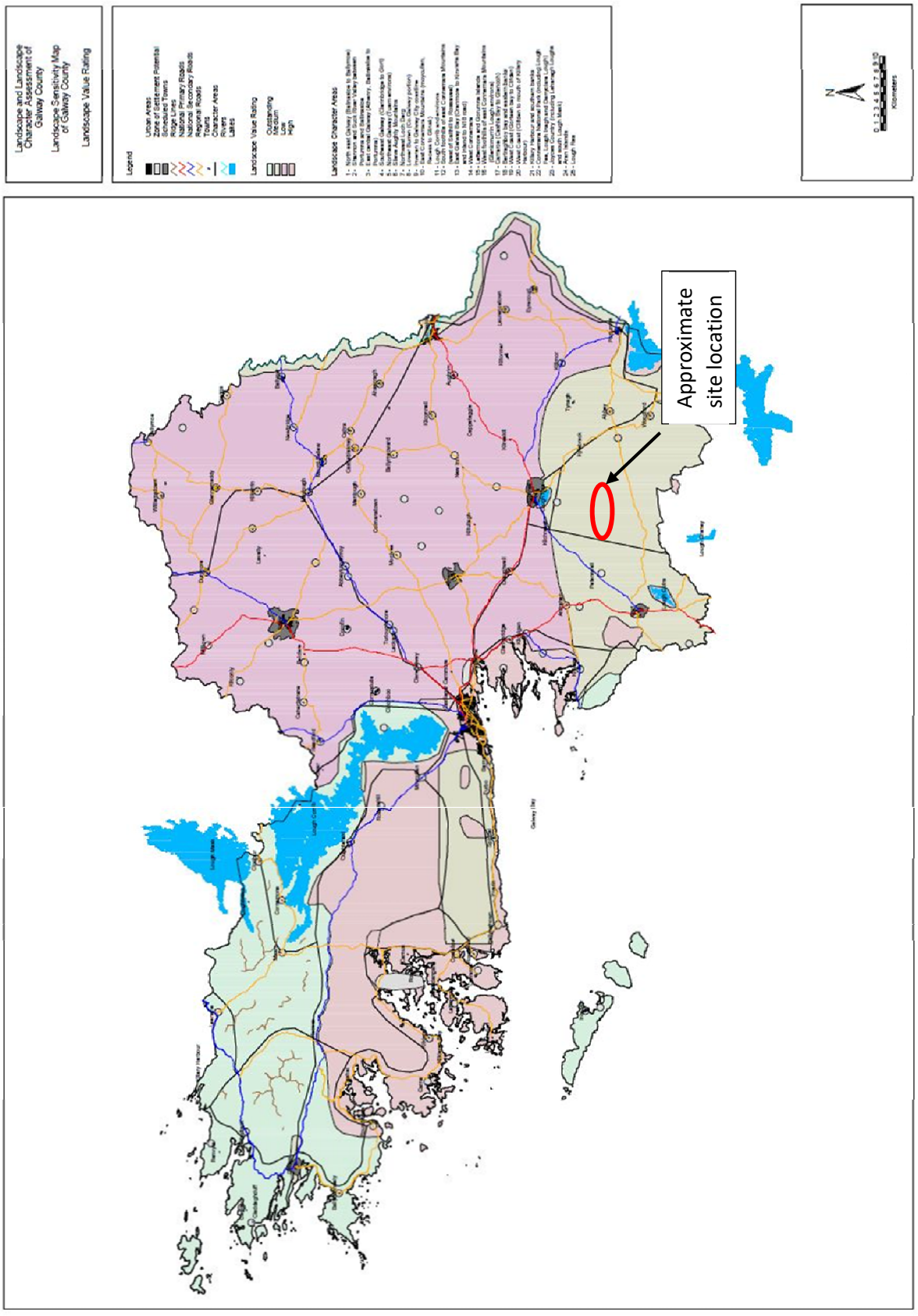


Figure 9.6 *Landscape Character Assessment of County Galway County 2003: Landscape Sensitivity Rating*

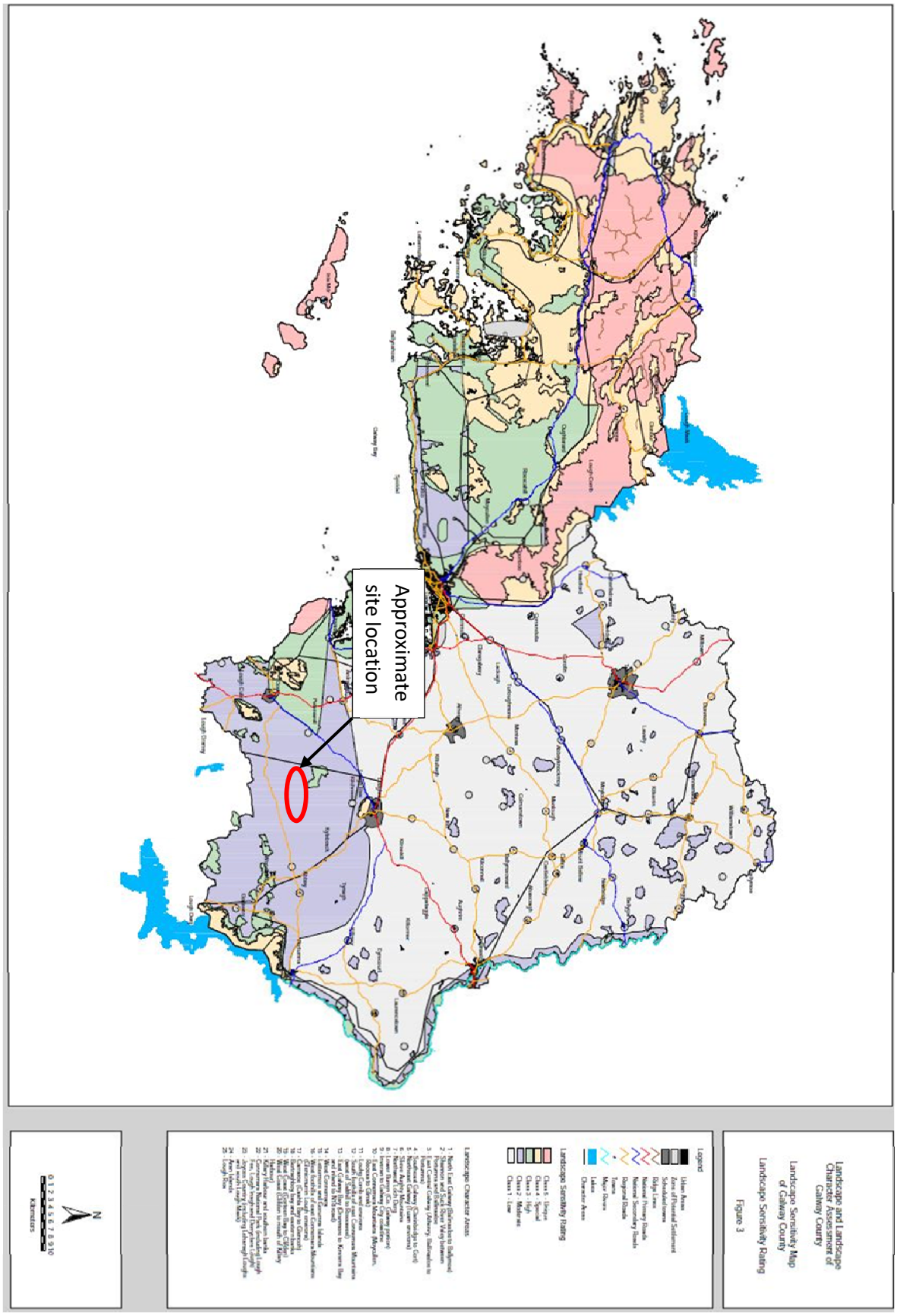


Figure 9.7: *Landscape Character Assessment of County Galway County 2003: Enclosure by Forestry*

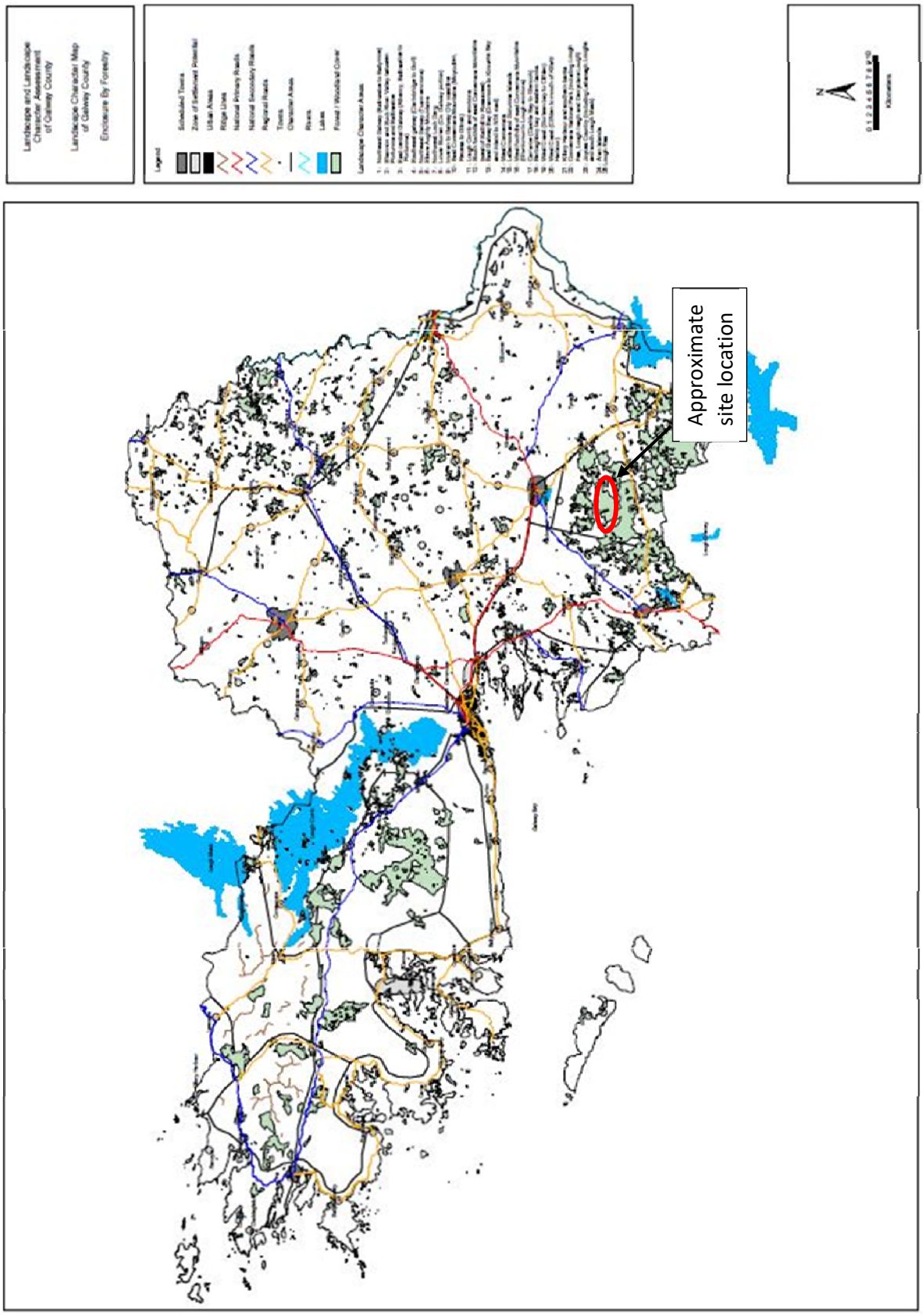


Figure 9.8: *Landscape Character Assessment of County Galway County 2003: Enclosure by Landform*

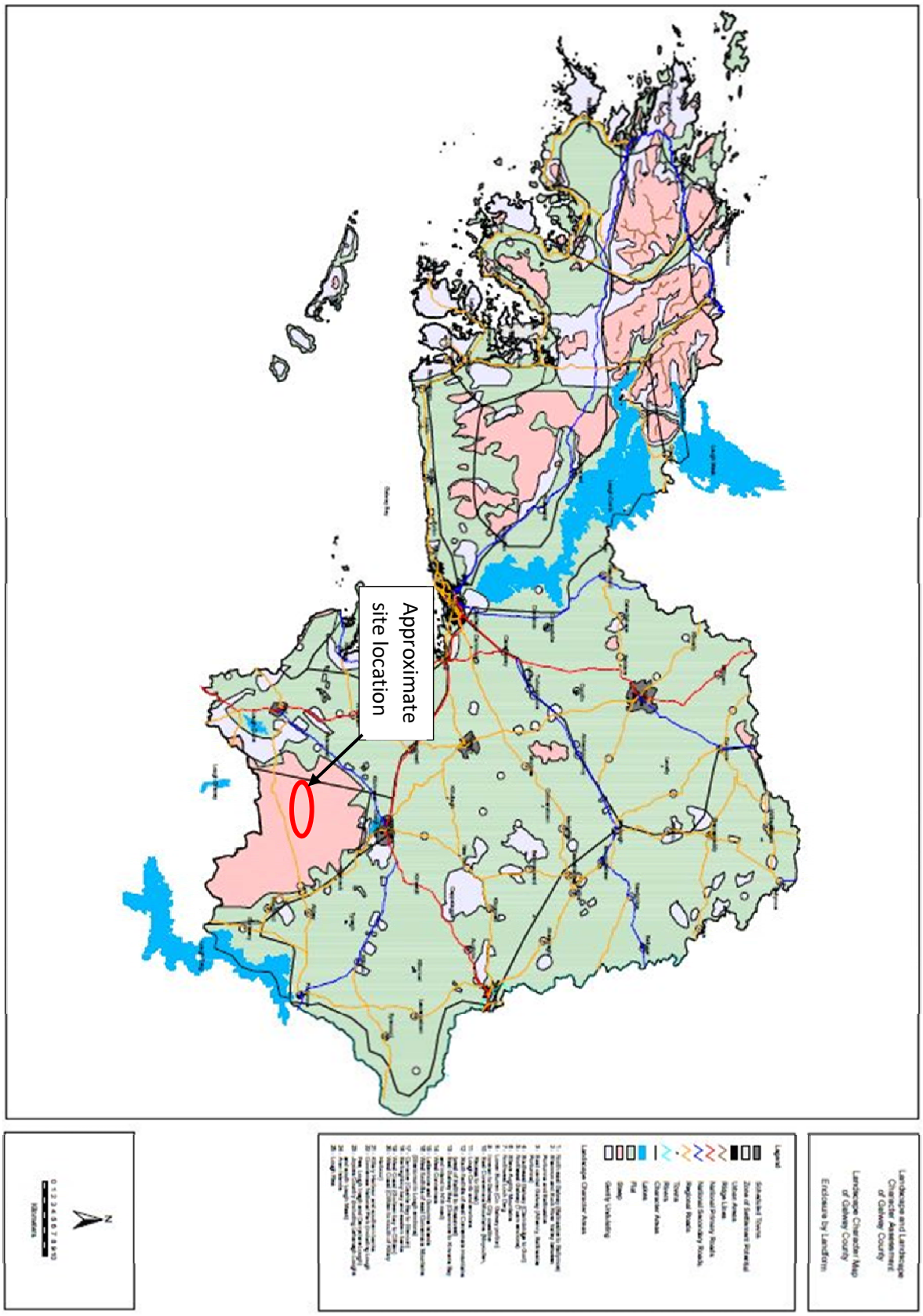


Figure 9.9: *Landscape Character Assessment of County Galway County 2003: Focal Points/Views*

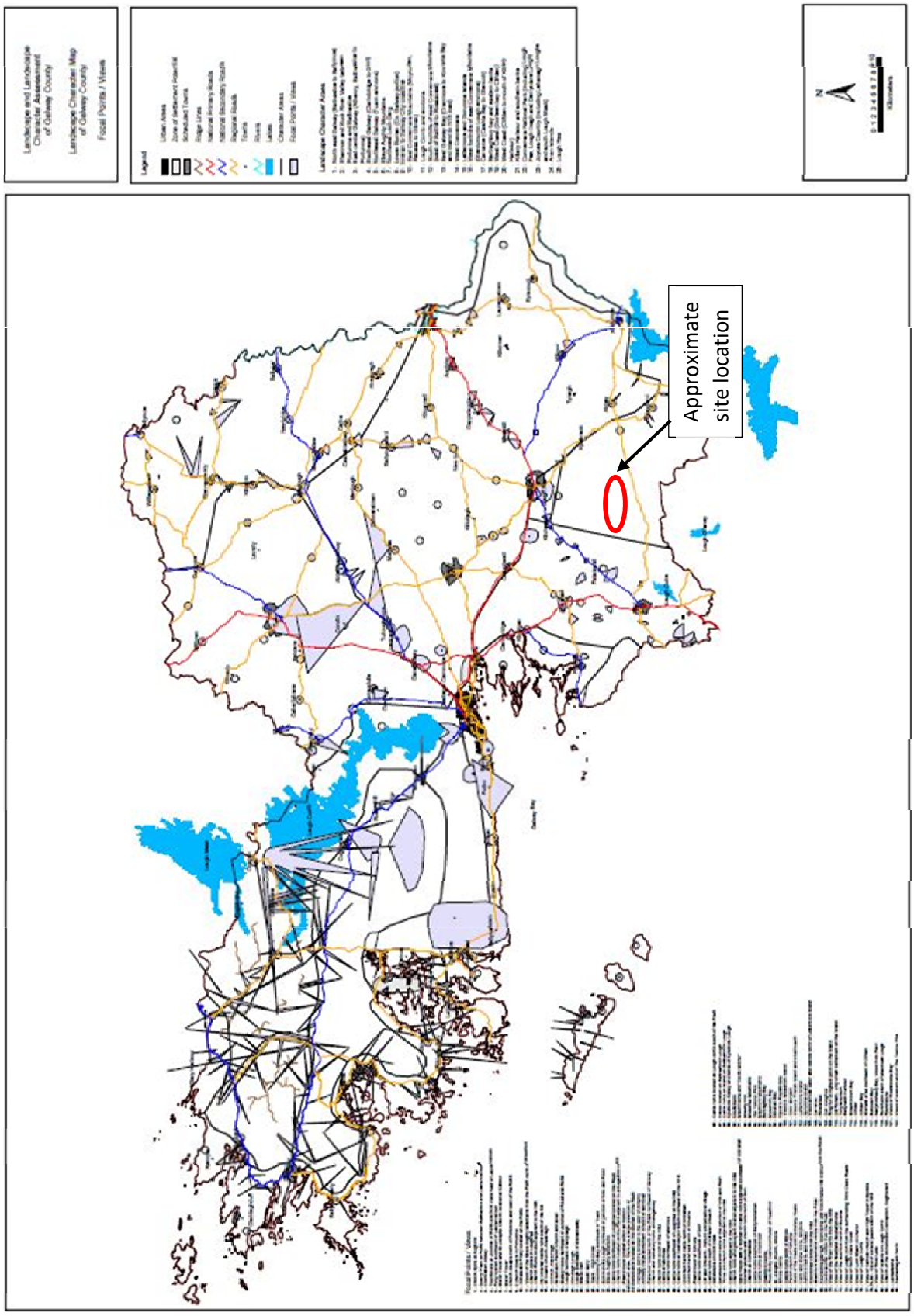
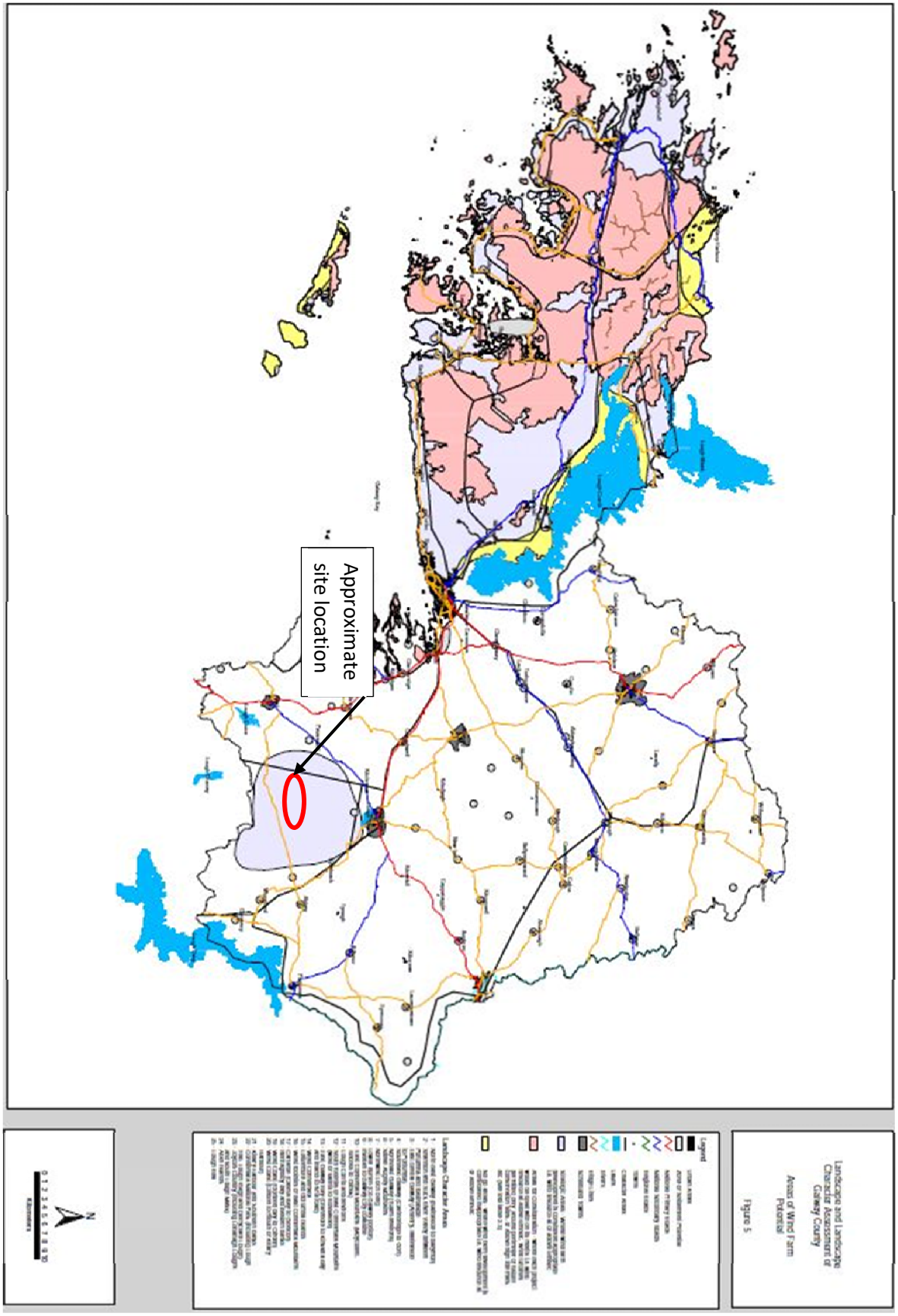


Figure 9.10 *Landscape Character Assessment of County Galway County 2003: Wind Farm Potential*



9.3.3.3 Galway County Development Plan 2009-2015 – Wind Energy Development and Landscape Policy

The 2009-2015 Plan carried forward the Landscape Character Assessment as a Supporting Document. The Assessment was not amended. The site remained indicated on Map IS1 (as shown in Figure 9-11) as a Strategic Area for wind energy until the Wind Energy Strategy (WES) was published and the Plan varied to include it.

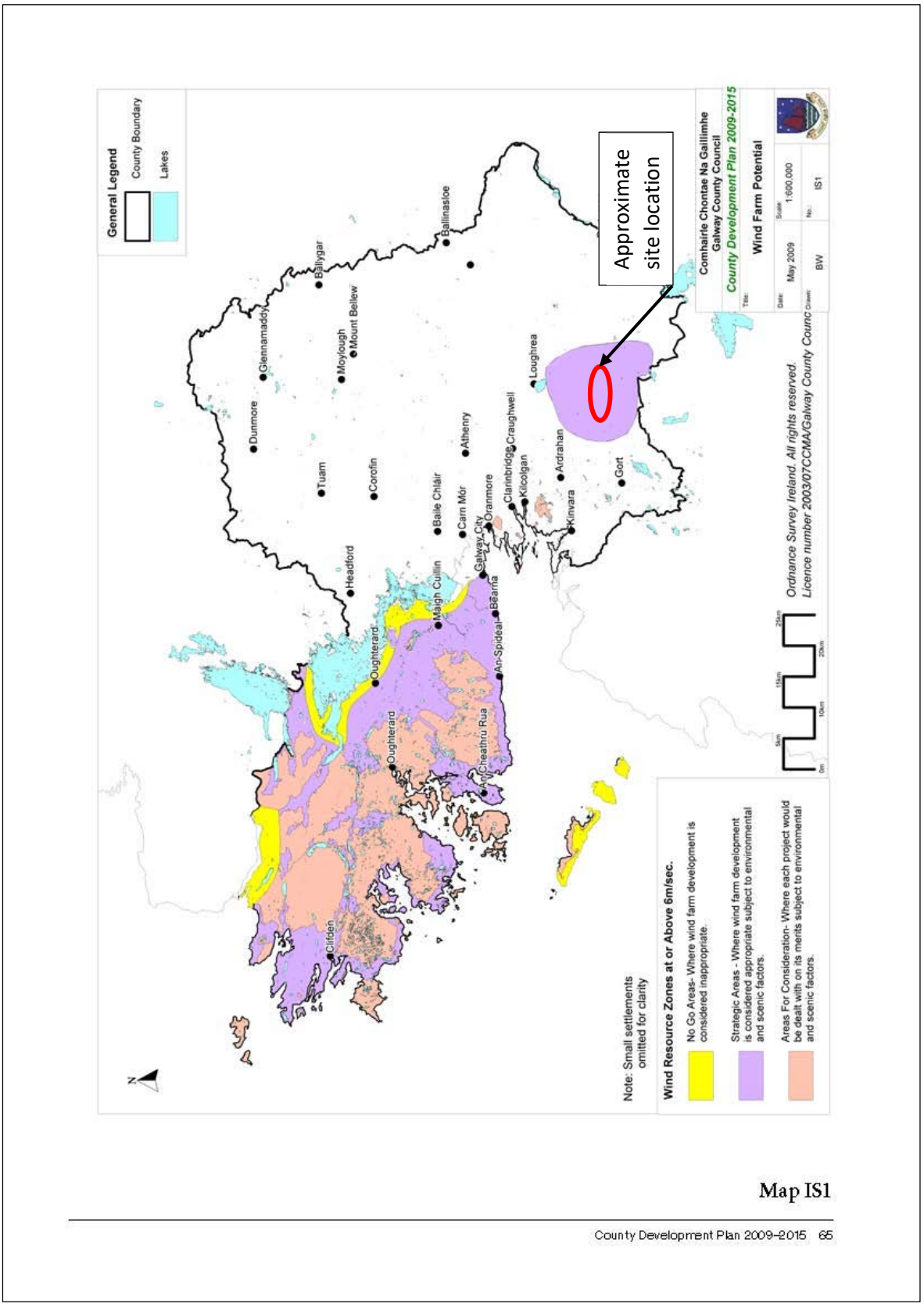
The Plan noted that the provision of electricity generation from wind energy would be subject to development control standards, including the following relevant to landscape:

> *2. Landscape Areas: "Be located in the landscape areas shown suitable for such development (Map IS1), subject to visual and environmental impact assessment, including consideration of designated environmental sites".*

> *4. Landscape Sensitivity: "Avoid where possible interconnecting with the electricity grid either overground or underground across the landscape where sensitivity rating is Class 5 – Unique".*

Map IS1 is included in Figure 9.11. This shows the subject site designated as a Strategic Area, prior to the adoption of the WES outlined below.

Figure 9.11: *Map IS1, Galway County Development Plan 2009-2015*



The GCDP 2009- 2015 reiterated the classification of landscape value (Medium, from possible ratings of Low, Medium, High, Outstanding) and landscape sensitivity (Moderate, from possible ratings of Low, Moderate, High, Special, Unique). It also retained the previously identified Views and Prospects. As previously the Derrybrien Wind Farm project is in an area relatively free of recognised views and prospects, with the only protected view that from the shore at Loughrea.

Variation to 2009-2015 Galway County Development Plan – Galway County Wind Energy Strategy 2011

In 2011, Galway County Wind Energy Strategy (WES) was published. This contained revised and updated areas of wind farm potential which were identified in the 2009-2015 Plan. It was adopted as a variation to the 2009-2015 Development Plan.

The WES took into account the existing Wind Resource zones as identified in the Landscape Character Assessment. Considerations included landscape and visual considerations, the need to achieve greater energy security, national and international commitments regarding reductions in greenhouse gases, promotion of renewable energy, protection of areas of high biodiversity and other environmental considerations.

The WES designated five categories – Strategic Areas, Acceptable in Principle, Open for Consideration and Not Normally Permissible. There was just one Strategic Area identified in the county, located in LCA 10 northwest of Galway City.

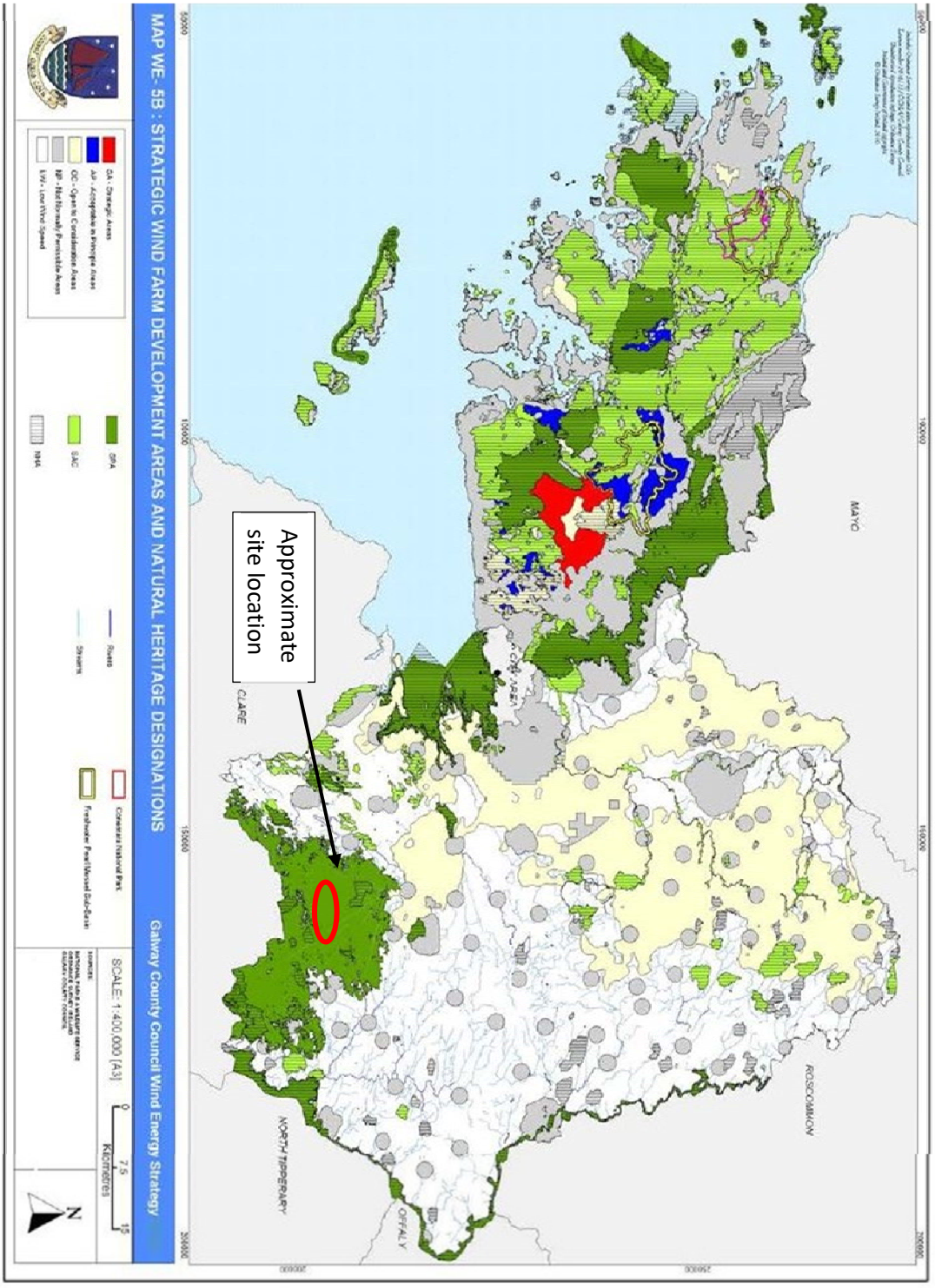
It should be noted that the WES lists the Derrybrien Wind Farm Project, and the nearby Sonnagh Old wind farm, as operational.

Map WE-5B of the WES shows that a large proportion of the Slieve Aughty range (including the Derrybrien Wind Farm project) designated as a Special Protection Area (SPA). Under the WES, the Slieve Aughty LCA was no longer designated a Strategic Area for new wind energy development and it appears that this was largely due to the statutory nature designation and also to topography. Table WE10 in the WES (Landscape Capacity for Wind Energy Development in Landscape Character Areas) notes the following in relation to the Slieve Aughty Mountains LCA:

Small in OC *– Limited capacity due to large areas with statutory nature designation and elevated nature of hill slopes. Small pocket in northwest may provide limited opportunities for small cluster of wind turbines.*

Map WE-5B is illustrated in Figure 9-12.

Figure 9-12: *Map WE-5B, Strategic Wind Farm Development Areas and Natural Heritage Designations*



9.3.3.4 Galway County Development Plan 2015-2021 – Wind Energy Development and Landscape Policy

The 2015-2021 Plan is that which is currently in effect.

The 2011 WES was updated (with minor updates) and included as Appendix IV of the current Galway County Development Plan. The Strategic Areas remain the same, and the Slieve Aughty LCA designations are unchanged, with the area still designated as SPA

The Landscape Character Assessment was updated slightly and is a supporting document to the Plan, but the text regarding the Slieve Aughty LCA remains unchanged.

The Landscape Value and Landscape Sensitivity of LCA 6 Slieve Aughty in the Assessment remain unchanged, with the site located in an area of Class 2 Medium Landscape Value out of a possible 4 categories, from Class 1 Low to Class 4 Outstanding. Landscape Sensitivity in the vicinity of the project is indicated as Class 2 Moderate (out of a possible 5 categories from Class 1 Low to Class 5 Unique.) These are illustrated in Map LCM1 and LCM 2 of the current Development Plan.

The protected view from the shoreline at Loughrea remains the only protected view in the vicinity approximately 10 kilometres north of the Derrybrien Wind Farm Project. This is illustrated on Map FPV 1 of the Development Plan.

With regard to landscape policies, the following policies currently apply:

> Policy LCM 1 – Preservation of Landscape Character: "*Preserve and enhance the character of the landscape where, and to the extent that, in the opinion of the Planning Authority, the proper planning and sustainable development of the area requires it, including the preservation and enhancement, where possible of views and prospects and the amenities of places and features of natural beauty or interest."*
>
> Objective LCM 1 – *Landscape Sensitivity Classification : "The Planning Authority shall have regard to the landscape sensitivity classification of sites in the consideration of any significant development proposals and, where necessary, require a Landscape/Visual Impact Assessment to accompany such proposals. This shall be balanced against the need to develop key strategic infrastructure to meet the strategic aims of the plan, and having regard to the zoning objectives of serviced development land within the Galway Metropolitan Areas".*
>
> Objective LCM 2 – *Landscape Sensitivity Ratings: "Consideration of landscape sensitivity ratings shall be an important factor in determining development uses in areas of the County. In areas of high landscape sensitivity, the design and the choice of location of proposed development in the landscape will also be critical considerations."*
>
> Objective LCM 3 – *Open/Unfenced Landscape "Preserve the status of traditionally open/unfenced landscape. The merits of each case will be considered in light of landscape sensitivity ratings and views of amenity importance"*
>
> Objective LCM4 – *Review of the Landscape Character Assessment: "On adoption of the National Landscape Strategy for Ireland 2015-2025, the Planning Authority shall*

facilitate the development of the National Landscape Character Assessment prior to reviewing the County Landscape Character Assessment."

9.3.4 Summary - Landscape Character and Values

Based on the description (past and present) of the receiving environment (Section 9.3.1) and analysis of previous and current landscape and visual amenity policy (Section 9.3.3), the landscape and visual amenity characteristics and values can be summarised as follows:

- The northern part of the Slieve Aughty Mountains (that part of the range in Co. Galway, comprising Cashlaundrumlahan and the parallel unnamed ridge in the townland of Sonnagh Old) is an upland landscape of relatively small scale and undramatic landform compared to other mountain ranges in Co. Galway and across Ireland.
- The uplands are visible from a very wide area of the surrounding plains (where local variations in topography and vegetation do not block the view in places) but are unremarkable in form and scale. They generally feature as a broad, low, round-topped landform on the horizon, with limited visual presence.
- The Slieve Aughtys have one of the largest concentrations of coniferous forest in Ireland. On the upper slopes the plantations are interspersed with large areas of peat bog (exploited in places for turf cutting) and transitional woodland scrub. On the mid slopes of the mountains there is near blanket forest cover, transitioning to marginal grassland lower down the slope. This is a typical marginal mountain mosaic landscape type – a 'working' upland landscape.
- The Slieve Aughty Mountains, being an upland landscape, were identified as a High Scenic Amenity Area in the GCDP 1997.
- However, in comparison to the other uplands in the county (the Connemara Mountains), the Slieve Aughtys are not renowned for their scenery or recreation amenity. The Landscape Character Assessment which informed the GCDP post-2003 recognised the relatively limited amenities of the area, categorising the Slieve Aughty Mountains as an area of Class 2 Medium landscape value (from a possible ranking of Low, Medium, High or Outstanding). The landscape sensitivity of the area was categorised as Moderate (from a possible ranking of Low, Moderate, High, Special or Unique). These ratings were relatively low compared to other upland areas in the county.
- The Slieve Aughty Mountains had a viable wind resource for exploitation (by the technological standards of the 1990s). The only other areas in Co. Galway with a viable resource were the Connemara uplands and the coastal areas, which were generally considered to be of higher landscape value and sensitivity and some areas had poorer access.
- When other factors are considered such as the road access across the Slieve Aughtys, the uncomplicated topography, the 'working landscape' character and the relative lack of scenic amenity and recreational use (compared to the Connemara uplands and the coastal areas), the wind resource in the Slieve Aughtys represented a development value of at least county-level

significance (and given national policy at the time, the resource in the Slieve Aughtys could be considered of national importance).

- The settlement and transport patterns in the vicinity of the site are sparse. There are no occupied houses within 2km of the wind farm. The nearest village is Derrybrien, some 2km from the site, and the majority of the houses in and around the village have no view of the wind farm due to the local topography and vegetation cover.
- There are a small number of rural houses on the fringes or outside of Derrybrien (to the south), Ballynakill (to the east) and along the local road to the south of the site, which do have views of the wind farm. There are also views afforded from stretches of the Black Road that passes to the east of the site, where local topography and vegetation does not screen the view.
- There is a belt of unpopulated, forest-covered landscape several kilometres wide around the west, north and east of the site on the outer slopes of the mountains. This limits the number of visual receptors of the development.
- The wind farm site is visible from a vast area of agricultural plains to the west, north and east of the Slieve Aughtys, where local topography and vegetation does not screen the view. There is a pattern of dispersed rural settlement along the network of local roads throughout this area. The area is also traversed by several regional and national roads carrying large volumes of traffic (including the M6, M18, N65 and R380). Additionally, the uplands (and the wind farm) are visible from parts of Lough Derg (towards the eastern shore) some 20km to the east.
- The site is far from any large centres of population. The nearest town is Loughrea, some 10km to the north. The wind farm appears - and is clearly visible - in views from the public open space and buildings around the shoreline of Lough Rea.
- The wind farm is not visible from the centre of other large towns in the area, Gort to the west and Portumna to the east. Galway City is some 35km to the north west.

9.4 Impact of the Development

Under each heading, landscape and visual effects are described separately. As set out in Section 9.1, Landscape effects are a combination of the landscape value and susceptibility while visual effects are a combination of visual receptor sensitivity and the value of the view.

Each section includes a description of the magnitude of change and the significance of the effect.

9.4.1 Impacts which have occurred

9.4.1.1 Construction – Phase 1

Landscape Effects

The landscape sensitivity of the receiving environment can be classified as **Low** to **Medium**. This sensitivity applies to all stages of the assessment which are described below.

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.

The topography of the Slieve Aughty Mountains (the northern part of the range in Co. Galway) is unremarkable in scale and form. The land use mix is dominated by coniferous forestry. The settlement pattern is sparse. Although scenic in the sense that the landscape was and is relatively remote, free of built elements and afforded long range prospects over the surrounding plains in places, (and though designated as HSAA prior to construction of the wind farm), the Slieve Aughty Mountains, do not appear widely renowned for their scenic amenity and did not appear to attract widespread recreational use. The landscape value would be considered to be Medium, and the susceptibility to the type of development of wind turbines would be considered Medium to High. These characteristics of the landscape generate the medium sensitivity rating.

Magnitude of Landscape Change

This initial construction phase of the wind farm involved vegetation clearance, including tree felling along the site tracks, as well as along the turbine bases, at the Derrybrien substation located within the windfarm site. Also carried out were activities including the construction of access roads, set up of construction compound, and extraction of rock from borrow pits/quarries. Civil works were carried out to construct some of the turbine foundations and access tracks. A peat slide occurred during October 2003 and works were halted on the wind farm site.

The magnitude of change can be described at various scales, including changes taking place in the vicinity of the site, and those which are apparent at the wider landscape scale. While the peat slide would be considered a high magnitude of change in the immediate vicinity of the windfarm site, this is regarded as a localised change. When considered at the wider ‘landscape scale’ – the scale at which the landscape effects of wind farms and other infrastructure development in rural areas are generally considered – this occurrence on its own represented a Low to Negligible magnitude of change.

Significance of Landscape Effect

Overall the construction phase activities (and including the peat slide) would be considered a **Moderate, adverse effect** on the landscape, but one that is temporary in duration. The construction phase activities would be most evident at the local scale, in the site and immediate vicinity.

The peat slide however would be considered as having been locally Significant from a landscape perspective in the short term. On a wider landscape scale, the landscape effects would be considered Not Significant.

Over time, and at the present day, (approximately 17 years later), the areas affected by the works have largely re-vegetated and integrated into the landscape. The resulting effects are that, today, some of these areas that have re-vegetated are difficult to distinguish from the surrounding areas. The effects are less legible in the landscape than the ongoing forestry operations in the vicinity. The medium and long term landscape effects can be considered Not Significant to Slight.

Visual Effects

The visual effects at construction stage would have been relatively localised due to the low proportion of visual receptors in the area. Visual effects would be caused by machinery in and around the site, and the associated felling. Forestry activities already ongoing in the area and on the site, would include felling activity at certain times.

The visual effects of the peat slide appear to have been localised, as it was visible from the Black Road and also a section of the R353, where the peat was observed flowing across the Black Road and at Flaggy Bridge on the R353.

Magnitude of Visual Change

Section 9.4.2 below contains descriptions of 16 no. photomontages listed in Table 9.6, which were taken when the wind farm was operational. During construction, only viewers at viewpoints in close proximity to the site (Viewpoints 7, 10 on the Black Road and potentially viewpoint 11) would have experienced visual effects. Visual effects in the June-October period would have been localised and of Low to Medium magnitude of change, due to the tree felling and beginning of construction of the turbine bases and access tracks, however locally of a High magnitude of change for a short period of time as a result of the peat slide. The peat slide would have been visible along parts of the Black Road near the Black Road Bridge, and the R353 near Flaggy Bridge.

Significance of visual effect

The construction activities and the peat slide would have been resulted in **Moderate, adverse visual effects** but extremely localised and not visible from the viewpoints in the wider landscape. This would have been a temporary to short term visual effect on receptors in the vicinity of the site and in particular the Black Road area. However, in the medium to long term the visual effects would have lessened, and at present the areas visible from the Black Road and R353 have re-vegetated and assimilated

with the surrounding landscape. Table 9.7 in Section 9.4.1.3 summarises visual effects during Phase 1 and 2 of the construction stage.

9.4.1.2 Works associated with peat slide 2003/2004

Magnitude of Landscape Change

A series of works were taken following the peat slide, and are detailed in Chapter 2. The main elements relevant to this section include several Barrages, peat repositories, the construction of an access track, some tree felling and removal of built up peat. Repairs were also undertaken to several bridges. Barrages 1,2,3,4 remain in situ, while four barrages were removed within a few months of the peat slide. The magnitude of landscape change resulting from these works would have been be very localised and would constitute a Low magnitude of change.

Significance of Landscape Effect

The significance of the landscape effect is considered to have been temporary to Short term, locally **Slight to Moderate** landscape effects. These effects would be considered to range from neutral to adverse in quality.

Magnitude of Visual Change

The visual effects of the works described above would have been localised (to the vicinity of the Black Road and near the Flaggy Bridge. This is considered a Low Moderate of change, and visible in the immediate vicinity of the site.

Significance of visual effect

This would have been be considered a temporary to short term **Slight, adverse** visual effect on receptors in the vicinity of the site. There would not be any visual effects from the wider landscape and visual effects would only be discernible in Views 7, 10 and possibly 13 of the 16 views. The 16 views are included in the table in Section 9.4.1.4 below.

9.4.1.3 Construction – Phase 2

Magnitude of Landscape Change – c. 2004-2005

The main clear felling areas on the windfarm site took place from the second half of 2004. The remaining turbine hardstands and access tracks as well as underground cabling, drainage and other elements specified in the project description (Chapter 2) were completed and the turbines installed, electrical cabling and the substation and other works were completed. Works were also carried out which included public road upgrade works (mainly to the Black Road). Felling was also carried out along the overhead line route and the construction of the Agannygal substation and the overhead line was completed.

This phase involved the movement of machinery on site and along the route of the overhead line and at the locations of the off-site works. On the windfarm site, the extraction of material from the on-site borrow pits/quarries which would have resulted in noise and dust. These activities would have resulted in a localised, High magnitude

of change to the landscape; however it is noted that the site of the project was heavily forested and commercial forestry activities were ongoing at the time.

Significance of Landscape Effects

The landscape effects of the construction Phase 2 is considered to be **Moderate**, **adverse** visual effects. The effects are considered to have been Temporary and localised.

Magnitude of Visual Change

Section 9.4.2 below contains descriptions of 16 no. photomontages listed in Table 9.6, which were taken when the wind farm was operational. These are used to assist in assessing the visual effects at the construction, operational and decommissioning stages. The main description of the viewpoints is included in Section 9.4.1.4 below with the visual effects at construction and decommissioning phase effects included in the relevant sections, 9.4.1.1 and .4.3.2. During the construction phase, only viewers at viewpoints in close proximity to the windfarm site (Viewpoints 7, 10 and possibly 11) as well as viewers in the vicinity of the overhead line and Agannygal substation would experience visual effects.

Visual receptors near the Agannygal substation and the vicinity of the overhead line are relatively few and would include residents in the vicinity, and those travelling along the local road to the west of the substation, and the access road. Tree felling was carried out to facilitate construction of the substation and the overhead line which would have allowed certain views.

Visual effects would have been localised and of Low to Medium magnitude of change due to the tree felling and construction of the remaining elements of the wind farm, overhead line, substation and off-site works.

Significance of visual effect

Table 9.7 below summarises visual effects on viewpoints during construction (Phase 1 and 2, including the Peat Slide). These effects would have been Temporary in nature. However, it is noted that visual effects as a result of the peat slide are not represented by the viewpoints, but is discussed above in 9.1.4.1

Table 9-7 Construction (Phase 1 and 2) visual effects at Viewpoints

No.	Viewpoint Location	Visual Receptor Sensitivity	Magnitude of Change	Significance of Effect
7	View from the Black Road at Coppanagh.	Medium	Low -Medium	Moderate-adverse
10	6.2.10 Viewpoint 10 – View from the Black Road at Derrybrien North.	Medium	Medium	Moderate, adverse

11	View from the R353 at Knockmoyle west.	Medium	Negligible	Negligible

The construction activities would be considered to range from Slight to Moderate, adverse visual effects. The effects on the receptors in the vicinity of the turbines is relatively localised and not visible from the viewpoints in the wider landscape. This would be considered a temporary to short term visual effect. The visual effects of the construction phase of the Agannygal substation are considered to be Slight, adverse visual effect but these visual effects are localised, and it is not visible over a wide area. The visual effects of the construction phase of the overhead line is also considered a Slight, adverse visual effect.

9.4.1.4 Operational phase – circa 2006-to 2020

Following construction, the wind farm was commissioned in early 2006. The Operational Phase effects described below assess the effects of the introduction of the Derrybrien Wind Farm project into the landscape.

Magnitude of Landscape Change

The magnitude of landscape change which resulted from the development can be classified as **Moderate**.

A high magnitude of change can be described as follows (refer to Table 9-2): ‘

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.

A wind farm of 70 no turbines in a grid formation, with associated works (access roads, and overhead line and Agannygal substation etc.), was introduced an upland landscape characterised by large areas of extensive coniferous forestry with tracts of open bogland.

The Derrybrien Wind Farm project would have represented a high magnitude of change. The large scale of the Slieve Aughty Mountains (in lateral extent as opposed to height) and the extensive pre-existing use of the landscape for timber production and ongoing forestry operations would have lowered the magnitude of change. The existing 400kV line from Moneypoint to Woodlands which traverses the road south of the R353, also reduces the magnitude of change in this area as it already contains a large scale electricity transmission line. It should also be noted that the heights of the constructed turbines are considerably lower than the turbine heights which are commonly proposed today.

Measuring the magnitude of change against the sensitivity of the landscape resource (using the guidance outlined in 9.2.2.3 above), **the significance of the landscape effects of the wind farm can be classified as Moderate** (level 4 out of a possible

range of 1 Imperceptible, 2 Not Significant, 3 Slight, 4 Moderate, 5 Significant, 6 Very Significant, 7 Profound).

The effects can be considered **Neutral**. The landscape is a multi-faceted resource, with cultural, environmental and economic values. The development had both positive and negative effects on all three of these facets, but the negative effects were experienced very locally.

In conclusion, the Derrybrien wind farm has been successfully assimilated into the 'working landscape' (a typical marginal mountain mosaic landscape) of the Slieve Aughty Mountains. The landscape in the vicinity of the site is characterised by a mosaic of areas of open moorland with occasional views of the surrounding plains, and enclosed areas dominated by coniferous plantations. While the development of the windfarm changed the character of the landscape, no valued elements or features were lost.

Following the commissioning of the wind farm, no other landscape and visual effects have occurred in relation to the continued operation of the wind farm. However it should be noted that off-site felling was carried out to the west of the site, between 2016 and 2018, as noted in Chapter 2, Section 2.6.4. This was done in order to optimise productivity of the wind farm. However these areas had been scheduled for felling in 2015 as part of Coillte's routine felling programme, and have been replanted.

Visual Receptors

To inform consideration of the visual effects at all stages of the wind farm on the receiving environment, 16 no. viewpoints were selected for detailed assessment. The operational visual effects of the wind farm are described below, and the visual effects at the construction and decommissioning phase are referred to in Section 9.4.1 and 9.4.3 respectively.

The operational effects are assessed below.

The viewpoints were selected to represent the key categories of visual receptors (e.g. the local community around Derrybrien; the wider rural community around the Slieve Aughty Mountains; settlements in the area; recreation areas, users of affected regional and national transport routes, etc.). The selection of viewpoints also sought to ensure that locations in all directions around the site, and at various distances from the site, were considered.

Assessment of the visual effects on these representative locations allows for broad conclusions to be drawn as to the overall effect of the operation and decommissioning of Derrybrien Wind Farm on visual amenity in the receiving environment.

Zone of Theoretical Visibility

The first step in selecting viewpoints is the usually the preparation of a Zone of Theoretical Visibility (ZTV) map. This identifies the area (up to a defined distance from the site – in this case 25km) from which the turbines can theoretically be seen based on topography, i.e. all areas where the turbines are not blocked from view by the landform. Though the Derrybrien wind farm project is already in existence, The viewpoints were selected from site visits and also with reference to the wind farm's

ZTV. The ZTV is shown on Figure 9-13, in Appendix 9-1 The theoretical and actual visibility is described in Section 9.3

Viewpoint Selection

The 16 no. viewpoints are shown on Figure 9-13. The viewpoints are as follows:

Table 9-8 Viewpoint Locations

No.	Viewpoint Location
1	View from the M6 motorway at Clougharevaun, near Kiltullagh, approximately 19.1 kilometres north of the Derrybrien wind farm site.
2	View from the N18 national route at Caherpeak East, south of Kilcolgan, approximately 19.2 kilometres northwest of the Derrybrien wind farm site.
3	View from the shore of Lough Rea, approximately 11 kilometres north of the Derrybrien wind farm site.
4	View from the N65 road at Garryadd, approximately 22 kilometres northeast of the Derrybrien wind farm.
5	View from the local road at Curhoor, south of Kileenadeema, approximately 6 kilometres northwest of Derrybrien wind farm.
6	View from the N66 in the townland of Cuilmore, near Peterswell, approximately 8.1 kilometres northwest of the Derrybrien wind farm.
7	View from the Black Road at Coppanagh, approximately 1 kilometre east of the Derrybrien wind farm
8	View from the Regional Road R351 at Derrygarriff, approximately 9 kilometres east of the Derrybrien wind farm.
9	Viewpoint 9 – View from the Regional Road R458 on the northern outskirts of Gort, approximately 12.9 kilometres west of the Derrybrien wind farm.
10	6.2.10 Viewpoint 10 – View from the Black Road at Derrybrien North, approximately 1.3 kilometres southeast of the Derrybrien wind farm
11	View from the R353 at Knockmoyle west, approximately 3.7 kilometres southeast of the Derrybrien wind farm
12	View from the harbour at Terryglass, Co. Tipperary, approximately 25 kilometres from the Derrybrien wind farm.
13	View from the local road at Loughatorick North, approximately 5.7 kilometres southeast of the Derrybrien wind farm.
14	View from the local road and East Clare Way at Corlea Beg, approximately 10.2 kilometres south of the Derrybrien wind farm.
15	View from the R461 between Feakle and Gort at Doorus East, approximately 12.5 kilometres southwest of the Derrybrien wind farm
16	View from the M18 motorway between Gort and Crusheen at Monreagh, approximately 21.6 kilometres southwest of the Derrybrien wind farm

Photomontages

The photomontage booklet (Appendix 9-3) shows the 16 viewpoints as 'Existing Views' based on images captured in 2016, to assist in assessing the operational

phase visual effects. A selection of 5 images from both close up and more distant viewpoints, (numbers VP3, VP5, VP7, VP10 and VP14) were produced with the turbines digitally removed to illustrate the visual effects of the Decommissioning scenario. The Overhead line was also digitally removed, in this case, Viewpoint 10, to represent the decommissioning scenario. Technical information accompanying the photomontages is contained in this booklet. Photo locations are shown on the ZTV map in Appendix 9-1.

Viewpoint 1 – View from the M6 motorway at Clougharevaun, near Kiltullagh, approximately 19.1 kilometres north of the Derrybrien wind farm

Description of the View – Existing View

Note: This is one of two additional views which would not have been present c. 1998.

The M6 is the main transport route to and from Galway and carries a large volume of traffic. It passes approximately some 18km to the north of Derrybrien at its nearest point. The motorway traverses a low-lying, gently undulating landscape comprised of wet grassland fields divided by a mix of low stone walls and sparse hedgerows, tree lines in elevated areas and occasional patches of bog and coniferous forest. Houses are widely dispersed along the network of local roads to either side of the motorway. Views from the motorway are generally composed of these elements. This view shows the Slieve Aughty Mountains form the backdrop to the view south, a broad, low, undulating upland landscape in the distance, dark coloured and with a jagged horizon due to the forest cover. Although forming the horizon in an otherwise low-lying landscape, the mountains are not dramatic in form or scale and do not constitute a key element of the view. Fields, patches of forestry, and dwellings are visible in the foreground of this view.

The sensitivity of the viewpoint is Low. The view is experienced by motorway users and views from the road have no particular valued feature or characteristic.

Magnitude of Change

The Derrybrien turbines (and the Sonnagh Old turbines, in a separate cluster) are visible in the distance protruding above the horizon line. The spatial spread of the wind farm is wide but the upland itself is broad and is not dominated by the wind farm (or by the two wind farms). The turbines are not tall by modern standards and therefore do not dominate the upland, or any other element of the view by their height. The turbines are tightly clustered; therefore some visual stacking occurs, but the grid-pattern is not apparent. The overhead line and Agannygal substation are not visible in this view.

Significance of Visual Effects – Operational Phase

The wind farm is visible but a relatively inconspicuous element in views from the motorway.

The turbines are discernible but not prominent at this distance. The magnitude of change is considered Negligible. The visual effects of the of the wind farm on views from this viewpoint on the M6 are Imperceptible and neutral – the wind farm does not enhance or detract from visual amenity as experienced by the road users.

The significance of visual effects is considered to be **Imperceptible and neutral**.

Viewpoint 2 – View from the N18 national route at Caherpeak East, south of Kilcolgan, approximately 19.2 kilometres northwest of the Derrybrien wind farm

Description of the View- Existing View

The N18 is the main transport route between Galway and the south, passing through Gort, Ennis and Shannon. The road traverses a low-lying, flat to undulating landscape comprised of wet grassland fields divided by a mix of low stone walls and sparse hedgerows, tree lines in elevated areas and occasional patches of bog (some of these large) and scrub. Houses are dispersed along the road, particularly approaching towns and villages along the route. Views from the road are generally composed of these elements. The Slieve Aughty Mountains form the backdrop to the view east, a broad, low, undulating upland landscape in the distance, dark coloured and with a jagged horizon due to the forest cover. Although forming the horizon in an otherwise low-lying landscape the mountains are not dramatic in form or scale and do not constitute a key element of the view.

The sensitivity of the viewpoint is Low to Medium. Viewers from the road would have some focus on their surroundings. The areas has no particular valued features, but in places the landscape is relatively free of built elements and the character is distinctly rural.

Magnitude of Change

The Derrybrien turbines (and the Sonnagh Old turbines which lie to the left of the image) are visible in the distance protruding above the horizon line. The spatial spread of the turbines is wide but the upland itself is broad and is not dominated by the wind farm. The turbines are not tall by modern standards and therefore do not dominate the upland, or any other element of the view by their height. The turbines are tightly clustered; therefore some visual stacking occurs, but the grid-pattern is not apparent, and the stacking is not easily discernible at this distance. In the foreground, gently undulating grassland with clumps of trees and some buildings is seen to the left of the road. The wind farm is visible but a relatively inconspicuous element in views from the road. The magnitude of change is considered Low.

Significance of Visual Effects – Operational Phase

The magnitude of change is considered Low. The visual effects of the operational phase are considered to be **Not Significant and neutral.**

Viewpoint 3 – Lough Rea Shoreline, Loughrea, approximately 11 kilometres north of the Derrybrien wind farm.

Description of the View- Existing View

The view from the amenity open space around the northern shoreline of Lough Rea is dominated by the lake. There is a fringe of vegetation around the distant shoreline, interspersed with agricultural fields, beyond which an undulating agricultural landscape rises up to forested hills. These are the Slieve Aughty Mountains which form the backdrop to the view and the horizon. The mountains are modest in form and scale, dark coloured, and the horizon line is made jagged by the forest cover. The uplands are less prominent and of lesser value in the view than the broad expanse of the lake, the shoreline and the woodland fringe and farmland on the far side of the lake. The sensitivity of the viewpoint is High (it is recognised as a focal point/view in the Galway LCA and current County Development Plan on Map FPV1.

Magnitude of Change

The Derrybrien turbines are visible in the distance along the ridge. The turbine cluster is broad and densely arranged across a distinct hill within the upland. However, in the context of the panoramic view across the lake they occupy a small part of the view. The separate Sonnagh Old turbine cluster is smaller and less dense but slightly more prominent being closer to the viewer and located on a more prominent hill. The magnitude of change is considered Medium.

Significance of Visual Effects – Operational Phase

The magnitude of change is considered Medium, and the visual effects of the wind farm on views from the Lough Rea shoreline are considered **Moderate.** Although affecting a proportion of the overall view, the turbines are at some distance from the viewer. The introduction of a dense cluster of infrastructural elements to the previously simple, valued composition, has detracted from the visual amenity. The effects are therefore **adverse**.

Viewpoint 4 –View from the N65 road at Garryadd, Killomor, approximately 22 kilometres northeast of the Derrybrien wind farm.

Description of the View- Existing View

The N65 road connects Portumna to Galway via Loughrea and the village of Killimor. The village is situated in the low-lying agricultural landscape to the north east of the Slieve Aughtys. The settlement has a linear arrangement along the road, with the density of housing decreasing with distance from the centre. Within the village, along

the main road, buildings and vegetation generate a high degree of visual enclosure. From certain locations (for example the parking area beside the church) and from houses around the village long distance views are afforded toward the south west. The landscape around the village is low lying, undulating and composed predominantly of grassland fields divided by hedgerows.

In this view, (representing views from in and around the village) some outlying houses are visible in the middle-distance protruding above the hedgerow vegetation. The Slieve Aughty Mountains form the backdrop to this view, a broad, low, undulating upland landscape in the distance. Although forming the horizon in an otherwise low-lying landscape the mountains are not dramatic in form or scale and do not constitute a key element of the view.

The visual receptor sensitivity, which include residents in the area, is Medium.

Magnitude of Change:

The Derrybrien turbines, and the Sonnagh Old turbines in a separate cluster, are discernible in the distance occupying parts of broad upland. The Derrybrien turbines are distant and of limited spatial extent and prominence in the view, , but numerous turbines are visible. The linear/grid arrangement of the turbines is apparent from the wireframe view, and some visual stacking occurs. The turbines appear small and do not dominate the upland, or any other element of the view by their height. The wind farm is discernible but an inconspicuous and distant element in the view.

Significance of Visual Effects

The magnitude of change is considered Negligible. The turbines are partly hidden by intervening vegetation and are seen at some distance. The visual effects on the views from Killimor are **Imperceptible and neutral.**

Viewpoint 5– View from the local road at Curhoor, south of Kileenadeema, approximately 6 kilometres northwest of Derrybrien wind farm.

Description of the View- Existing View

The view is taken from a local road in the townland of Killeenadeema West, to the north of Derrybrien, between the Slieve Aughtys and Lough Rea. This is the landscape of outlying hills between the uplands and the lowland agricultural area to the north. As elevation increases grassland fields give way to a disorderly matrix of rough grassland, scrub and coniferous forest. The settlement pattern in the area is sparse.

In this view the foreground is occupied by scrubland rising to a belt of coniferous forest which largely screens the bulk of the uplands to the south. The low, rounded crest of Cushlaundrumlahan protrudes marginally above the treetops, itself largely covered by plantations.

The sensitivity of the viewpoint is low to medium. The landscape is heavily disturbed by abandonment of agriculture and the transition to forestry. There are no particularly valued features apart from a relative absence of buildings .

Magnitude of Change

The magnitude of change that has taken place is considered Medium. The Derrybrien turbines occupy the part of Cushlaundrumlahan that is visible protruding above the forest covered hills in the middle distance. In the existing view, the wind farm occupies a considerable part of the view, however due to their small scale, the turbines are no more prominent than the conifer trees in the view. The coniferous trees extend over much of the background of the view.

Significance of Visual Effects

The magnitude of change that has taken place is considered Medium. The turbines occupy a considerable extent of the view, and although not dominant are clearly visible. The turbines are relatively densely clustered, but their grid arrangement is not apparent, and no visual stacking occurs. The visual effects on the views from this view and the vicinity are considered **Moderate and neutral.**

Viewpoint 6 – View from the N66 in the townland of Cuilmore, near Peterswell, approximately 8.1 kilometres northwest of the Derrybrien wind farm.

Description of the View- Existing View

The view is taken from a local road in the townland of Cuilmore, along the Gort to Loughrea road. This is the landscape of gently undulating agricultural land along the road. The land rises to the east towards the Slieve Aughtys, which are have a long and relatively low profile, but are clearly seen above the surrounding low-lying land. This view represents the stretch of N66 road between Gort and the Peterswell junction in general has good visibility of the Derrybien turbines.

This view shows a view from the roadside, across relatively flat, low lying agricultural fields bounded by hedgerows and tree lines. Tree clumps are visible in the middle ground, while the Slieve Aughty hills are seen in the background.

The sensitivity of the visual receptor is considered Low to Medium.

Magnitude of Change

The Derrybrien turbines are visible near the centre of the image and are visible as a row against the skyline and conifer plantation is seen the foreground of the turbines. To the left of the image, the Sonnagh Old turbines are also visible.

Significance of Visual Effects

The magnitude of change of the operational phase is considered Low. The turbines are clearly visible, but in no way dominant. They do not occupy an extensive proportion of the view, and a small part of the windfarm is partly screened by intervening vegetation. The visual effects are considered **Slight and neutral.**

Viewpoint 7 – View from the Black Road at Coppanagh, approximately 1 kilometre east of the Derrybrien wind farm

Description of the View- Existing View

This viewpoint is from the Black Road, a local road just east of the windfarm. This represents one of the more open views of the turbines, at a high point of the road from where there are also panoramic views over the lower lying landscape to the east. This location is open and relatively exposed owing to a gap in the conifer plantation. The area has a remote feel with heath and coniferous forestry the main elements. There are no dwellings along this section of road from this location to the junction with the R353 to the south.

The sensitivity of the visual receptor at this viewpoint is considered Medium. The road is a remote, quiet road, which travels over an elevated position, with open and expansive views over the surrounding low-lying landscape to the east and has a sense of remoteness.

Magnitude of Change

The magnitude of change is considered Medium. This view shows a relatively open view with heath or bogland in the foreground, and conifer plantations in clumps to the rear of the image. The turbines are clearly visible in rows, and the grid pattern is visible, with clumps of coniferous forestry obscuring the bases of some of the towers.

Significance of Visual Effects

The magnitude of change is considered Medium. The turbines are clearly visible from this location and occupy a large proportion of the view, however the closer turbines are clustered towards the centre of the view. The coniferous forestry already introduces an element of height, and which is clearly related to large scale forestry operations which have modified the landscape, providing a contrast with the moorland landscape in the foreground. The visual effects on the views from this view and the vicinity are considered **Moderate.** In terms of the quality of the effect, the effect is considered **adverse.** The turbines and forestry combine to increase clutter in the view and contrast with the simplicity of the moorland, but the limited height of the turbines ensures that they are not overly dominant. They do not obstruct valued views, the extensive views in this location are to the east where long distance views are available.

Viewpoint 8 – View from the Regional Road R351 at Derrygarriff, approximately 9 kilometres east of the Derrybrien wind farm.

Description of the View- Existing View

This view is taken from the R351 between Loughrea and Woodford, east of the Derrybrien wind farm. The road runs through a gently undulating landscape, with agricultural fields, tree clumps and scattered dwellings along the roadside. There are

views to the west towards the heavily forested Slieve Aughty but views to the east are more restricted by topography.

This view shows a view over roadside pastoral fields with clumps of coniferous and deciduous trees visible in the middle ground. The backdrop is provided by the Slieve Aughty Mountains which form a long, low rise backdrop, and are covered in coniferous plantation with areas of open bog land, while scattered buildings are visible on the higher ground to the right of the image.

The visual receptor sensitivity at this viewpoint is considered Low to Medium.

Magnitude of Change

The Derrybrien turbines are visible in a tight cluster along the ridgeline but are a minor and distant overall component in this view. The magnitude of change is considered Low.

Significance of Visual Effects

The magnitude of change is considered Low. Though the turbines are visible, they are not tall, and occupy a small proportion of the view in a dense cluster and are at some distance from the viewer. The visual effects on the views from this view and the vicinity are **Not Significant, neutral effect.**

Viewpoint 9 – View from the Regional Road R458 on the northern outskirts of Gort, approximately 12.9 kilometres west of the Derrybrien wind farm.

Description of the View- Existing View

This view represents the views just north of the town of Gort, on the R458 towards Ardrahan. The land along the road is low-lying in this area and views across agricultural fields, interspersed with scattered dwellings, allow some visibility to the Slieve Aughty mountains to the east.

This view shows an open field in between dwellings, with tree clumps visible with field boundaries visible. Clumps of deciduous trees are visible in the middle ground, and the land rises in the distance to the long ridge of high ground visible in the background, which dips slightly and rises again to the left of the image.

The visual receptor sensitivity is considered Low - Medium.

Magnitude of Change

The Derrybrien turbines are visible in the distance on the ridge in the centre of the image and appear as a cluster with relatively limited spatial extent, and appear among areas of coniferous forestry interspersed with areas of open moorland. The Sonnagh Old turbines appear somewhat clearer on the ridge to the left of the image.

Significance of Visual Effects – Operational Phase

The magnitude of change is considered Low. While the turbines are visible, they are a low, distant component of the view and occupy a very limited extent of the view. The visual receptors are considered Low-Medium sensitivity. The visual effects on the views from this view and the vicinity are **Not Significant, neutral visual effect**.

Viewpoint 10 – View from the Black Road at Derrybrien North, approximately 1.3 kilometres southeast of the Derrybrien wind farm

Description of the View- Existing View

This is a second view from the Black Road, representing the viewers along the road just north of the junction with the R353. This section of the Black Road has a higher proportion of forestry and is more enclosed, but there are some open views to the windfarm where there are gaps in the forestry plantation.

This view shows a relatively open foreground landscape with an area of heathland, with some deciduous and coniferous tree clumps. A derelict dwelling is seen to the left of the image. The contrast between the large swathes of coniferous forestry in the background (and recently felled and planted areas areas) and the more simple texture of the open moorland is evident.

Magnitude of Change

The turbines occupy a large extent of the image and are visible against the skyline. The Overhead line is just visible to the left of the image but are partly screened by the forestry. The magnitude of change which has occurred is considered High.

Visual receptor sensitivity is considered to be Low to Medium at this location. It should be noted that the road is a quiet, remote road with few receptors.

Significance of Visual Effects

The magnitude of change of the view that has occurred is considered High, as the turbine blades are clearly visible from this location and over a large extent of the view. The turbines are mainly seen behind the coniferous plantation, which creates a somewhat cluttered view. The visual effects on the viewers from the vicinity are considered a **Moderate, adverse** effect.

Viewpoint 11 – View from the R353 at Knockmoyle west, approximately 3.7 kilometres southeast of the Derrybrien wind farm

Description of the View- Existing View

This view, on the road, from Derrybrien to Balllynakill and to Woodford, is taken at a point where the road rises in elevation and emerges from roadside conifer plantation and has some views of the Derrybrien turbines where there are sections of open views to the northwest. There are also some open views over the low-lying landscape to the south and south east, where gaps in the conifer plantations allow views.

In this view, which is partially screened by roadside vegetation, a field and a clump of deciduous trees in the foreground gives way to extensive coniferous plantations, and the land begins to rise away from the viewer, and towards the ridge where the wind turbines are located. Visual receptor sensitivity is considered to be Medium at this location.

Magnitude of Change

The turbines are visible against the skyline, though some are obscured from the view by foreground vegetation. They are not a key element of this view. While the turbine blades are visible from this location, they are not dominant, and do not appear tall. (It should be noted that several images were captured but all views were affected to some extent by intervening foreground vegetation, and this view was the clearest.)

Significance of Visual Effects

The magnitude of change of the operational phase is considered Low and the visual receptor sensitivity is Medium. Though relatively close to the windfarm, the turbines are partly hidden by the intervening roadside vegetation. (Much of this vegetation is evergreen and the view was taken in the winter, representing the most open view). While the turbine blades are visible from this location, they are not dominant, and do not appear tall. They are seen against a backdrop of coniferous forestry. The visual effects on the viewers are considered **Slight, neutral effect.**

Viewpoint 12 – View from the harbour at Terryglass, Co. Tipperary, approximately 25 kilometres from the Derrybrien wind farm.

Description of the View- Existing View

This view represents the view over Lough Derg from the harbour at Terryglass. Some boats at the mooring, and deciduous trees are visible, but the open expanse of water is the main feature of the view, combined with a backdrop of the lakeshore vegetation, and distant and gently sloping Slieve Aughty hills in the centre of the view.

The visual receptor sensitivity at this location is considered to be High due to its scenic qualities and popular location for tourists and those using the marina facilities for leisure.

Magnitude of Change

The Derrybrien turbines are visible as a distant element in the view, along the ridge in the centre of the image and occupy a small proportion of the view. The Sonnagh Old turbines are also visible to the right of the Derrybrien turbines. The magnitude of change considered to have taken place is Low.

Significance of Visual Effects

The magnitude of change of the operational phase is considered Low. The turbines are visible in a dense cluster of limited extent in the context of the overall view. However, they are a distant feature in this view, and in no way are dominant, with the lake remaining the key element in the view. The visual effects are considered to be **Slight, neutral effect.**

Viewpoint 13 – View from the local road at Loughatorick North, approximately 5.7 kilometres southeast of the Derrybrien wind farm.

Description of the View- Existing View

This view represents a local road which traverses the Slieve Aughtys form the R353 south towards the Co. Clare Boundary and descends to the Bleach River valley.

The view shows a field and a roadside residence surrounded by trees in the foreground. In the distance, the land slopes up towards a ridge of higher ground which is covered by coniferous plantations and some areas of bog land.

The visual receptor sensitivity at this location is considered to be of Low to Medium sensitivity.

Magnitude of Change

The Derrybrien turbines are visible along the ridge, some are obscured by intervening foreground vegetation. They are visible but not a key or dominant element of the view. The Overhead line is not visible in this view. It is considered that a Medium magnitude of change has taken place.

Significance of Visual Effects

The magnitude of change is considered Medium. The turbines do occupy a large extent of the view but are partly screened by the vegetation. The turbines are relatively low, and seen at some distance. The visual effects on the viewers from the vicinity are considered **Slight, neutral effect**.

Viewpoint 14 – View from the local road and East Clare Way at Corlea Beg, approximately 10.2 kilometres south of the Derrybrien wind farm.

Description of the View- Existing View

This view is taken from an elevated section of local road near Lough Graney, Co. Clare, where there are extensive views over the surrounding landscape which slopes down towards the Bleach river valley and rises gently to the Slieve Aughty mountains. This location also has extensive views over Lough Graney to the east, which are not shown in this view.

The view shows wet grassland in the foreground which slopes away from the viewer, towards a valley which is covered in a mixture of coniferous and broadleaf trees but

dominated by conifers. Areas of open moorland are also visible, which contrast with the forestry, with stretches of open fields also seen in the middle ground.

The visual receptor sensitivity is considered to be High, as this is along a waymarked walking trail and has considerable scenic qualities and long distance views.

Magnitude of Change

The land rises towards the long, low ridge in the background where the Derrybrien turbines are visible in the distance. The turbines appear in a staggered linear formation along the ridge, and occupy a considerable proportion of the view, but appear distant and not as a key element of the view. Being seen on the ridgeline, some turbines are difficult to distinguish from the background sky (note that this would change depending on the weather conditions). The overhead line is not visible in this view. The magnitude of change is considered Low to Medium.

Significance of Visual Effects

The visual receptor sensitivity is considered High, and the magnitude of change is considered Low to Medium. While the turbines occupy a proportion of the view, they are relatively distant and are well located on the ridge of high ground and do not affect the composition of the view. The visual effects are considered to be **Slight to Moderate, neutral** visual effect.

Viewpoint 15 – View from the R461 between Feakle and Gort at Doorus East, approximately 12.5 kilometres southwest of the Derrybrien wind farm.

Description of the View- Existing View

This view represents a view from the road over an undulating landscape, at a point on the road which shows a considerable amount of low lying coniferous and deciduous tree cover in the foreground, with a glimpse of Lough Graney in the middleground. The land rises to the right and left of the image, where a patchwork of small fields are visible. Scattered dwellings are visible. In the distance, in the centre of the view, the low ridge of the Slieve Aughty mountains is visible, with the uneven profile of the coniferous plantation also evident to the right. The visual receptor sensitivity is considered Medium to High. This is not a scenic route or waymarked trail, but a road in a remote location with occasional views over Lough Graney.

Magnitude of Change

The Derrybrien turbines are just visible along the skyline and occupy a relatively limited extent of the view. The turbines are distant elements, and low in height.

Significance of Visual Effects – Operational Phase

The magnitude of change is considered Low and visual receptor sensitivity Medium-High. The turbines occupy a medium proportion of the view, but are distant elements and low in height. The visual effects on the viewers from the vicinity are considered **Slight, neutral effect.**

Viewpoint 16 – View from the M18 motorway between Gort and Crusheen at Monreagh, approximately 21.6 kilometres southwest of the Derrybrien wind farm

Note: This is one of two additional views which would not have been present c. 1998.

Description of the View- Existing View

This viewpoint represents a view from the M18 Motorway between Gort and Crusheen, which traverses a relatively flat landscape, and with good views in sections to the Slieve Aughty mountains to the east. The land along the motorway is gently undulating, and ranges from wet grassland to pasture and areas covered by deciduous vegetation. In the distance, the Slieve Aughty mountains are visible,

Visual receptor sensitivity is considered Low.

Magnitude of Change

The Derrybrien turbines are visible as a relatively tight cluster along the ridge, occupying a small proportion of the view. Electricity infrastructure is also visible in this view, with steel lattice towers visible to the left of the image. The magnitude of change is considered Negligible.

Significance of Visual Effects

The magnitude of change of the operational phase is considered Negligible. The turbines are at a considerable distance and occupy a very small extent of the view which would typically be experienced by viewers travelling at high speeds. The visual effects on the viewers from the vicinity are considered **Imperceptible and neutral**.

Summary of Operational Phase Visual Effects – Photomontages

Table 9-9 Visual Assessment Summary of Viewpoint Locations

No.	Viewpoint Location	Visual Receptor Sensitivity	Magnitude of Change	Significance of Effect
1	View from the M6 motorway at Clougharevaun, near Kiltullagh	Low.	Negligible	Imperceptible, Neutral
2	View from the N18 national route at Caherpeak East, south of Kilcolgan.	Medium	Low	Not Significant , neutral.
3	View from the shore of Lough Rea.	High	Medium	Moderate, adverse
4	View from the N65 road at Garryadd,	Medium	Negligible	Imperceptible, neutral.
5	View from the local road at Curhoor, south of Kileenadeema.	Low-Medium	Medium	Moderate, neutral
6	View from the N66 in the townland of Cuilmore, near Peterswell.	Low-Medium	Low	Slight, neutral
7	View from the Black Road at Coppanagh.	Medium	Medium-High	Moderate-adverse
8	View from the Regional Road R351 at Derrygarriff.	Low-Medium	Low	Not Significant, neutral
9	Viewpoint 9 – View from the Regional Road R458 on the northern outskirts of Gort.	Low-Medium	Low	Not Significant, neutral
10	6.2.10 Viewpoint 10 – View from the Black Road at Derrybrien North.	Medium	High	Moderate, adverse
11	View from the R353 at Knockmoyle west.	Medium	Low	Slight, neutral.

12	View from the harbour at Terryglass, Co. Tipperary.	High	Low	Slight, neutral
13	View from the local road at Loughatorick North	Medium	Low- Medium	Slight, neutral
14	View from the local road and East Clare Way at Corlea Beg	High	Low	Slight-Moderate, neutral
15	View from the R461 between Feakle and Gort at Doorus East,	Medium-High	Low	Slight, neutral
16	View from the M18 motorway between Gort and Crusheen at Monreagh.	Low	Negligible	Imperceptible, neutral.

In summary, visual effects arising from the placing of the wind farm in the landscape range from Imperceptible to Moderate . As shown in Table 9-9 above, Viewpoints 3 and 7 and 10 were considered of Moderate significance, and the quality of the effect was adverse. Viewpoint 5 was considered a Moderate, neutral visual effect. All the other viewpoints ranged from Imperceptible, neutral (Viewpoints 1,4 and 16), Not Significant and neutral (Viewpoints 2,8,9) and Slight, neutral; Viewpoints 6,11,12,13,14,15).

The quality of the visual effects – whether adverse or neutral – varies, and it should be noted that this is somewhat subjective and is also likely to vary depending on the viewer, as noted in Section 9.2.8.3.

Furthermore, turbines are not the only element of height introduced to the landscape. The presence of extensive coniferous forestry in the vicinity visible in many of the views, provides an element of considerable height as well as a sense of enclosure and a change in views experienced in parts the landscape. Some views show a clear contrast between open moorland and dense coniferous forestry, along parts of the Black Road and in the wider landscape.

The substation and other buildings on the wind farm site are not be viewed from the public road, and therefore are considered to have an Imperceptible effect.

The overhead line is quite prominent in the immediate vicinity of the site and in sections of the Black Road and the R353. Further south, the line traverses through largely remote and heavily forested areas. However it is not visible in the majority of the views described above. The visual effect ranges from Not Significant to Slight,

adverse effect, in areas where it is in close proximity to the viewer and is seen along with the turbines.

The Agannygal substation is visible over a very limited area. It is clearly visible from the local road to the west, where a view over an area of bogland allows clear views of the substation. Other sections of this road, and part of the approach road to the west, are heavily screened with vegetation. The visual effect is considered of Slight, adverse visual effect in the vicinity of the substation. As noted in Section 9.3, the substation was constructed in a block of coniferous forestry, and felling has subsequently been carried out. Visual effects are likely to have been less at the time of construction. A photograph is included in the Baseline (Plate 9) in Section 9.3

9.4.2 Impacts which are occurring

Landscape and Visual Effects

The landscape and visual effects as a result of the construction phase, and the operational phase (which assessed the placing of the wind farm in the landscape) are described in Section 9.4.1. The continued operation and maintenance of the wind farm does not give rise to any additional landscape or visual effects.

Activities in the vicinity of the site including forestry, agriculture and turf cutting are expected to continue, and assessed under Cumulative effects.

9.4.3 Impacts which are likely to occur

9.4.3.1 Operational phase – 2020 to project end

Landscape and Visual Effects

The landscape in the vicinity of the turbines is expected to continue to change over time, with forestry operations (felling, timber removal and replanting) expected to continue on a cyclical basis as in the past and at present.

The continued operation and maintenance of the wind farm is not expected to give rise to any additional landscape or visual effects.

9.4.3.2 Decommissioning

Magnitude of Landscape Change– Decommissioning Phase

The removal of the turbine blades and masts, the cables the substation and associated buildings, and the de-energising of the site will occur during the decommissioning phase. Turbine bases, crane pads, and access tracks, trackside drainage and rehabilitated borrow pits/quarries will remain on site. The overhead line will also be removed. Though the long term uses of the site are not known, it is likely that natural regrowth of previously felled areas will occur. Activities such as turf cutting may continue.

It may be necessary to carry out temporary road widening works along the narrow turbary road between Turbines T31 and T45 to provide safe access to the mobile

crane that will be used to dismantle the turbines. The removal of Barrages 3 and 4 which lie to the east of the Black Road will also take place.

Machinery will be entering and exiting the site during the decommissioning phase which is expected to last approximately 12-24 months,

In the wider landscape, forestry operations and agricultural activities are expected to continue.

The magnitude of landscape change following the decommissioning of the turbines is considered to be Medium. This is described as a *'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.'*

The removal of other element such as the substation and other buildings on site, and therefore are considered to have a Low magnitude of change.

The removal of Barrages 3 and 4 (from stream) will have a Low to Medium magnitude of change, which will be temporary and carried out in a location where forestry and quarrying operations are ongoing.

The removal of the Agannygal substation will result in a Low magnitude of change.

Significance of Landscape Effects– Decommissioning Phase

Measuring the magnitude of change against the sensitivity of the landscape resource the significance of the landscape effects of the decommissioning wind farm can be classified as **Slight to Moderate**. (Level 3-4 out of a possible range of 1 Imperceptible, 2 Not Significant, 3 Slight, 4 Moderate, 5 Significant, 6 Very Significant, 7 Profound).

The movement of the machinery in and out of the site and activities described above and vicinity is likely to cause Temporary, Slight negative Landscape Effects. The removal of the overhead line would be considered Not Significant to Slight, beneficial effect and the removal of the Agannygal tee-in sub-station a Slight, neutral to beneficial effect.

The removal of the turbines and associated buildings and elements on the site of the wind farm is considered a Moderate landscape effect. The quality of the effect is considered to range from Neutral, to Positive, where natural regrowth occurs.

The removal of the wind farm from the landscape will result in a Slight to Moderate change to the character of the wider landscape also.

The removal of the overhead line will result in a Not Significant, beneficial effect.

Magnitude of Visual Change– Decommissioning Phase

During the decommissioning phase, the movement of machinery and materials will result in temporary, adverse visual effects in the immediate vicinity of the site. These will be temporary in nature. The magnitude of change during the decommissioning phase is considered to be Medium to High in the immediate vicinity of the site, and Low in the wider landscape.

This section also assesses the visual effects if the removal of a windfarm from the landscape, resulting in a change in views and to the viewpoints identified above.

Significance of Visual Effect– Decommissioning Phase

Visual effects include temporary visual effects as a result of the operation of machinery to facilitate the removal of the wind farm elements referred to above. These are considered Moderate adverse effects and temporary in nature.

Permanent visual effects resulting from the decommissioning of the project are considered to range from Imperceptible to Slight from the majority of the viewpoints described above, which are at some distance from the wind farm and where the turbines are not a noticeable feature of the view. Viewpoints closer to the turbines such as Viewpoints 7 and 10 experience more pronounced visual effects (Moderate), where the viewer is in close proximity to the turbines and they are a well-known element of the view. None of these are considered significant visual effects.

The quality of the visual effects – whether beneficial, adverse or neutral – varies, and it should be noted that this is somewhat subjective and is also likely to vary depending on the viewer, as noted in Section 9.2.3.1.

The quality of the effect in these views from the Black Road is considered to be beneficial as the view will be simplified and less cluttered. As areas re-vegetate, disturbance following decommissioning will reduce over time. Many views from the wider landscape are likely to be Neutral in effect.

The removal of turbines which have been in place for some time and which may be considered as a landmark in the area, may be considered to be an adverse effect by some viewers. However, in some cases where the removal of the turbines is considered to remove an element of visual clutter and result in a simpler composition of a view, this may be experienced as a beneficial or positive effect. The turbines are a relatively low height by today's standards which lessen the visual effects of their decommissioning.

Furthermore, turbines are not the only element of height introduced to the landscape. The presence of extensive coniferous forestry in the vicinity of the site provides an element of considerable height as well as a sense of enclosure and a change in views experienced in parts the landscape. The coniferous forestry operations in the vicinity of the site are likely to continue.

The removal of other elements such as the substation and other buildings on the windfarm site will not be viewed from the public road, and therefore are considered to have an Imperceptible effect/no effect. The works to remove of Barrages 3 and 4, though set back form the public road, will possibly be visible from a very short section

of the Black Road, and are considered to be Not Significant, short term effects. Over time these areas are likely to re-vegetate.

The overhead line is quite prominent in the immediate vicinity of the site and in sections of the Black Road and the R353. Further south, the line traverses through largely remote and heavily forested areas towards Agannygal substation. The removal of the line would be considered Not Significant to Slight, beneficial effect, where it is in close proximity to the viewer. However it is not visible in the majority of the views described above. The removal of the Agannygal substation would be visible only in the immediate vicinity from local roads, and considered a Slight, beneficial visual effect.

Table 9-10 summarises the likely Decommissioning phase visual effects from viewpoints

Table 9-10 Summary of Decommissioning phase visual effects on viewpoints

No.	Viewpoint Location	Visual Receptor Sensitivity	Magnitude of Change	Significance of Effect
1	View from the M6 motorway at Clougharevaun, near Kiltullagh	Low.	Negligible	Imperceptible, Neutral
2	View from the N18 national route at Caherpeak East, south of Kilcolgan.	Medium	Low	Not Significant , neutral.
3	View from the shore of Lough Rea.	High	Medium	Slight-Moderate,
4	View from the N65 road at Garryadd,	Medium	Negligible	Imperceptible, neutral.
5	View from the local road at Curhoor, south of Kileenadeema.	Low-Medium	Medium	Slight, neutral
6	View from the N66 in the townland of Cuilmore, near Peterswell.	Low-Medium	Low	Slight, neutral
7	View from the Black Road at Coppanagh.	Medium	Medium-High	Slight-Moderate-neutral to beneficial

8	View from the Regional Road R351 at Derrygarriff.	Low-Medium	Low	Imperceptible neutral
9	Viewpoint 9 – View from the Regional Road R458 on the northern outskirts of Gort.	Low-Medium	Low	Not Significant, neutral
10	6.2.10 Viewpoint 10 – View from the Black Road at Derrybrien North.	Medium	High	Moderate, neutral
11	View from the R353 at Knockmoyle west.	Medium	Low	Slight, neutral.
12	View from the harbour at Terryglass, Co. Tipperary.	High	Low	Not Significant neutral
13	View from the local road at Loughatorick North	Medium	Low- Medium	Not Significant, neutral
14	View from the local road and East Clare Way at Corlea Beg	High	Low	Slight neutral
15	View from the R461 between Feakle and Gort at Doorus East,	Medium-High	Low	Slight, neutral
16	View from the M18 motorway between Gort and Crusheen at Monreagh.	Low	Negligible	Imperceptible, neutral.

9.5 Cumulative Impacts

Cumulative impacts are defined by the GLVIA (2013) and guidance on cumulative assessment of windfarms SNH (2012) as the additional changes caused by a proposed development in conjunction with other similar developments. Though the SNH guidance (2012) focuses on cumulative effects of other wind farms, the GLVIA

notes that the assessment can include other types of developments to give a more complete picture of the likely significant cumulative effects.

In this case, cumulative effects are defined as the additional effect of the project in conjunction with other existing and/or approved developments, both windfarm and non-windfarm developments.

A list of Cumulative projects is listed in Chapter 2, and all of these projects were considered in terms of cumulative landscape and visual effects. One of the most relevant projects from an LVIA perspective includes the nearby 9 turbine wind farm, (Sonnagh Old), a 9 turbine wind farm, commissioned in 2004, approximately 3.5 kilometres northwest of the Derrybrien turbines. The construction of Sonnagh Old coincided with the construction of the Derrybrien wind farm project in 2003-05.

A Cumulative ZTV Map is included in Appendix 9-2

The assessment also considers some projects which can be described as land use activities which were (and are) ongoing in the immediate vicinity of the site, including the extensive existing coniferous forestry operations in the vicinity of the site, and small scale peat extraction which has been carried out to the east of the site. These activities have also been considered in the description of the baseline environment in Section 9.3.

There are other relevant developments, which can be described as existing infrastructure, also in existence prior to the Derrybrien wind farm project construction, which include a number of overhead transmission lines. These include the existing Moneypoint-Woodlands 400kV overhead transmission line which is located approximately 5 kilometres south east of the Derrybrien turbines, and approximately 3 kilometres northwest of the Agannygal tee- in substation. The other line is the existing Ennis-Shannonbridge 110kv line which lies further south of the Moneypoint-Woodlands line, and was split into two circuits following the construction of the Agannygal substation.. These developments are also included in the baseline description in Section 9.3. A small quarry may have been present just off the R353 south east of the site.

A subsequent set of projects of an infrastructural nature were carried out after the construction of the Derrybrien Wind farm project. Those in the vicinity of the site included a sand quarry at Cloghvoley, while in the wider landscape, the M18 motorway section between Gort and Tuam was completed, as well as a power station at Tynagh, Co. Galway approximately 14.5 kilometres northeast of the site and associated grid connection.

The remaining cumulative projects listed fall into a category of projects which are either outside the study area as indicated on the ZTV maps, or of such a nature that they are not considered to give rise to cumulative landscape and visual effects. These include the pre-existing Gort Regional Water supply scheme, as well as the Local OPW Flood Relief Scheme Gort, flood relief works at Kiltartan, the temporary flood relief works at Kinvara and the proposed Gort Lowlands flood relief scheme.

Figure 2.7 in Chapter 2 illustrates the location of these projects

9.5.1 Cumulative impacts which have occurred

Magnitude of Cumulative Landscape Change

The magnitude of change to the landscape resulting from Derrybrien wind farm and all associated elements, in conjunction with the other projects is described at various scales. At a local level, on the site, an area of disturbed peat was identified in April 2020, adjacent to a turbary plot, at the eastern side of the wind farm. This area of disturbed peat is approximately 0.25 ha. The area of turf cutting is considerably larger at approximately 67ha..

Within 5-7 kilometres of the site, ongoing, extensive forestry and turf cutting operations , as well as larger infrastructural elements including the Sonnagh Old windfarm, and the existing overhead lines to the south, are considered to have contributed to a Medium magnitude of change. The Keelderry wind farm was not built and so is not considered further in this section.

Off-site afforestation is referred to in Chapter 2, and this was carried out in Counties Tipperary and Roscommon. These therefore do not give rise to Cumulative landscape effects.

The forestry and overhead lines were already part of the pre-development landscape baseline c. 1998, and the Derrybrien wind farm project and the Sonnagh Old turbines were introduced in an area where there were some elements (i.e. electricity transmission lines and intensive forestry) which can be described as large scale and industrial in nature already evident in the working rural upland landscape. The Agannygal substation was located along the route of an existing 110kV line and in an area where the two transmission lines are evident.

On a wider scale, further developments (in addition to the wind farm) included the M18 motorway, the presence of a limestone quarry at Ballynakill to the east, and the Tynagh power station are located further from the site. These lie within 9 and 13 kilometres from the site and though these increase the evidence of human activity in the landscape, the effects are more localised and do not result in a high magnitude of change to the wider landscape character. While the motorway increased accessibility to the wider landscape, it did not affect the relatively remote nature of the Derrybrien area. The magnitude of change to the wider landscape is considered Low to Medium.

Significance of Cumulative Landscape Effect

As stated in Section 9.4.1, the sensitivity of the landscape is considered Low to Medium. The cumulative landscape effect which has occurred as a result of the Derrybrien windfarm and its associated elements, in conjunction with the other developments referred to above, is considered to have a **Slight to Moderate Cumulative effect** on the character of the landscape. The presence of the overhead lines had already introduced elements of infrastructure to the landscape, and the

forestry operations have been ongoing in the area, and are on a large scale. Small scale quarries and localised turf cutting are other resource based activities.

The 400kV and 100kv lines are not in close proximity to the turbines but they are an existing element of the electricity network. The Derrybrien wind farm project (along with the Sonnagh Old turbines) has added a larger scale element of wind energy to a working landscape which is relatively remote, but the character of the areas remains defined by the undulating topography, and the extensive conifer plantations which provide a sense of enclosure, contrasting with the d occasional open areas of moorland.

Magnitude of Cumulative Visual Change

It should be noted that some of the cumulative projects listed above and in Chapter 2, have not given rise to cumulative visual effects. These include the flood relief works and Gort water supply scheme, as well as the Ballynakill quarry which has very localised and minimal visual effects. Off-site afforestation is referred to in Chapter 2, and this was carried out in Counties Tipperary and Roscommon. These therefore do not give rise to Cumulative visual effects.

The Tynagh power station also gives rise to very localised visual effects. The turf cutting which has been observed to take place to the east of the windfarm site appears to have been small in scale and by its nature, is not visually obtrusive, as can be the case when large scale industrial extraction occurs. These elements noted above are likely to have resulted in a Negligible magnitude of change.

Other elements are more relevant when discussing visual effects. The cumulative effect of the Derrybrien turbines and associated elements, in conjunction with the Sonnagh Old windfarm and existing 400kV and 100kV transmission lines and the continuing forestry operations would have varied depending on the viewpoint. However the most evident of these elements in the viewpoints, are the Sonnagh Old turbines. The forestry operations were, and still are, ongoing in the landscape, but likely to change on a cyclical basis. The most dramatic change would have resulted from areas of clear felling. The 400kV transmission line is not a feature evident in the viewpoints. The visual effect of the Agannygal substation and the transmission lines is evident in the immediate vicinity of the substation and not on a wider landscape scale.

The Sonnagh Old turbines are visible from many of the more distant viewpoints, to the north, east and west of the site. Guidance (GLVIA 2013) refers to different types of cumulative effects, namely combined and sequential visibility. Combined visibility, where the viewer sees the other development in the same view as the Derrybrien Wind Farm project, is the most common in this case.

Viewpoints closer to the site (7,10) do not have visibility of the Sonnagh Old turbines, so views are generally from some distance. Viewpoints to the south (11,13,14,15, 16) do not have visibility of the Sonnagh Old turbines. The magnitude of change therefore varies from No change, to a Low change in many cases. Viewpoints such as Lough Rea (3) would be considered a Medium magnitude of change. The two

windfarms appear as distinct clusters, and are distinctive. They do not appear 'stacked' from any of the viewpoints and the scale and height is comparable.

The Cumulative ZTV map included in Appendix 9-2 illustrated that theoretical visibility of both windfarms is mainly in areas to the east, west and north of both windfarms (shaded green.) South of the Derrybrien turbines, there are almost no areas with visibility of the Sonnagh Old turbines as well as the Derrybrien turbines. The photomontages also illustrate the actual visibility of both windfarms. Theoretical visibility of both windfarms is shown north of the Derrybrien turbines, but this is a remote are with sparse population and few roads.

Significance of Cumulative Visual Effect

The main elements which are considered to contribute in terms of cumulative effects include the Sonnagh Old turbines, overhead lines, Agannygal power station and the ongoing forestry operations. However it should be noted that the presence of the forestry activities and the overhead lines were part of the baseline landscape before the introduction of the Derrybrien turbines. Other activities such as turf cutting were also considered.

The significance of the visual effect varies between the 16 viewpoints, and it should be noted that in many of the viewpoints, the Sonnagh Old turbines are not visible.

Cumulative Visual effects range from No effects, where the Sonnagh Old turbines are not visible, (7 8,10,11,13,14,15,) to Slight and Moderate. A Moderate effect would include Viewpoint 3 Lough Rea. The visual effect is considered to be neutral in most cases.

Cumulative Visual effects as a result of the visibility of the overhead line and tree felling in the vicinity of the Agannygal substation are localised and considered Slight and adverse.

9.5.2 Cumulative impacts which are occurring

Along with the continued operation of the wind farm, activities such as tree felling in the vicinity of the site occur from time to time but is already ongoing on a cyclical basis and has been assessed above.

9.5.3 Cumulative impacts which are likely to occur

Magnitude of Cumulative Landscape Change

In the vicinity of the site, the coniferous forestry operations are expected to continue into the future. Detailed forestry plans are not available; however the cyclical felling and replanting is likely to continue to occur in the vicinity of the site. Chapter 2 notes that due to its age profile, much of the forestry estate has been felled over the last number of years, and will over the next decade, require felling.

Developments such as the extension to the Ballynakill quarry are not expected to result in cumulative visual effects, the visual effects being relatively localised and the distance from the windfarm renders any changes to be Low.

During the decommissioning phase, the turbines and associated infrastructure will be removed. The removal of the Derrybrien turbines is likely to result in the Sonnagh Old turbines being viewed as the only cluster of wind turbines in the vicinity, resulting in a Medium magnitude of change and a change to the landscape character. As Sonnagh Old windfarm was built around the same time as Derrybrien it may also be decommissioned at around the same time. Should this be the case, there would then be no turbines in the vicinity. This would result in a High magnitude of change.

Significance of Cumulative Landscape Effect

Should the Sonnagh Old Turbines remain as the only turbines in the area, and the Derrybrien site is allowed to re-vegetate, this would result in a Slight, neutral effect. Though the site would return to a vegetated site, the wind energy generation capacity would be lost. Should the Derrybrien and the Sonnagh Old turbines be removed, this would have a Moderate to Significant landscape effect. The quality of the effect in both cases is considered to be neutral. This could also be seen as the removal of recognisable elements, or elements which are now considered characteristic.

Magnitude of Cumulative Visual Change

In the vicinity of the site, the coniferous forestry operations are expected to continue into the future. Detailed forestry plans are not available, however the cyclical felling and replanted is likely to continue to occur in the vicinity of the site.

The removal of the Derrybrien turbines is likely to result in the Sonnagh Old turbines being viewed as the only cluster of wind turbines in the vicinity. This will affect the views, especially views to the north, east and west for the site, where the two wind farms are often visible in the same view. Viewpoints 1,2,3,4,5,6,9,12, 16 will change, and this change will vary between an Imperceptible to Slight change in some cases, where the views are distant, such as in Viewpoint 12 from Terryglass, and Viewpoint 16 (M18 motorway). The change will be more noticeable from certain viewpoints where both windfarms are clearly visible (including Viewpoint 3 Loughrea) and the change here is likely to be Moderate.

Should the Sonnagh Old turbines also be removed, the Decommissioning phase effects would be slightly more pronounce but not significant. .

Significance of Cumulative Visual Effect

The Cumulative visual effect of the removal of the turbines will vary depending on the viewpoint. This is likely to only affect views from some areas, and Viewpoints 1,2,3,4,5,6,9,12, 16. Visual effects range from Imperceptible or Not Significant (Viewpoints 1,2,12,16) to Slight (Viewpoints 3,5,6,9).

9.6 Remedial (Mitigation) Measures and Monitoring

9.6.1 Remedial (Mitigation) Measures and Monitoring: Significant Effects

No Mitigation measures have, are, or will be required from a landscape or visual perspective.

9.6.2 Mitigation Measures: Non-significant effects

Several mitigation measures for non-significant effects were carried out during the construction phase. These include allowing areas of disturbed ground such as areas around the barrages and the peat repositories to regenerate.

No other mitigation measures are or will be required from a landscape or visual perspective.

Following decommissioning, disturbed areas will be allowed to re-vegetate naturally.

9.7 Residual Impacts

Residual effects are not relevant, as no mitigation measures are proposed.

Summary

The effects of the Derrybrien Wind Farm Project at the construction, operational and decommissioning phases are outlined above in Section 9.4. The Project is (2020) now part of the working rural upland landscape.

Though the existing Derrybrien Wind Farm is located in the northern part of the Slieve Aughty Mountains and the uplands are visible from a very wide area of the surrounding plains, the uplands generally feature as a broad, low, round-topped landform on the horizon, with limited visual presence. The wind farm can also be seen over a wide area, however the relatively small scale and low height of the turbines and the nature of the landform result in this being perceived as an element in the landscape, along with the coniferous forestry, which is in no way dominant. The presence of a forest-covered landscape around the west, north and east of the site reduces visibility and visual receptors in close proximity to the turbines.

The landscape and visual effects for the construction, operational phase and the decommissioning of the Derrybrien wind farm project have been considered as set out in Section 9.4 above. In terms of landscape and visual effects associated with construction phase activities, these have been assessed as temporary effects.

The landscape and visual effects of the peat slide which occurred in 2003 are not now evident in the landscape or from the public roads. Vegetation has grown considerably over the intervening period, as shown in Plates 8 and 10 in Section 9.3.

The continuing operational phase, from 2020 to decommissioning, will involve very little change. Any changes are likely to be minor in nature to date and the continued operation of the wind farm will result in almost no change in terms of both landscape

and visual effects. Any changes are likely to be perceived or experienced only in very close proximity to the site and effects are not significant.

The decommissioning of the wind farm will result in some landscape and visual effects, though these are not considered to be significant. These changes will be most pronounced in close proximity to the site. The removal of turbines may be seen as part of the ongoing change in the working rural landscape which also felling and replanting of coniferous forestry. The main changes will be the visual effects resulting from the turbine removal. Again these will be more noticeable at the local scale, but there will also be some element of change to the wider landscape as a wind farm is removed from a landscape.

9.8 References

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