

12 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

12.1 INTRODUCTION

This report, prepared by Cunnane Stratton Reynolds, identifies and discusses the landscape and visual constraints, as well as likely landscape and visual effects in relation to the proposed Drumnahough Wind Farm project (The Proposed Development), near Letterkenny Co. Donegal. A full description of the proposed development, development lands and all associated project elements is provided in Chapter 2 of this EIAR. The Landscape and Visual effects from the overall project have been assessed of which the proposed development forms part.

12.1.1 Scope Of Assessment

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

The study was informed by a desktop study and a survey of the site and receiving environment in May 2020 as well as study of the maps and visualisations of the proposed development (photomontage photography captured in September/October 2019 and March 2020). The assessment uses the methodology as set out in Section 12.1.3 below.

The proposed development consists of twelve (12) turbines with a maximum turbine tip height of 167.5m. For the purposes of the LVIA and visualisations, a hub height of 95m is used. The hub height may be lower depending on the final turbine choice. The hub height of 95m used for the visualisations represents the tallest hub height which can be considered the worst case scenario.

12.1.2 Study Area

The Zone of Theoretical Visibility (ZTV) maps (see **Figures 12-8 and 12-9** reproduced in this chapter and included in full in EIAR Volume 4) extend to a radius of 30 kilometres, so the extent over which the turbines are theoretically visible are represented for this distance on these maps. This includes a limited number of areas which have theoretical visibility from Northern Ireland which are identified and discussed in Section 12.3.3. However the assessment of landscape and visual effects is concentrated on an area approximately 20 kilometres radius from the proposed turbines. The Department of Environment, Heritage, and Local Government (DoEHLG) Wind Energy Guidelines (2006) and Department of Housing, Planning and Local Consultation Draft (2019) recommend that a ZTV radius of 20 kilometres is satisfactory for turbine heights of 100m or more.

12.1.2.1 Methodology

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

its own right - a shared resource providing a complex range of cultural, environmental and economic benefits to individuals and society.

The Guidelines for Landscape and Visual Impact Assessment (3RD Edition, Landscape Institute/IEEMA 2013) hereafter referred to as the GLVIA, notes that as a cultural resource, the landscape functions as the setting for our day-to-day lives, also providing opportunities for recreation and aesthetic enjoyment and inspiration. It contributes to the sense of place experienced by individuals and communities and provides a link to the past as a record of historic socio-economic and environmental conditions. As an environmental resource, the landscape provides habitat for fauna and flora. It receives, stores, conveys and cleans water, and vegetation in the landscape stores carbon and produces oxygen. As an economic resource, the landscape provides the raw materials and space for the production of food, materials (e.g. timber, aggregates) and energy (e.g. carbon-based fuels, wind, solar), living space and for recreation and tourism activities.

Forces for Landscape Change

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

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

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

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

Guidance

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

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

- *Guidelines for Landscape and Visual Impact Assessment*, 3rd Edition (Landscape Institute and the Institute of Environmental Management and Assessment, 2013).
- *Guidelines for Information to be Contained in Environmental Impact Assessment Reports, Draft* (EPA, 2017)
- *Wind Energy Development Guidelines* (Department of the Environment, Heritage and Local Government 2006)
- *Wind Energy Development Guidelines Public Consultation Draft* (Department of Housing, Planning and Local Government 2019)
- *Guide to Visual Representation of Wind Farms* (Scottish Natural Heritage, 2017)
- *Assessing the Cumulative Impact of Onshore Wind Energy Development* (Scottish Natural Heritage 2012).
- Donegal County Development Plan 2018-2024 (Donegal County Council, June 2018)
- *Forestry and the Landscape Guidelines*, (Forest Service, 2000d)

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

Use of the Term 'Effect' vs 'Impact'

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

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

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

12.1.2.2 Assessment of both Landscape and Visual Effects

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

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

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

The assessment of landscape and visual effects included a desktop study, review of the proposed development drawings and visualisations, and site visits were carried out in May and August 2020.

12.1.2.3 Assessment Criteria

The assessment criteria listed below and included in **Tables 12-1 to 12-5** were devised by Cunnane Stratton Reynolds (landscape consultants) based on the GLVIA and on professional experience.

Methodology for Landscape Assessment

In Section 12.3.2 of this report the landscape effects of the development are assessed. Landscape impact assessment considers the likely nature and scale of changes to the main landscape elements and characteristics, and the consequential effect on landscape character. Existing trends of change in the landscape are taken into account. The potential effect is assessed based on measurement of the landscape sensitivity against the magnitude of change which would result from the development.

Sensitivity of the Landscape Resource

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

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

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

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

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

For the purpose of assessment, five categories (devised by Cunnane Stratton Reynolds, are used to classify the landscape sensitivity of the receiving environment.

Table 12-1: Categories of Landscape Sensitivity

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

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

Table 12-2: Magnitude of Landscape Change

Sensitivity	Description
Very High	Change that is large in extent, resulting in the loss of or major alteration to key elements, features or characteristics of the landscape (i.e. landscape receptors), and/or introduction of large elements considered totally uncharacteristic in the context. Such development results in fundamental change in the character of the landscape with loss of landscape quality and perceived value.
High	Change that is moderate to large in extent, resulting in major alteration or compromise of important landscape receptors, and/or introduction of large elements considered uncharacteristic in the context. Such development results in change to the character of the landscape with loss of landscape quality and perceived value.
Medium	Change that is moderate in extent, resulting in partial loss or alteration of landscape receptors, and/or introduction of elements that may be prominent but not necessarily substantially uncharacteristic in the context. Such development results in change to the character of the landscape but not necessarily reduction in landscape quality and perceived value.
Low	Change that is moderate or limited in scale, resulting in minor alteration of landscape receptors, and/or introduction of elements that are not uncharacteristic in the context. Such development results in minor change to the character of the landscape and no reduction in landscape quality and perceived value.
Negligible	Change that is limited in scale, resulting in no alteration to landscape receptors, and/or introduction of elements that are characteristic of the context. Such development results in no change to the landscape character, quality or perceived value.

Significance of Effects

In order to classify the significance of effects, the predicted magnitude of change is measured against the sensitivity of the landscape/viewpoint, using the following guide, from the EPA Draft Guidance (2017). There are seven classifications of significance, namely: (1) imperceptible, (2) not significant, (3) slight, (4) moderate, (5) significant, (6) very significant, (7) profound.

Table 12-3: Significance of Effects

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

It is important to note that the matrix above is used as a guide only and in some cases the assessment departs from the matrix above. 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 beneficial, neutral or negative/adverse. Development has the potential to improve the environment as well as damage it.

Methodology for Visual Assessment

In Section 12.3.3 of this report the visual effects of the development are assessed. Visual assessment considers the value of the views, and the visual susceptibility of the visual receptors (groups of people) and the changes to the composition and character of views. The assessment is made for a number of viewpoints selected (17) to represent the range of visual receptors in the receiving environment. The significance of the visual effects experienced at these locations is assessed by measuring the visual receptor sensitivity against the magnitude of change to the view resulting from the development.

Sensitivity of the Viewpoint/Visual Receptor

Visual receptor sensitivity is a function of two main considerations:

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

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

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

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

Visual receptor susceptibility and value of the viewpoints which are assessed, are discussed further in Section 12.3.3. For the purpose of assessment, five categories are used to classify a viewpoint's sensitivity:

Table 12-4: Visual Receptor Sensitivity

Sensitivity	Description
Very High	Iconic viewpoints - towards or from a landscape feature or area - that are recognised in policy or otherwise designated as being of national value. The composition, character and quality of the view are such that its capacity for accommodating change in the form of development is very low. The principle management objective for the view is its protection from change.
High	Viewpoints that that are recognised in policy or otherwise designated as being of value, or viewpoints that are highly valued by people that experience them regularly (such as views from houses or outdoor recreation features focussed on the landscape). The composition, character and quality of the view may be such that its capacity for accommodating compositional change in the form of development may or may not be low. The principle management objective for the view is its protection from change that reduces visual amenity.
Medium	Viewpoints representing people travelling through or past the affected landscape in cars or on public transport, i.e. viewing but not focused on the landscape which is regarded as moderately scenic. The views are generally not designated, but which include panoramic views or views judged to be of some scenic quality, which demonstrate some sense of naturalness, tranquillity or some rare element in the view.
Low	Viewpoints reflecting people involved in activities not focused on the landscape e.g. people at their place of work or engaged in similar activities such as shopping, or on heavily trafficked routes etc. The view may present an attractive backdrop to these activities but is not regarded as particularly scenic or an important element of these activities.
Negligible	Viewpoints reflecting people involved in activities not focused on the landscape e.g. people at their place of work or engaged in similar activities such as shopping where the view has no relevance or is of poor quality.

Magnitude of Change to the View

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

Five categories are used to classify magnitude of change to a view. Refer to **Table 12-5**:

Table 12-5: Magnitude of Visual Change

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

Significance of Visual Effects

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

Visual effects are also classified as beneficial, neutral or negative. This is an inherently subjective exercise. Visual receptors' attitudes to development of various types varies and this affects their perception of the visual effects of development. The matrix outlined in **Table 12.3** is also relevant to the significance of visual effects.

Quality and Timescale

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

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

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

- Temporary – Lasting for one year or less;
- Short Term – Lasting one to seven years;

- Medium Term – Lasting seven to fifteen years;
- Long Term – Lasting fifteen years to sixty years;
- Permanent – Lasting over sixty years.

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

12.1.2.4 Site History and Consultation with Planning Authority

Planning permission was previously granted at the site for fifteen (15) No. turbines with maximum hub height of 85m, maximum blade length of 50m and maximum base to blade tip of 135m.

The previously permitted development was granted planning by Donegal County Council in March 2009 (08/50687). An extension of permission duration was also granted by Donegal County Council (Planning Ref. 13/51609) in respect of the permitted development. The permission was to cease to have effect on 29th March 2019. Due to grid availability issues at the time, the previously consented project was unable to be progressed. This permission subsequently expired.

Two meetings were held with An Bórd Pleanála (24 October 2019 and 15 January 2020) and one meeting with Donegal County Council (6 November 2019). Issues discussed related to viewpoint selection, and Donegal County Council reviewed the proposed viewpoints and requested three additional viewpoints which were included. In the meetings with An Bórd Pleanála the importance of including a cumulative assessment was noted, and the assessment of visual effects from a community perspective. The Board also recommended the assessment of a worst case scenario in relation to the possibility of a re-powering of the adjacent Cark windfarm.

12.1.2.5 Zone of Theoretical Visibility (ZTV) Maps

The ZTV Maps produced and included in EIAR Volume 4) and reproduced in the chapter (see **Figures 12-8 to 12-11**) indicate theoretical visibility and are based on topographical information (the data supplied uses contours at 10 metre intervals) to indicate areas which may have views of the turbines. It is important to note that these maps, though useful, have limitations as they are based on topography alone, and represent a bare-earth scenario, that is, a landscape without any structures, buildings, or vegetation. In reality many of these elements combine to screen our views of the landscape, so the ZTV maps represent a greater extent of visibility than in reality.

It is important to note the limitations of ZTV maps which include those identified by Scottish Natural Heritage (*Guide to Visual Representation of Wind Farms* SNH, 2017):

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

ZTV maps are useful to determine potential visual receptors and viewpoints, as:

- They show areas which may, and areas which will not have any visibility of the proposed development.
- They also show the numbers of turbines likely to be visible, the *pattern and extent* of the visibility, and how much of the turbine is potentially visible.
- However as they do not take into account the presence of vegetation or structures in the landscape, and therefore areas showing theoretical visibility on the ZTV maps will not always have visibility in reality.

Several ZTV maps were produced:

- Hub Height ZTV, which shows the areas where the turbine hubs or nacelles, are visible.
- Tip Height ZTV map shows all areas where the turbine up to the blade tip, is visible. Both are used in the assessment to describe the extent and pattern of visibility.
- Two Cumulative ZTV Maps were produced. One (**Figure 12.10**) shows the visibility of the proposed Drumnahough turbines along with other permitted and proposed turbines while **Figure 12.11** shows the additional visibility as a result of the Drumnahough turbines.

These maps are fully described in Section 12.3.3.1 and illustrated in **Figures 12-8, 12-9, 12-10 and 12-11** reproduced in this chapter and included at full scale in EIAR Volume 4.

12.1.2.6 Visualisations/Photomontages

A set of 17 No. photomontages were produced from carefully selected viewpoints, to assist in assessing the visual effects, from various locations throughout the study area. The initial viewpoint locations were reviewed by Donegal County Council, and following review, three additional locations were recommended. These are included and the locations are discussed in more detail in Section 12.3.3.2

These photomontages were produced by Innovision and are included in the Photomontage Booklet in EIAR Volume 4.

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

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

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

12.1.3 Statement on Limitations and Difficulties Encountered

Limitations were encountered due to the restrictions on working as a result of the Covid-19 measures and restrictions which came into effect on March 28 until May 18, 2020. The site visit took place at a later date than intended, on May 19, 2020, and a further site was carried out in August 2020. Weather was variable on the day of the first site visit, with some viewpoints visited when low cloud was present, and visibility of the landscape, including existing turbines, was restricted. A combination of low cloud and clearer weather was experienced during the second site visit.

12.2 RECEIVING ENVIRONMENT

The receiving environment is described in policy terms, and thereafter in terms of landscape and visual character. The site of the proposed development is described, as is the wider landscape. The study area is shown in **Figure 12-8** in Section 12.3.3 and extends to 30 kilometres from the proposed turbines.

12.2.1 Policy Context

A pre-planning meeting was held with Donegal County Council on 6th November 2019 as described in Chapter 2. Items discussed at the pre-planning meeting included an overview of the proposed project and application history of previously consented project at this site, the policy context for the proposed development including specific Donegal County Development Plan 2018-2024 policy, site layout and the design process. The proposals for landscape assessments at the site were also discussed at this meeting, with a request from DCC to include a number of additional locations for photomontages in the EIAR assessments, which have subsequently been included as outlined in Volume 4.)

12.2.1.1 Donegal County Development Plan 2018-2024

Wind Energy Policy

It is noted that County Donegal Development Plan 2018-2024 wind energy map showed the location of the proposed development site to be *acceptable for augmentation of/improvement to existing windfarms*. However, this map and wind energy standards have been removed by order of high court on the 5th of November 2018, in proceedings between Planree Limited (Applicant) and Donegal County Council (Respondent) Record Number 2018/533JR. The Development plan should be read in light of the order pending and any possible further variation of the same. At the time of completing this report, Donegal County Council did not have an active wind energy policy as part of the County Development Plan.

Landscape Designations

The Donegal County Development Plan (hereafter referred to as the Plan) includes policies and objectives relating to landscape as well as protected views. Landscapes designations relate to landscape value as identified in the in the Development Plan range from Medium (MSA), High (HSA) to Especially High Areas of Scenic Amenity (EHSA). The Plan notes that there are no landscapes in Co. Donegal described as Low value.

The landscape designations are defined as follows:

Areas of Especially High Scenic Amenity (EHSA): *Areas of Especially High Scenic Amenity are sublime natural landscapes of the highest quality that are synonymous with the identity of County Donegal. These areas have extremely limited capacity to assimilate additional development.*

Areas of High Scenic Amenity (HSA): *Areas of High Scenic Amenity are landscapes of significant aesthetic, cultural, heritage and environmental quality that are unique to their locality and are a fundamental element of the landscape and identity of County Donegal. These areas have the capacity to absorb sensitively located development of scale, design and use that will enable assimilation into the receiving landscape and which does not detract from the quality of the landscape, subject to compliance with all other objectives and policies of the plan.*

Areas of Moderate Scenic Amenity (MSA)

Areas of Moderate Scenic Amenity are primarily landscapes outside Local Area Plan Boundaries and Settlement framework boundaries that have a unique, rural and generally agricultural quality. These areas have the capacity to absorb additional development that is suitably located, sited and designed subject to compliance with all other objectives and policies of the Plan.

The Plan notes that within these categories and along the interface between the designations there may be areas that do not fully meet the definition for the description. It notes that such anomalies will be considered individually. Relevant objectives in the Development Plan are as follows:

NH-P-7: *Within areas of 'High Scenic Amenity' (HSA) and 'Moderate Scenic Amenity' (MSA) as identified on Map 7.1.1: 'Scenic Amenity', and subject to the other objectives and policies of this Plan, it is the policy of the Council to facilitate development of a nature, location and scale that allows the development to integrate within and reflect the character and amenity designation of the landscape.*

NH-P-8: *It is the policy of the Council to safeguard the scenic context, cultural landscape significance, and recreational and environmental amenities of the County's coastline from inappropriate development.*

NH-P-9: *It is the policy of the Council to manage the local landscape and natural environment, including the seascape, by ensuring any new developments do not detrimentally impact on the character, integrity, distinctiveness or scenic value of the area.*

NH-P-13: *It is a policy of the Council to protect, conserve and manage landscapes having regard to the nature of the proposed development and the degree to which it can be accommodated into the receiving landscape. In this regard the proposal must be considered in the context of the landscape classifications, and views and prospects contained within this Plan and as illustrated on Map 7.1.1: 'Scenic Amenity'.*

NH-P-14: It is a policy of the Council to protect the character of the following approach roads to Glenveagh National Park:

- Glendowan to Doochary Road.
- Dunlewey to Termon Road.
- Churchill to Termon/Dunlewey Road.
- Muckish Gap to Cabiber Bridge.

NH-P-15: It is a policy of the Council to safeguard prominent skylines and ridgelines from inappropriate development.

The site of the proposed development is designated as an area of HSA, with a small area of EHSA on the land adjacent to the site to the south. This is separated from the site by the Elatagh River. These areas are shown in **Figure 12-1** below.

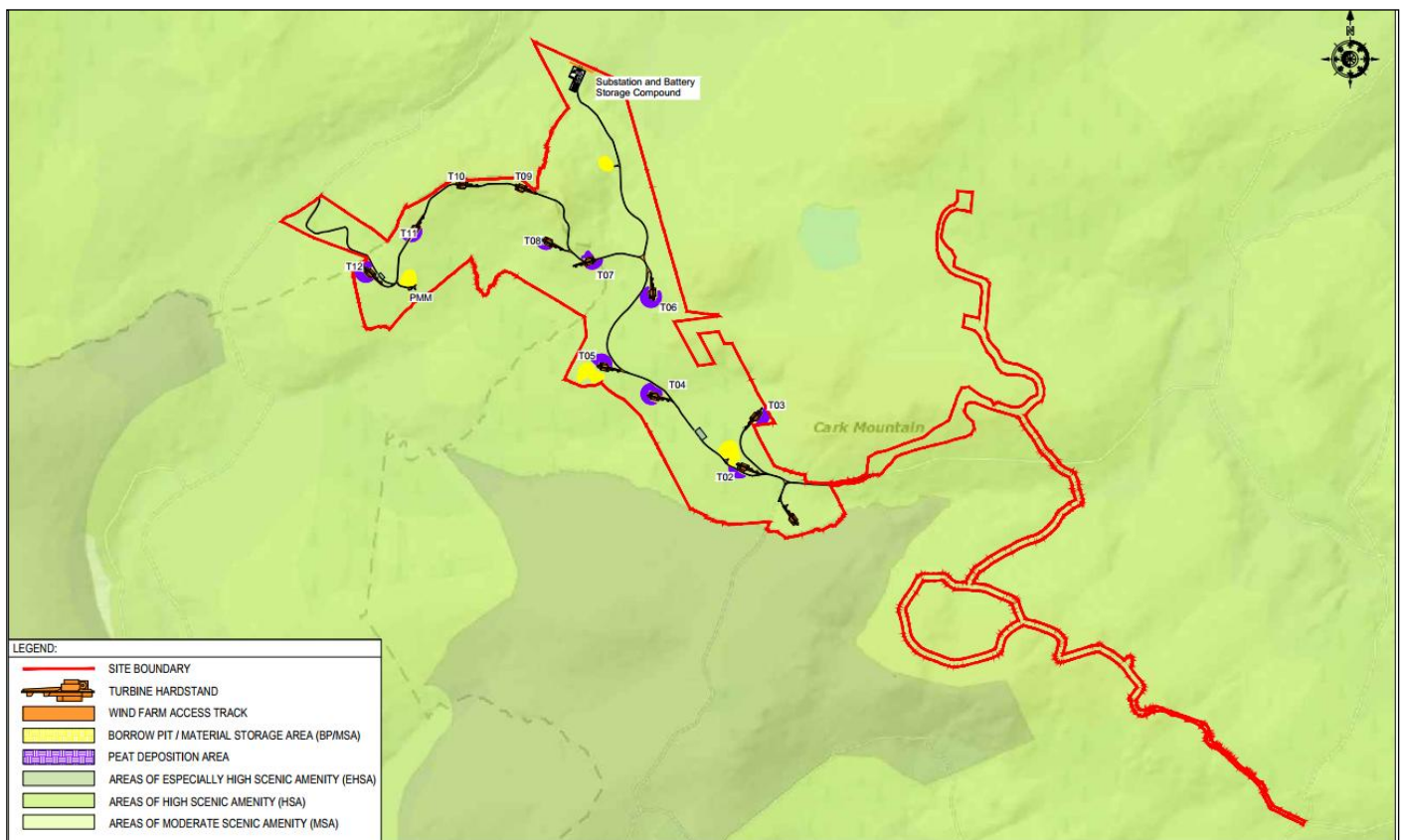


Figure 12-1: Scenic Amenity Map (with site)

Views and Prospects

Map 7.1.1 of the Donegal County Development Plan 2018-2024 illustrates the views and prospects within the county. (Refer to **Figure 12.2**).

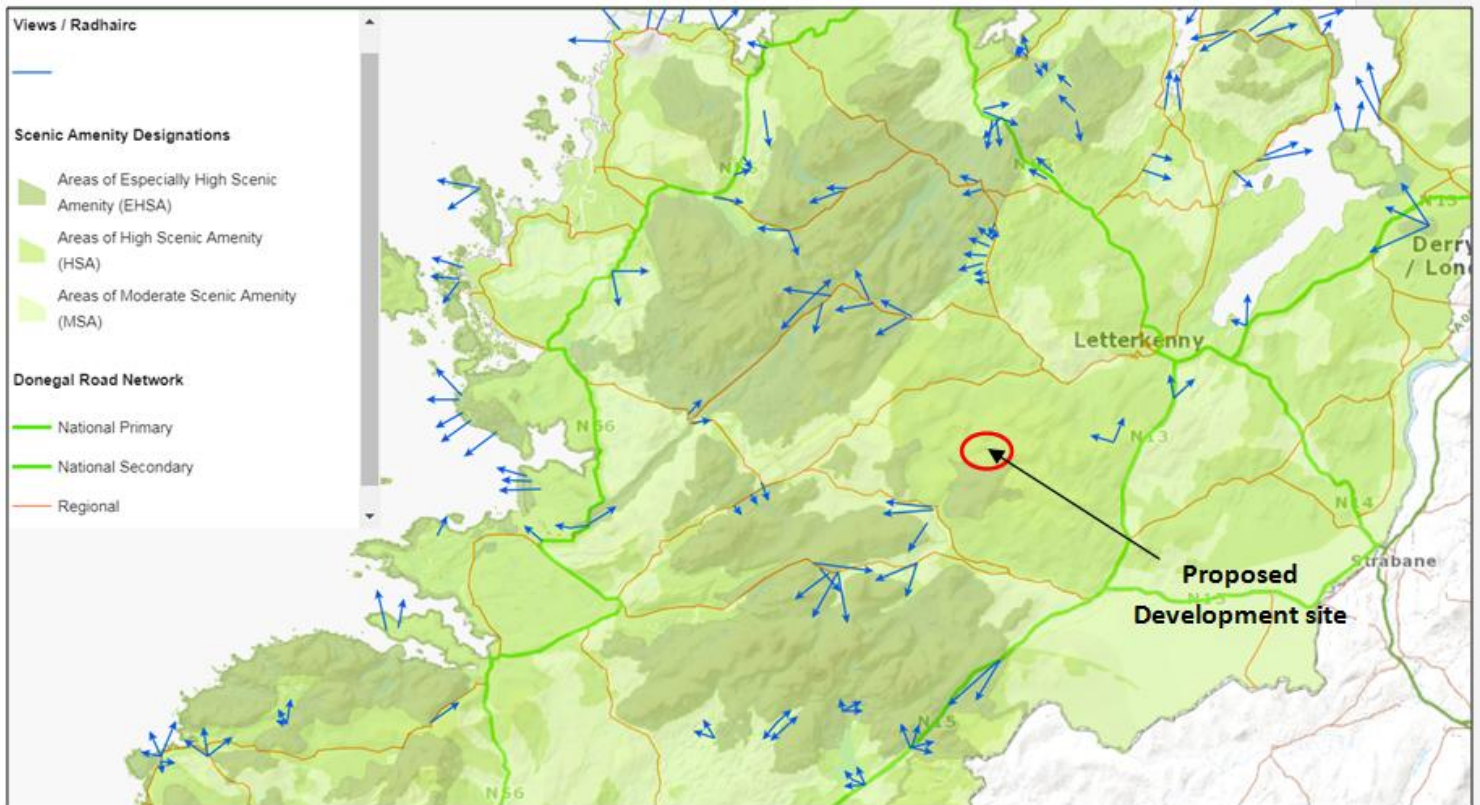


Figure 12-2: Scenic Amenity - Views and Prospects
 Source: extract from Map 7.1.1 Donegal County Council

The Development Plan Scenic Amenity Map as shown in **Figure 12-2** above, indicates that the majority of protected views are not directed towards the site of the proposed development, but towards the west, and are often correlated with views towards areas of EHSA, as shown in the map. One protected view is indicated to the east of the proposed development, but in a north/northwest direction, on a local road between Dromkeen and Letterkenny. One other view was identified from An Duchoraidh, to the south west of the site. Neither view is within the ZTV (Tip Height) of the proposed development, so the development will not affect either of these views.

NH-P-17: It is a policy of the Council to seek to preserve the views and prospects of special amenity value and interest, in particular, views between public roads and the sea, lakes and rivers. In this regard, development proposals situated on lands between the road and the sea, lakes or rivers shall be considered on the basis of the following criteria:

- Importance value of the view in question.
- Whether the integrity of the view has been affected to date by existing development.
- Whether the development would intrude significantly on the view.
- Whether the development would materially alter the view.

In operating the policy, a reasonable and balanced approach shall be implemented so as to ensure that the policy does not act as a blanket ban on developments between the road and the sea, lakes and rivers.

Glenveagh National Park:

Section 6.5, Appendix 3 of the Donegal County Development Plan (2018-2024) notes that any proposals for wind energy developments must not be located within the Zone of Visual Influence of Glenveagh National Park. It further defines this statement as follows:

The environmental and visual character of Glenveagh National Park consists of the geographic extent of the park and its immediate environs. The implementation of the relevant policy should not be interpreted as relating to lands with limited physical or visual connection to the park. The onus is on the applicant to demonstrate the extent of the potential impact a proposed wind energy development has on the National Park.

The ZTV indicates that in one location only along the R254 Glendowan to Doochary road there is theoretical visibility of the turbines from the National Park. A view from this vicinity is included and described in Section 12.3.3.2 and included in EIAR Volume 4, the Photomontage Booklet as Viewpoint 1. Theoretical visibility in other areas of the Park is confined to sections of the Lough Inshagh trail and mountain slopes. These are discussed more fully within Section 12.3.3.

12.2.1.2 Landscape Character Assessment of County Donegal

The Landscape Character Assessment of Co Donegal was an important document in the evolution of the Council's landscape policy. While it is not a supporting document to the Plan, it provides important information on the landscape of Co. Donegal and its value. The three levels of landscape classification referred to above are related to this assessment.

12.2.1.3 Wind Energy Development Guidelines (2006) and draft revised version (2019)

The Wind Energy Development Guidelines Consultation Draft was published in 2019 (hereafter referred to as the WEG). There are no substantial changes in these guidelines in terms of landscape and visual considerations when compared to the 2006 Guidelines.

The WEG noted above refer to six types of landscape character as a basis for guidance relating to siting and design. The WEG note that it is often the case that a wind energy development is located in one landscape character area, but is visible from another. In this case, it is necessary to decide which character area more strongly influences the approach. These include:

- Mountain Moorland
- Hilly and Flat Farmland
- Flat Peatland
- Transitional Marginal Land
- Urban/Industrial
- Coast

Mountain Moorland

Mountain Moorland is described as having the following key characteristics:

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

The site and surrounding landscape displays many of the above characteristics. However, it is evident that the landcover on the site itself is currently a mosaic of coniferous forestry, and open expansive areas of blanket bog, (more typical of mountain moorland) with a high concentration of wind energy development in the vicinity of the site. EIAR Chapter 6 Biodiversity describes the moorland areas as areas of upland and eroding blanket bog. The topography is undulating, resulting in varying views while in close proximity to the site.

Siting and Design Guidance for Mountain Moorland:

- **Location:** (Defined as elevation and position of the wind energy development). *It may be acceptable to locate wind energy development on ridges and peaks. They may also be appropriate in certain instances, in a saddle between two peaks where they will be partially contained or 'framed'. A third acceptable location is lower down on sweeping mountainsides.*
- **Spatial Extent:** (This is defined as the area covered by a wind energy development, reflecting the number of turbines and their spacing.) *Given the typical extensive areas of continuous unenclosed ground, larger wind energy development can generally be accommodated because they correspond in terms of scale. However the spatial extent of a wind energy development would need to be reduced where a suggestion of smaller scale is provided by a nearby landscape features.*
- **Spacing:** *All spacing options are usually acceptable. Where a wind energy development is clearly visible on a crest of ridge there is considerable scope to vary the rhythm, though on simple ridges, regular spacing may be more appropriate. On sweeping and continuously even area of mountain moorland or upland plateaux, regular spacing may be most desirable.*
- **Layout:** *All layout options are usually acceptable. However the best solutions would either be a random layout, and clustered where located on hills and ridges, or a grid layout on sweeping and continuously even area of moorland or plateaux. Where a wind energy development is close to a linear element, such as a river, road or long escarpment, a corresponding linear layout or staggered line might be most desirable.*
- **Height:** *There would generally be no height restrictions on mountain moorlands as the scale of landscape is so great. However, shorter turbines may be more appropriate where they are located on small peaks and outcrops in order to maintain an appropriate scale. Profile, whether even or uneven, is dependent on topography: the more rugged and undulating (e.g. knolls and crags) the more uneven it will be. The profile of the wind energy development should not necessarily run in parallel to that of the topography.*

- **Cumulative Effect:** *The open expanse of such landscapes can absorb a number of wind energy developments, depending on their proximity. The cumulative impact will also depend on the actual visual complexity of landform, whether steeply rolling, undulating or gently sweeping. The more varied and undulating an area is topographically, the greater its ability to absorb and screen wind energy developments. The aesthetic effect of wind energy developments in these landscapes is acceptable where each one is discrete, standing in relative isolation.*

12.2.1.4 Summary of Policy

The policies above can be summarised as follows:

- The proposed wind farm is located in an area designated as HSA, where the policy states that the intention is to facilitate development of a nature, location and scale that allows the development to integrate within and reflect the character and amenity designation of the landscape.
- Nearby areas of EHSA include a small area to the south of the site, encompassing the hills of Tullytrasna and Three Tops, and which include some of the existing Culliagh and Meenbog turbines and large tracts of blanket bog with some stands of coniferous forest.
- In the wider vicinity, other areas of EHSA include Glenveagh National Park and the Bluestack mountains to the southwest.
- One protected view has potential for visual effects, though not in the direction of the protected view (Viewpoint 10 Fintown) and is discussed in Section 12.3.3.2
- The Plan states that developments must not be located within the Zone of Visual Influence of Glenveagh National Park and states the importance of the approach roads. Theoretical visibility occurs in one small area of the R254 within the Park only. Viewpoint 1 (contained in EIAR Volume 4) and described in Section 12.3.3.2 illustrates no visibility from the short section of public road within the ZTV. The other approach roads identified in Policy N-H-P 14 are not affected. Theoretical visibility in other areas of the National Park is further discussed within Section 12.3.3.

12.2.2 Receiving Environment – Landscape and Visual Context

The site of the proposed development is located northwest of Cark Mountain, in an upland area approximately 12 kilometres southwest of Letterkenny. This is an area of higher ground, a mixture of peatland and commercial coniferous plantation and agriculture. The site was planted in various stages ranging from 1973 to 2009. Prior to this it is estimated that it was also blanket bog. There are also a number of wind farms operational in the uplands.

12.2.2.1 Topography and drainage

The site is situated in the Cark Mountain Uplands LCA, as defined in the County Donegal Landscape Character Assessment. This is an area of uplands to the southwest of Letterkenny, and northwest of Ballybofey. These uplands are bounded by the River Swilly valley to the north, and the Finn river

valley to the south. The land rises from these valleys, to a height of over 300m, with several peaks, including Cark Mountain, Culliagh, Cronaglack and Three Tops.

In the wider landscape, the lands to the east are primarily lower lying areas, while to the west, the landscape becomes more mountainous, with the Glendown and Derryveagh mountains to the northwest. The Gweebarra fault runs through this area, with the Derryveagh mountains on the northwest and the Glendowan mountains to the southern side. To the north-west, the Glenveagh National Park occupies some 170 square kilometres of uplands, including Lough Beagh. The Bluestack mountains lie to the south-west. To the west, the topography largely determines the settlement patterns and the roads, which often follow river valleys.

The Cark Mountain Uplands drain to the Sruthanboy and Elatagh rivers to the south, and the Deele river drains to the east. North of the site, the Farnoge Burn, and Lowna River drain to the Swilly River.

The site elevation ranges from 330m, near the peak of Cronaglack, between the location of proposed turbines T8 and T9, and 235m elevation west of T1. The underlying rock is granite. There are no lakes within the site boundary, but Lough Deale is a large lake just east of the site. Surface drainage in the vicinity of the site is typically a complex of small drainage ditches created during ground preparation for commercial forestry. These channels feed larger semi-natural watercourses predominantly in the Foyle Catchment. The primary drainage of the proposed development all drain into a southerly or westerly direction through a network of streams which join the River Finn. The northern section of the site drains into both an unnamed stream and Meenadaura stream which eventually join the River Swilly approximately 2.8 km north of the site.

12.2.2.2 Land Cover

The landcover of the Cark Uplands consist mainly of large areas of blanket bog and coniferous forestry and a number of large wind farms. The slopes of the uplands have marginal farmland, with scattered dwellings, forestry and farms more evident on the lower slopes. Settlements are concentrated on the Finn and Swilly valleys. Plates 12-1, 12-2 and 12-3 below illustrate the land cover.

Plate 12-1: Coniferous forestry on Meenboll Hill looking towards Cark Mountain Uplands



Plate 12-2: Marginal farmland, forestry and scattered buildings in the Finn Valley



Plate 12-3: Expanses of blanket bog, coniferous forestry and existing wind turbines are found in the Uplands



Plate 12-3 above is also taken from within the EHSA to the south of the site.

Landcover on the site and surrounds, on the high ground of the Carr Uplands includes large expanses of blanket bog, as well as large tracts of coniferous forestry. The Corine Land Cover (2018) map has identified existing land cover at the site as a mix of Peat Bogs, Pastures, Natural Grassland, Transitional Woodland Scrub, Coniferous Forests and Land Principally occupied by agriculture with significant areas of natural vegetation.

Added to this, operational wind turbines are a presence in the area with a number of wind farms present in the vicinity. There are few small farms in the vicinity of the site and the area has a remote and isolated character. A local road provides access to the site. Plate 12-4 below shows a view towards the site with existing turbines set on open ground to the rear, and forestry in the foreground.

Plate 12-4: Blanket bog, coniferous forestry and wind turbines in the vicinity of the site



Plate 12-5: Coniferous forestry where T1 is proposed



Plate 12-6: The site lies to the rear of the conifers to the left of the image.



A number of existing turbines are located within existing coniferous woodland, as shown above.

The proposed development will include the location of a number of other proposed turbines to be located in blanket bog as well as in coniferous forestry, as shown in **Figure 12-3** below



Figure 12-3: Proposed turbines located in coniferous forestry and peatland

12.2.2.3 *Land Use*

Land use in the vicinity of the site includes mainly commercial forestry and wind energy. There was some small scale turf cutting south of the Culliagh turbines, which lie southeast of the proposed development, on the day of the site visit. There is some marginal farming in the wider area, but this is confined to the lower slopes of the uplands, and several small areas including an area to the south of Cark wind farm, as well as west of the site along the Elatagh River. There are very few dwellings in the uplands, with some scattered dwellings to the southeast and northwest of the site, with those to the northwest visible in the top left hand corner within **Figure 12-3** above. These are located in the townlands such as Tullyhonour, Rathdonnell and Carrickalangan along the local road L-1632/L-2073.

12.2.2.4 *Wider Landscape - Settlement and Transport*

Settlement patterns and habitation are largely defined by topography and landcover, with the main roads in the area generally following the valleys and smaller local roads traversing the uplands. The Cark Mountain uplands in the vicinity of the site are sparsely populated and there are few roads, and the roads that exist in the uplands are narrow. There is a sense of remoteness, with the wind farms conveying an almost industrial character to the upland landscape.

Scattered dwellings and farms are found on the slopes of the uplands, with more concentrated settlement on the lower valley sides and near the valley floors. The nearest settlements include Cloghan to the south west and Newmills to the north, with Drumkeen to the east. The larger towns of Letterkenny and Ballybofey are to the northeast and southeast respectively.

The N13 between Letterkenny and Ballybofey/Stranorlar is the main route to the east, and the R250 to the north connects Letterkenny to Fintown to the north and east of the uplands. To the south, the R252 runs along the Finn valley floor. Many of these routes have potential visibility of the proposed turbines and are discussed further in Section 12.3.3.

12.2.2.5 Cultural Heritage, Tourism, Recreation and Amenity

There are a number of trails, cultural heritage locations and recreation and amenity areas in the vicinity of the site, and in the wider landscape.

Trails and Walkways

Slí Dhún na nGall/Sli na Finne is a long distance (51km) waymarked trail, travelling on many minor roads as well as off-road. The trail is, at its closest point, approximately 3.5 kilometres west of the nearest proposed turbine. It travels north west and then travels towards Doocharry (An Duchoraidh), and in the other direction, travels south parallel to the Elatagh River and then follows the slopes of Crocknahamid peak to the southwest.

The Drumboe Woods trail in Ballybofey/Stranorlar lies to the southeast of the proposed development and at some distance.

The Northwest Cycle Trail is a long distance cycle trail (326km) which runs from Sligo Town to Lifford. It passes closest to the proposed turbines just south of Ballybofey, approximately 11 kilometres to the southeast.

Glenveagh National Park

There are six National Parks in Ireland and Glenveagh is the only designated National park in Co. Donegal. It is well known for its high scenic qualities, its castle and setting on Lough Beagh. It is also designated an area of EHSA under the Development Plan. The Park encompasses the long, narrow Lough Beagh, and the mountains on either side. The park is well known for its lush vegetation in the sheltered valley around Lough Beagh and contains contrasting areas of open moorland on the higher ground. The R254 is a narrow road that runs through the park, as shown below, with vast tracts of blanket bog visible, and has a very remote character with a strong sense of naturalness, as shown below.

Plate 12-7:Glenveagh National Park: High scenic qualities and natural, wild character



A short section of this road is the only road in the National Park which falls within included in the Zone of Theoretical Visibility (ZTV) of the proposed wind farm. However, the Photomontage from Viewpoint 1 shows no visibility, as this also takes into account vegetation and buildings compared to the ZTV, and the turbines tips are screened. This is outlined in Section 12.3.3

Several trails exist within the park, namely:

- Derrylahan & Lakeside Walks
- Lough Inshagh Walk
- View Point Walk
- Upper Glen Walk
- Castle Garden Trail

The only trail partly within the ZTV of the proposed turbines is part of the Lough Inshagh walk, which starts from near Glenveagh castle on Lough Beagh, and traverses Gartan Mountain. Potential visibility and visual receptors are discussed in Section 12.3.3.

The park boundary is approximately 7 kilometres at its closest point from the nearest proposed turbines within the Drumnahough site. However the closest part of the Lough Inshagh walk is approximately 11 kilometres from the proposed development.

Other areas which are important in terms of cultural heritage including Glenveagh Castle, the Glenveagh visitor centre, as well as St Colmcille's Stone near the shores of Lough Gartan. Glenveagh castle and the surrounding gardens and lakeshore will not have visibility of the proposed turbines. There will be no visibility either in the vicinity of the visitor centre. Adjacent to Lough Gartan, and along the Lough Inshagh walks, St Colmcille's Stone is noted as the birthplace of St. Colmcille and the location of a mound. This area has theoretical visibility of between 1 and 3 turbines as shown in the ZTVs, **Figure 12-8 and 12-9**, and these likely to appear as distant blade tips behind the ridge of higher ground.

Other Recreation/Amenity areas

A number of locations were considered, including the Beltany Stone Circle which lies approximately 17 kilometres to the East, just south of Raphoe town which is at a considerable distance. The Gl;ebe Gallery and gardens (run by the OPW) which include grounds on the shores of Lough Gartan but the ZTV shows no theoretical visibility.

12.2.2.6 Summary of Landscape Character

The landscape character in the study area can be summarised as follows:

- The site is located in the Cark Mountain Uplands Landscape Character area, which is characterised by extensive areas of open moorland, large tracts of commercial coniferous forestry, and a number of wind farms. Agriculture is found on the lower slopes of the uplands.
- Settlement is sparse in the area, and the area is relatively remote. Settlement is concentrated on the lower slopes towards the Finn valley to the north and Swilly Valley to the south.
- There are views to the surrounding landscape from parts of the site, while other areas have views restricted as a result of mature conifer plantations

- The existing wind farms are visible from parts of the surrounding landscape and act as a landmark, depending on visibility.
- Several landscapes in the vicinity are known for their scenic qualities, including Glenveagh National Park to the west, and the Bluestacks mountains to the southwest which are both designated EHSA. The landscape to the east is more settled and less scenic.

12.2.2.7 Landscape Value

The GLVIA sets out the methodology for assigning landscape sensitivity. This is based on combining judgements on landscape value, and landscape susceptibility which relates to the type of development proposed. Landscape susceptibility is addressed in Section 12.3.2. along with the Landscape Sensitivity.

Landscape value, as referred to above, can be identified by the presence of landscape designations or policies which indicate particular values, either on a national or local level. These include international designations (such as UNESCO World Heritage sites) national designations, and local designations such as scenic routes, scenic views or amenity designations which are included in County Development Plans. Important tourism, cultural heritage or recreational areas are also indicative of value.

In addition, where landscapes do not have formal designations, a number of criteria are used to assess the value of a landscape. For undesignated landscape in the vicinity of the site, these criteria include:

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

In terms of formal designations, the landscape value of landscape features such as Glenveagh National Park and other areas designated EHSA to the southwest, and waymarked trails in the landscape mentioned above, are considered to be elements which are highly valued. Areas designated HSA and MSA also denote landscapes that have certain levels of value. Protected views as shown in **Figure 12.2** above also denote valued viewpoints.

The site is adjacent to an area of EHSA, and is designated, along with the majority of the Cark Mountain Uplands, as HSA. It is not clear from the Development Plan how this designation is arrived at. The criteria above are also indicative of values, and when these are applied to the site, it is evident that certain areas of the site may appear to be of different values, varying from areas of lower value (under commercial forestry and with restricted views) to areas of higher value with extensive and some scenic view over the moorland and wider landscape.

12.2.3 Potential Visual Receptors and Theoretical visibility

Potential visual receptors are identified through the study of ZTV maps, which indicate theoretical visibility of the site. Initially, however, sensitive receptors are identified, and as set out in **Table 12-4**,

visual receptor sensitivity is a combination of the susceptibility of the receptor and the value of the view. Highly sensitive receptors can include:

- Residents with views of the proposed development
- Those engaged in outdoor recreation (e.g. using walking trails, hiking)
- Viewers at scenic viewpoint or protected views
- Viewers at tourist or cultural heritage sites

Less sensitive receptors can include:

- Those travelling at speed (motorists) through the landscape
- Those engaged in work or sport

The process of selecting viewpoints involves an initial identification of visual receptors in the vicinity of the site, the study of the ZTV (both hub height and tip height) to determine the pattern, extent of visibility, as well as the potential for visibility especially at locations where receptors are considered highly sensitive. Viewpoint locations from the original Drumnahough EIS were considered, and Donegal County Council were also consulted and suggested viewpoint locations. The viewpoint selection process and ZTV description are detailed in Section 12.3.3.

As noted in Section 12.1.2, a small proportion of areas within Northern Ireland have theoretical visibility of the proposed Drumnahough turbines. These areas range from between 16.5 and 30km from the proposed turbines and it was not considered necessary to include viewpoints from these areas. However potential visibility is discussed in Section 12.3.3.

12.2.4 Replanting Lands

Several sites were chosen for replanting lands, to replace the forestry to be felled as a result of the development. These sites already have Technical Approval for forestry. These are:

- Rathgoggin, Co Cork/Co. Limerick Border
- Lisroe and Kilcolumb, Co/ Clare
- Craghera, Co. Clare
- Pullaorragune, Tuam, Co. Galway

12.2.4.1 Receiving Environment and Policy context

Rathgoggin, Co Cork/Limerick.

The Rathgoggin lands are located in North Cork/South Limerick, on agricultural lands approximately 1 kilometre north of the outskirts of Charleville. The lands lie to the east of the N20 Charleville – Limerick road, in a largely flat rural landscape with some scattered dwellings immediately adjacent to the proposed replanting lands. The land in the vicinity is mainly composed of large fields, and forestry planting is seen to the east (to the right of the image). To the north, a wastewater treatment area with several lagoons (which treats wastewater from a food processing plant in Charleville) occupies land to the north of the site. The landscape context is therefore influenced by agriculture, and industry.



Figure 12-4: Replanting lands at Rathgoggin, Co. Cork/Limerick: Source: Google Maps (2020)

In terms of policy and designations, the lands in Co. Limerick (outlined in pink) are not subject to any designations, while the lands in Co. Cork (red) are located in an area of High Value Landscape (HVL). While this is defined in the Cork County Development Plan as:

Landscape Character Types which have a High or Very High Value, and High or Very High Sensitivity, and are also considered to be of County or National Importance, are classified as High Value Landscape (HVL).

The following policy is relevant:

GI 6-2: Draft Landscape Strategy: *Ensure that the management of development of the County will have regard for the value of the landscape, its character, distinctiveness and sensitivity as recognised in the Cork County Draft Landscape Strategy and its recommendations, in order to minimize the visual and environmental impact of development, particularly in areas designated as High Value Landscapes where higher development standards (layout, design, landscaping, materials used) will be required.*

The Cork County Draft Landscape Strategy (2007) notes that this area, Landscape Character Area 5 Fertile Plain with Moorland Ridge, has generally Very High value and Very High sensitivity. It is characterised by the flat or gently undulating landscape along the Blackwater river, with large fields, with mature field boundaries, and old demesnes, with some areas of conifer plantation on the higher ground. This is described as a working agricultural landscape. The proposed replanting areas

are a number of fields to the east of a local road with some dwellings. The area is not considered to have highly scenic qualities.

Lisroe and Kilcolumb, Co. Clare

Replanting is also proposed in this area of western Co. Clare, in the uplands west of Kilmaley and south of Connolly. This is a relatively remote landscape, characterised by areas of marginal grassland, coniferous forestry and areas of peatland. The aerial image below (**Figure 12.5**) shows that the proposed afforestation is adjacent to several existing blocks of forestry, with only the proposed replanting area to the north of the road in an area where no forestry exists. The area is also characterised by open views, particularly to the south towards Ben Dash and the surrounding landscape.



Figure 12-5: Replanting Lands at Lisroe/Kilcolumb, Co. Clare Source: Google Maps (2020)

This area is located within a rural area, designated as a Settled landscape as per the Clare County Development Plan 2017-2023, which categorises the County's landscape as either Settled, Working landscapes or Heritage landscapes. Settled areas are described as areas where people live and work. A scenic route is located approximately 1.8 kilometres to the north, the R474 between Milltown Malbay and Connolly but the proposed afforestation would not affect the scenic route at this distance. There is one dwelling immediately adjacent one of the proposed afforestation sites.

Craghera, Co. Clare

This proposed replanting site is located in a relatively remote rural area southwest of Ennis, in an area of generally flat topography with long distance views, including glimpses across the Shannon Estuary to the south. The landcover of the proposed replanting site consists of agricultural fields, with some fields containing scattered areas of scrub. In the wider landscape, scattered houses and farms, interspersed with considerable areas of bogland and areas of coniferous forestry, are visible in **Figure 12-6** below. These areas of forestry are generally set back from the road, and the area has an open character. This location is also within a Settled Landscape, and there are no scenic routes in the vicinity.



Figure 12-6: Replanting lands at Craghera, Co. Clare

Source: Google Maps (2020)

Pollacorrugane, Tuam, Co. Galway

The proposed replanting lands are located just north of Tuam, in a rural area which borders the River Clare. The topography is generally flat, and the landcover composed of agricultural land. In the surrounding landscape, the landcover is mainly agricultural land with mature roadside hedgerows, with large areas of bogland, two of which are evident on the aerial image (see **Figure 12-7** below). Scattered dwellings are evident, and several are seen along the road, adjacent to the proposed replanting area. Some blocks of coniferous forestry are evident in the aerial image, to the north and just west of the site, but it is not a conspicuous feature of the wider landscape. The River Clare is mainly inaccessible to the public in this area, bordered by agricultural land on both sides. Land use in the vicinity of the replanting site can also be identified in **Figure 12-7** below.



Figure 12-7: Replanting lands at Pollacorrage, Co. Galway Source: Google Maps (2020)

As set out in the Galway County Landscape Character Assessment, a supporting document of the Galway County Development Plan, the site is located in Landscape Character Area 5, Northeast Galway (Tuam and Environs). This is categorised as Low landscape sensitivity (Class 1 out of a possible Class 5) and of Low landscape Value (Class 1 out of Class 4). There are no scenic views in the vicinity of the site and the area is not regarded as scenic.

12.3 LIKELY SIGNIFICANT EFFECTS

12.3.1 Do-Nothing Scenario

The activities on the site and its surroundings include commercial coniferous forestry which is expected to continue and includes forestry felling and re-planting. Other activities in the vicinity are the production of wind energy by a wind farm located adjacent to the site and other wind farms in the vicinity. These are expected to continue. The adjacent wind farm (Cark) is nearing the end of its operational life but it is not known whether it will be re-powered or decommissioned. Small scale agriculture is expected to continue.

12.3.2 Landscape Effects

Landscape Effects are a combination of the Magnitude of Change and the Sensitivity of the resource. The landscape effects can include effects on the physical fabric of the landscape, on the landscape as a resource, and also on the character of the landscape. The effects on the character includes aesthetic and perceptual aspects.

Landscape Sensitivity

Landscape Sensitivity relates to Landscape Value and Landscape Susceptibility. The sensitivity of the landscape receptor is related to the type of development proposed.

The site itself, and immediate surrounds, on the Cark Mountain Uplands, includes areas of Medium sensitivity to wind farms. The site and surrounds are composed of areas of blanket bog, large tracts of coniferous forestry, and existing wind farms:

***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*

There are several areas of EHSA in the vicinity of the site. Though an area of EHSA is located south of the site, this includes the River Elatagh, a substantial tract of blanket bog, some areas of coniferous plantation and a number of wind turbines. However other areas in the vicinity, of similar landcover, are designated HSA and therefore these uplands are considered to have the same sensitivity (Medium) to wind farms.

However the EHSA which covers Glenveagh National Park, is considered of High sensitivity to the development, as is the EHSA to the south west which includes the Bluestack mountains and their foothills. High sensitivity is defined as:

***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*

The Finn Valley to the south, and Swilly Valley to the north are considered to be of Low-Medium sensitivity as they are partly screened by topography. The flatter and more settled and predominantly agricultural landscape to the east of Dromkeen and the N13 is considered less sensitive, of Low sensitivity, as are the settlements of Letterkenny and Stranorlar/Ballybofey.

12.3.2.1 Construction Phase Landscape Effects

Magnitude of Change – Site and Immediate Surrounds

Construction Phase landscape effects are likely to be localised and affect only the site and immediate vicinity. The construction phase will result in changes at a local level, and will involve site works, underground cabling, felling, construction of roads, hardstands, and of the turbines and associated elements. Rock will be extracted from the 4 No. onsite borrow pits, three of which are located in forestry, and peat will be stored in Peat Deposition Areas. Temporary construction compounds will be constructed, and a single storey substation constructed in a partly forested area to the west of the site (in the case of the Alternative grid connection option). A battery storage facility will also be located within the substation compound.

Off-site works may include ducting and joint bays under the public road and existing wind farm roads from the wind farm to the consented Lenalea substation (and no proposed substation and battery storage would be constructed in this case). Other proposed works include road widening and junction improvement works to facilitate turbine delivery. Machinery will be entering and exiting the site and will be evident in the vicinity of the site. The magnitude of change is considered to be Medium to High but localised in nature. The works will be temporary to short-term in duration.

Magnitude of Change – Wider landscape

The magnitude of change in the wider landscape (in the valleys to the north and south of the site, and the Glenveagh National Park to the northwest) is considered Negligible to no effect.

Significance of Effect – Site and Immediate vicinity

As noted above, construction phase landscape effects are considered relevant on the site and immediate surroundings within the Cark Mountain Uplands. The landscape effects will be Temporary to Short term, Moderate, adverse. These will be localised effects and not evident at the wider landscape scale.

The proposed off-site works are localised works and will include the cable laying to the Lenalea substation, and road widening, and junction improvement works. These are considered to have Not Significant, temporary effects on these localised areas where the works take place.

Significance of Effect- Wider Landscape

Construction phase effects are not expected to arise on the Glenveagh National Park, while effects on other areas of the wider landscape and the areas to the north and south of the Cark Mountain Uplands (Swilly Valley to the North and Finn Valley to the south) are considered temporary and Imperceptible, as some evidence of the works are likely be perceived from these areas from time to time during construction.

12.3.2.2 Operational Phase Landscape Effects

Magnitude of Change – Cark Mountain Uplands LCA

The presence of the 12 No. proposed turbines in the landscape will result in limited changes to the fabric of the landscape – most of which occur during the construction phase. Changes during the operational phase relate mainly to the change of landscape character, perceptual and aesthetic aspects. The effect on landscape character is related to visibility. The largest concentration of theoretical visibility is in the vicinity of the site and the surrounds of the Cark Mountain Uplands LCA.

The proposed turbines are located in an area with a high proportion of existing wind turbines, and the other main elements of landcover are coniferous forestry and areas of moorland. A number of existing wind turbines are located in the vicinity of the site, and the character of the immediate vicinity of the site includes areas which are strongly influenced by the presence of wind energy in the landscape, as well as some areas where the character is still strongly influenced by the wide expanses of moorland, even in the presence of wind energy developments. The areas of commercial forestry contrast with the open moorland. It is considered that the magnitude of change resulting from the proposed wind farm will vary throughout the landscape, but it is considered that the proposed wind farm is consistent with the character of the landscape in this area and in the

immediate vicinity of the site. The magnitude of change is considered to be Low, in the vicinity of the site, with Medium change in other parts of the Uplands:

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

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.*

It should be noted that the character of the area of EHSA to the south of the site is already influenced by the surrounding forestry and windfarms, and this influence will be increased by the proposed turbines.

Magnitude of Change – Wider Landscape

Glenveagh National Park is an area in the wider vicinity which has landscape character of High sensitivity to the development. As is discussed below, only one very short section of one road in Glenveagh has theoretical visibility of the tips of several of the proposed turbines, as shown in Viewpoint 1 the Photomontage Booklet in EIAR Volume 4. Other parts of the National Park where theoretical visibility is shown is in parts of the ridge dividing Lough Beagh from Gartan Lough, which includes parts of the Lough Inshagh trail, as well as from the slopes of some of the eastern slopes of the mountains within the National Park where there are no formal trails. Overall the magnitude of change on the landscape character of the Park is considered to be Negligible to Low. As illustrated on the ZTV, no visibility will occur at Glenveagh Castle and gardens, around the shores of Lough Beagh, the visitor centre and four of the five trails within the Park. (It should be noted that the change relates to the character as opposed to the physical fabric of the landscape).

Change that is limited in scale, resulting in no alteration to landscape receptors

The Lough Inshagh trail is approximately 11 kilometres northwest of the proposed turbines, while the eastern slopes of Leahanmore (with no formal trails) have theoretical visibility at a distance of approximately 8.8 kilometres from the proposed development.

It should also be noted that where theoretical visibility of the proposed Drumnahough turbines does occur, in the majority of the areas these are not the only turbines visible and visibility of distant wind turbines is not a new feature of the area.

Significance of Landscape Effect – Site and immediate vicinity

The landscape effect on the Cark Mountain Uplands is considered to be Long Term, Slight to Moderate, neutral effect. The proposed development will not introduce a new element to the landscape, but an increase in the number of turbines. The landscape character of some areas will undergo Slight Effects, while other parts of the landscape character will undergo Moderate landscape effects, where open views of the turbines will be available at relatively close proximity. It should be noted that the reversibility of change is an important consideration in the landscape effects.

Significance of Landscape Effect – Wider landscape

The landscape effect on the Glenveagh National Park is considered to be Not Significant to Slight. The overall landscape character will not be affected, and several key areas including Glenveagh Castle and gardens, Lough Beagh, the visitor centre, and the majority of the trails in the park will not have theoretical visibility of the turbines. Where visibility does occur, the turbines will be at some distance from these viewing locations.

12.3.2.3 Offsite works - Replanting lands

The offsite works include the proposed replanting lands at the locations set out in Section 12.2.4. These are described separately:

Rathgoggin, Co Limerick/Co. Cork

Landscape Sensitivity

Landscape Sensitivity for the site to afforestation is considered to be Low. It is noted that while part of the lands are designated HVL (Co. Cork), the surroundings are influenced by agriculture, industrial activity and there is another area of forestry in the area. The areas does not have high scenic qualities.

Magnitude of Change

The proposed afforestation will cause a change in landcover in the area, from open agricultural fields, to forestry plantation. The scale of the proposed planting is considered Medium in the context of the surrounds. The proposed planting comprises mixed plantation with species including Sitka Spruce, Pedunculate Oak, Birch and Alder. The plantation therefore is a mix of broadleaf and coniferous trees and is considered more appropriate than a monocultural plantation, given that hedgerows in this area contain mature deciduous trees. If the afforestation is carried out with the retention of hedgerows, which appear to be the case in the forestry to the east of the site, this will reduce the magnitude of change. The magnitude of change is considered Low to Medium.

Significance of Effect

The significance of effect is considered Slight, neutral to beneficial effect. Immediately post planting, the landscape effects will not be immediately evident but over time, the landscape effects will be apparent in the medium to Long term. Though the planting will change open agricultural fields to forestry, and create a sense of enclosure, the planting of a high proportion (as indicated on the Technical approval document) of native broadleaf species is considered a positive effect on the landscape as a resource and will have less of a sense of enclosure than a wholly coniferous plantation.

Lisroe and Kilcolumb, Co. Clare

Landscape Sensitivity

The Landscape sensitivity of this landscape to afforestation is considered Medium. The landscape is open and has expansive views, so the planting of forestry has potential to affect the open character of the landscape.

Magnitude of Change

The magnitude of change is considered Low. Two of the proposed planting areas are relatively small scale grassland areas, and are located adjacent to existing conifer plantation to the south of the road. The other location for proposed planting is north of the road in grassland and is broken up into several plots which relate to field boundaries.

Significance of Effect

The significance of effect is considered Not Significant to Slight, neutral. The proposed planting consists of relatively small groups of Sitka Spruce, with groups of 'Additional Broadleaves' which includes a mix of broadleaf species, in an area where conifer plantations are found. Field boundaries should be retained, this will ensure the pattern in the landscape is still legible.

Craghera, Co. Clare**Landscape Sensitivity**

Landscape Sensitivity is considered Medium. This is a landscape with an open, expansive character and long distance views and little enclosure. Some areas of scrub and forestry are visible, but these are on the lower land to the south of the road.

Magnitude of Change

The magnitude of change is considered to be Negligible to Low. The replanting lands are small in scale, broken into several areas which mainly follow field patterns. The replanting lands include two locations in proximity to the road, but are laid out in narrow plots that occupy a limited extent of land (one field) on either side of the road, with most of the plantation stretching away from the road. A smaller area of replanting to the west is contiguous to an existing area of conifer plantation. The species are mainly Sitka Spruce with clumps of Additional Broadleaves in smaller quantities. The planting of the field between two houses will result in a locally more enclosed landscape character in this very limited area.

Significance of Effect

The significance of effect is considered Not Significant, neutral effect. The proposed planting is small in scale, mainly set back from the road, and similar to that which exists in the landscape and does not change the open and expansive character. Field boundaries should be retained, this will ensure the pattern in the landscape is still legible.

Pullaorragune, Tuam, Co. Galway**Landscape Sensitivity**

Landscape Sensitivity is considered Low. This is a flat landscape with few long distance views, and no remarkable scenic features.

Magnitude of Change

The magnitude of change is considered to be Low. The proposed planting is located in a long, narrow strip of agricultural land, which does not appear to be divided into different fields. This is adjacent to

several single dwellings, and stretching as far as the Clare River. Planting includes mainly Sitka Spruce with a smaller proportion of Alder and other broadleaves planting in groups.

Significance of Effect

The significance of effect is considered Not Significant, adverse effect. While the growth of the plantation will, over time, slightly alter the character of the landscape immediately adjacent to the dwellings, and create a sense of enclosure, the proposed planting occupies a limited extent and will not result in a change to the wider character of the landscape. However the large block of largely coniferous trees does not correspond to the scale and pattern of the landscape.

12.3.3 Visual Effects

Visual Receptor Sensitivity is discussed under Operational Phase effects.

12.3.3.1 Construction Phase Visual Effects

Magnitude of Change

Construction Phase visual effects are likely to be localised and affect only the site and immediate vicinity. The construction phase will result in changes at a local level, and will involve site works, underground cabling, felling, construction of roads, hardstands, substation, and of the turbines and associated elements. Rock will be extracted from the 4 No. onsite borrow pits, and peat will be stored in Peat Deposition Areas but these are unlikely to be visible from the surrounds as all but one are located in forestry. Temporary construction compounds and substation (in the case of the Alternative grid option), will be constructed.

Machinery will be entering and exiting the site and will be evident in the vicinity of the site. The viewers at viewpoints 1-17, as shown in **Figure 12-8**, which are described in the Operational Phase, will not experience visual effects during construction stage. These effects are likely to be confined to the immediate vicinity of the site where works such as felling and earthworks are likely to be more evident, from the local roads close to the site. The magnitude of changes is considered localised, Medium to High magnitude of change in the immediate vicinity of the site.

Off-site works may include ducting and joint bays under the public road from the wind farm to the consented Lenalea substation. Other proposed works include road widening and junction improvement works to facilitate turbine delivery. These works would result in a Negligible to Low magnitude of change.

Significance of Effect

The landscape effects during the construction phase will range from Not Significant, adverse where the cable route is being constructed, to Slight to Moderate, adverse visual effects in the immediate vicinity of the site. These effects will be of Temporary to Short Term in duration. The visual receptors in the wider landscape will not be affected.

Operational Phase

ZTV Maps and Photomontages were used to assist in the assessment of operational phase visual effects. The uses and limitations are outlined in Section 12.1.3.4 and 12.1.3.5.

12.3.3.2 ZTV Maps – Pattern and extent of theoretical visibility

Several ZTV Maps were produced:

- Hub Height ZTV – this shows theoretical visibility to hub height
- Tip Height ZTV – this shows theoretical visibility to tip height (showing any potential visibility).
- Cumulative ZTV – this shows the theoretical visibility of the proposed Drumnahough wind turbines along with theoretical visibility of other existing, permitted projects within 30km. This ZTV map distinguishes between areas with theoretical visibility of the proposed Drumnahough turbines, and also shows areas where the proposed Drumnahough turbines may be visible along with other turbines. A third colour represents areas where only the existing turbines are visible.
- Cumulative ZTV – additional visibility as a result of Drumnahough. This shows only the additional areas which will have theoretical visibility as a result of the proposed Drumnahough turbines.

These maps are contained in EIAR Volume 4 along with the photomontages at full size, and are reproduced here as **Figures 12-8, 12-9, 12-10 and 12-11**. The ZTV Maps, illustrating the pattern and extent of visibility are briefly described below. The Hub Height ZTV is referred to for the description below unless otherwise noted. As noted in the *Visual Representation of Wind Farms* (SNH, 2017), including both hub and tip height ZTV is a useful comparison that helps to identify areas where turbine blades may be visible, but not the tower.

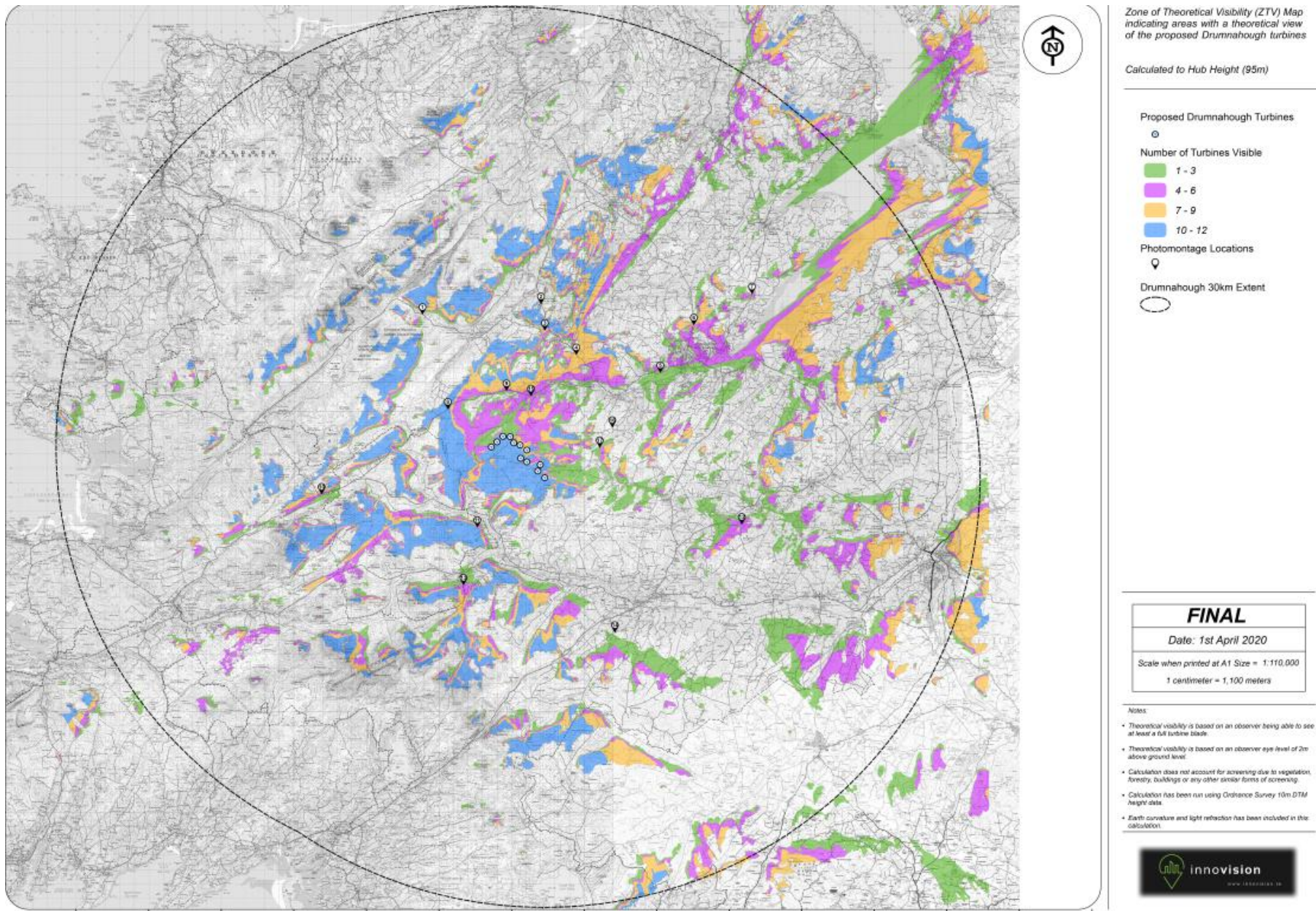


Figure 12-8: Hub Height ZTV and Viewpoint Locations

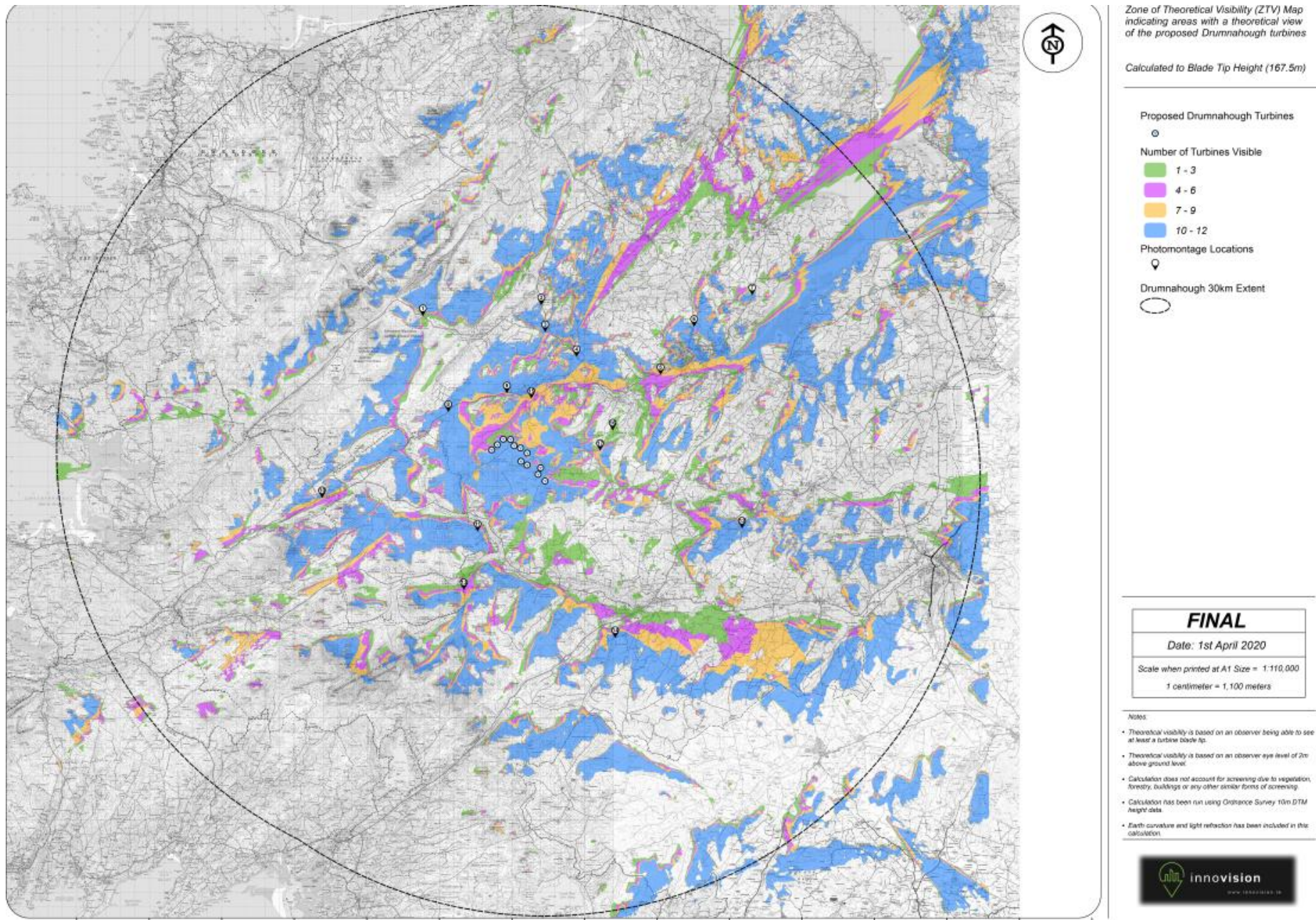
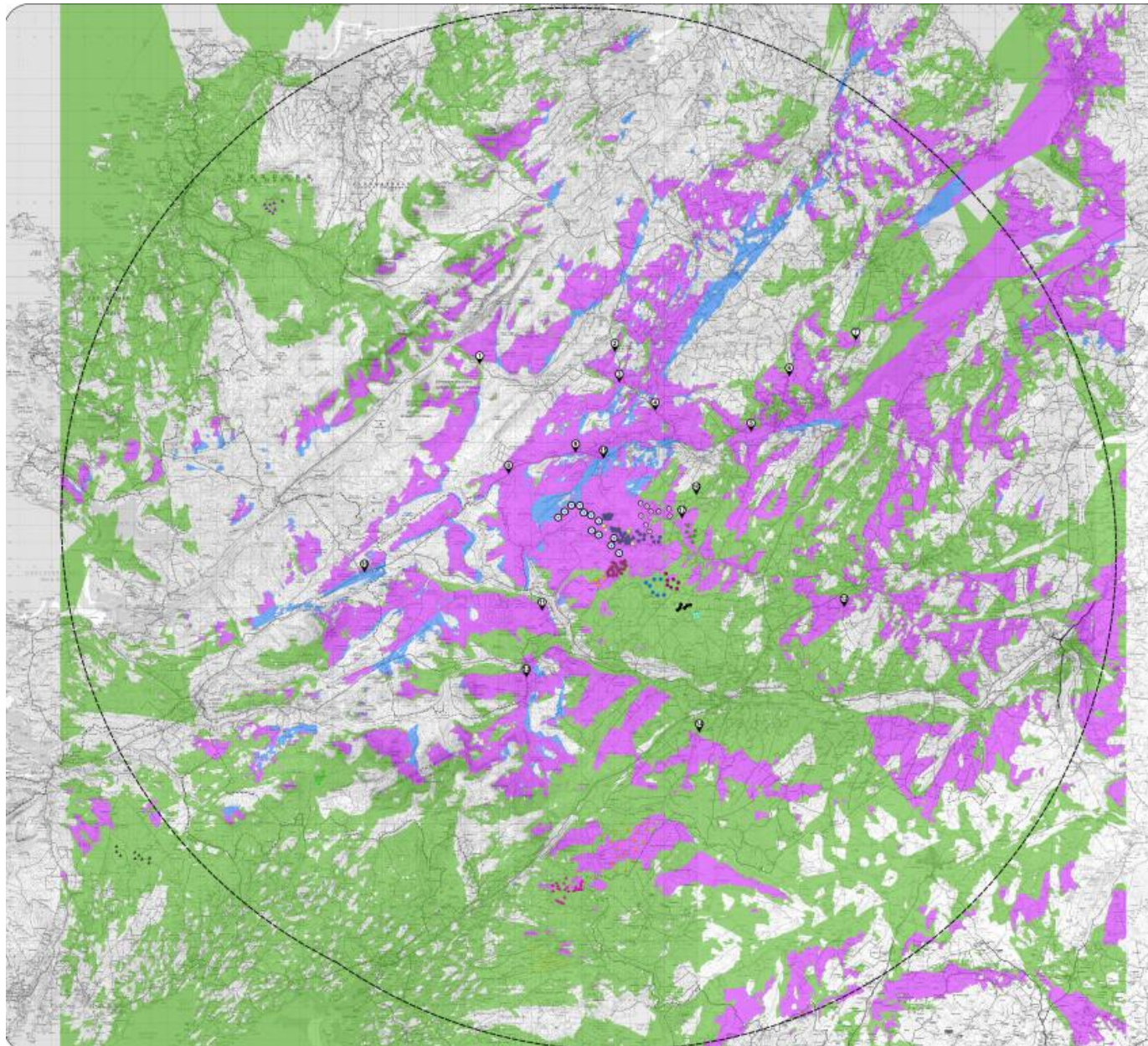


Figure 12-9: Tip Height ZTV and Viewpoint Locations



Zone of Theoretical Visibility (ZTV) Map indicating areas with a theoretical view of the proposed Drumnahough wind farm, in combination with all other existing & permitted wind farms within the study area

Calculated to Hub Height (Varying Heights)

Proposed Drumnahough Turbines



Cumulative Wind Farms

- Ballysteng (Constructed)
- Carr (Constructed)
- Carr Extension (Constructed)
- Cullagh (Constructed)
- Lenalea (Permitted)
- Lurganboy (Constructed)
- Meenagrua (Constructed)
- Meenahoma (Constructed)
- Meenalanah (Constructed)
- Meenanilla (Constructed)
- Meenbog 1 (Constructed)
- Anrarget (Constructed)
- Barnesmore (Constructed)
- Cronalaght (Constructed)
- Meenadreen 1 (Constructed)
- Meenadreen 2 (Constructed)
- Meenbog 2 (Permitted)
- Meentycaul (Constructed)

Wind Turbines Visible

- Drumnahough Turbines Only
- Overlap of Drumnahough turbines with all other cumulative turbines
- Cumulative Turbines Only

Photomontage Locations



Drumnahough 30km Extent

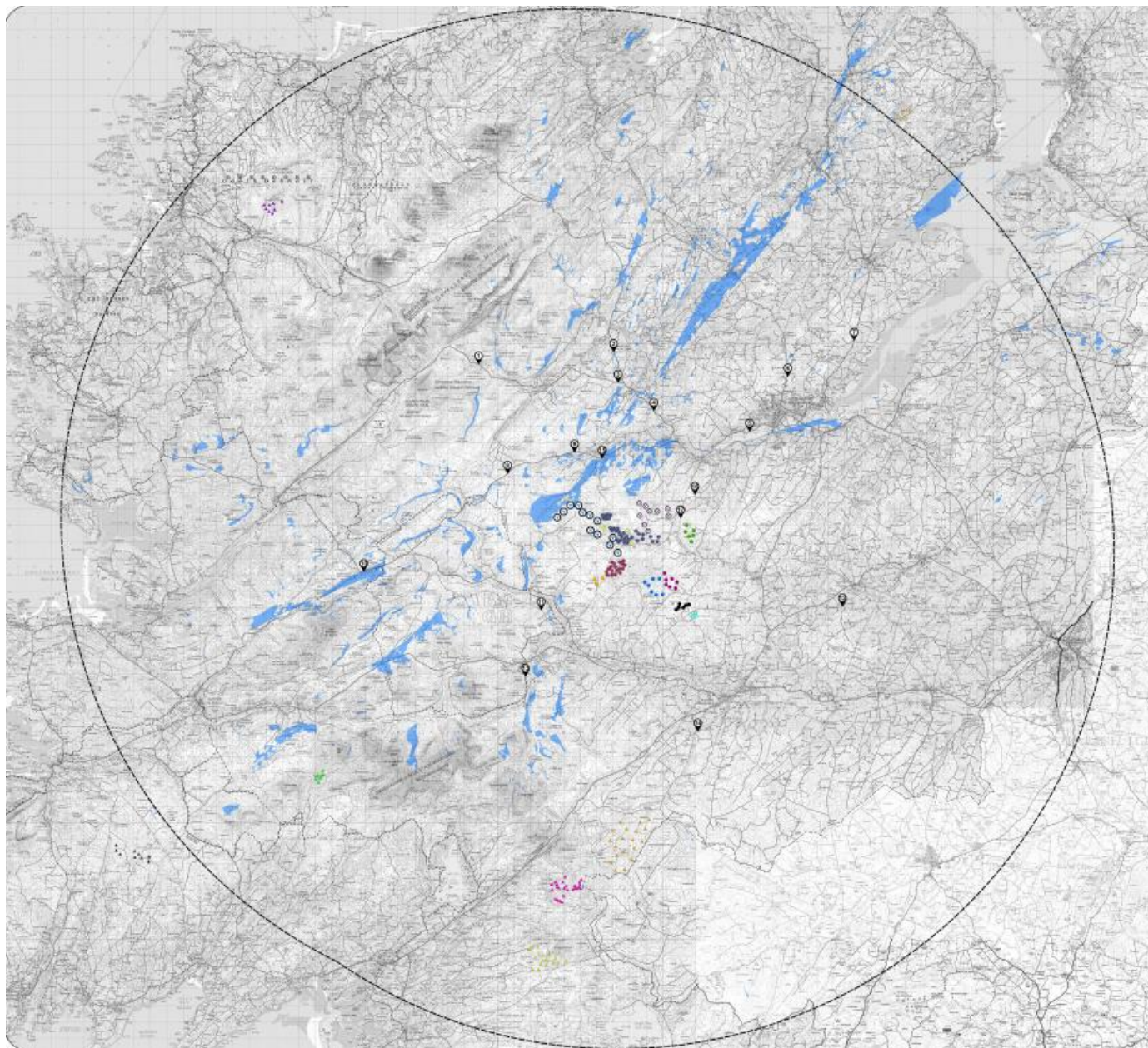


FINAL
Date: 14th May 2020
Scale when printed at A1 Size = 1:110,000
1 centimeter = 1,100 meters

- Notes:
- Theoretical visibility is based on an observer being able to see at least a full turbine blade.
 - Theoretical visibility is based on an observer eye level of 2m above ground level.
 - Calculation does not account for screening due to vegetation, forestry, buildings or any other similar forms of screening.
 - Calculation has been run using Ordnance Survey 10m DTM height data.
 - Earth curvature and light refraction has been included in this calculation.



Figure 12-10: Hub Height Cumulative ZTV



Zone of Theoretical Visibility (ZTV) Map indicating areas with a theoretical view of the proposed Drumnahough wind farm, that previously had no theoretical visibility of any other existing & permitted wind farm within the study area

Calculated to Hub Height (Varying Heights)

Proposed Drumnahough Turbines



Cumulative Wind Farms

- Ballytang (Constructed)
- Cark (Constructed)
- Cark Extension (Constructed)
- Cullagh (Constructed)
- Lenalea (Permitted)
- Lurganboy (Constructed)
- Meenagrav (Constructed)
- Meenahoma (Constructed)
- Meenashan (Constructed)
- Meenanilla (Constructed)
- Meenbog 1 (Constructed)
- Anargel (Constructed)
- Barnesmore (Constructed)
- Cronasight (Constructed)
- Meenadreen 1 (Constructed)
- Meenadreen 2 (Constructed)
- Meenbog 2 (Permitted)
- Meentycal (Constructed)

Theoretical Turbine Visibility

Additional areas of theoretical visibility as a result of the proposed Drumnahough turbines

Photomontage Locations



Drumnahough 30km Extent



FINAL
Date: 14th May 2020
Scale when printed at A1 Size = 1:110,000 1 centimeter = 1,100 meters

Notes:

- Theoretical visibility is based on an observer being able to see at least a full turbine blade.
- Theoretical visibility is based on an observer eye level of 2m above ground level.
- Calculation does not account for screening due to vegetation, forestry, buildings or any other similar forms of screening.
- Calculation has been run using Ordnance Survey 10m DTM height data.
- Earth curvature and light refraction has been included in this calculation.



Figure 12-11: Hub Height ZTV - Additional Visibility

Areas without Theoretical visibility

It is worth noting that the ZTV illustrates a considerable number of locations where there is no theoretical visibility – including Stranorlar (Ballybofey has theoretical visibility of tips only) and much of the Finn Valley south of the site, the N15 through Barnesmore Gap and much of the Bluestack Mountains. There is no visibility in the vicinity of Glenties to the southwest, or the landscape southwest of Doochary or further west of the Derryveagh Mountains. Gweedore and the majority of the lands northwest of the Derryveagh mountains will not have visibility.

North of Site – R250, 254, 261, R245 Letterkenny and Glenveagh National Park,

- Visibility is shown in the vicinity of the site, and to the north of the site along the R250 where some open views are available, and this area is represented by Viewpoints 8,9,15. Visibility along parts of this road will also be reduced by areas of mature forestry plantations, however views may change over time with the felling and re-planting.
- A local road between the R250 and the R252 (L163 north-west of the site) will also have views of the turbines. Dwellings are more numerous on the northern part of this road near the junction with the R250. There are areas including Tullyhonour and Rathdonnell which will have theoretical visibility, and some houses here are likely to have open views of some of the proposed turbines which are at relatively close proximity. The proposed substation near Tullyhonour is likely to be screened from this road by forestry, and the road is already traversed by the 110kV line. However the steel pylons adjacent to the substation may be visible from a short section of the road. Dwellings are more numerous along the southern parts of this road where it runs along the Elatagh river, however these areas will not have theoretical visibility.
- **Glenveagh National Park:** The ZTV shows that there is limited theoretical visibility from Glenveagh National Park. The only location of theoretical visibility along the R254 is represented by Viewpoint 1, and blade tips only are visible in this view.
- There is theoretical visibility shown along parts of the Lough Inshagh walk, as well as the upper slopes of some of the mountains. Visibility is possible in some of the southern section of the Lough Inshagh walk as indicated in the ZTV, where views are open, while the lower parts of the path as it approaches Lough Gartan will be screened by vegetation (scrub and coniferous trees). While views of the proposed Drumnaugh turbines will occur at higher elevations where the path is more open, visibility will also depend on the weather conditions, as was evidenced by the mixed visibility during the site visit.
- It should be noted that along the upper section of the path, views are panoramic and are not just focussed on the direction of the proposed windfarm project. The proposed turbines are, in good weather conditions, likely to be visible along with more distant existing turbines.
- Adjacent to Lough Gartan, St Colmcille's Stone is noted as the birthplace of St. Colmcille and the location of a mound. This area has theoretical visibility of between 1 and 3 turbines as shown in the ZTVs, **Figure 12-8 and 12-9**, and these are likely to appear as distant blade tips behind the ridge of higher ground.
- Viewpoints 2,3,4 represent areas north of the site between Newmills and Church Hill, which indicate theoretical visibility of views of the highest number (12) of turbines, however Viewpoint 2 Church Hill shows no actual visibility of the turbines.
- While theoretical visibility is shown in Letterkenny, in reality built form will screen much of these views, and viewers in the town are likely to be more focussed on views in the

immediate vicinity, Viewpoints 5,6,7 represent the views from the roads to the north and west of Letterkenny.

East of Site – Local Roads, N13, Ballybofey/Stranorlar and Convoy

- The ZTV shows that there is visibility directly east of the site, but in reality, mature coniferous plantations are likely to reduce visibility. The road to Drumkeen has areas of visibility, which will be reduced by intervening vegetation.
- Some open views of lower numbers of turbines are available on the local road north of Cark Junction to Newmills (see Viewpoint 17).
- The town of Manorcunningham has some theoretical visibility, while most of the N13 Letterkenny-Stranorlar road has no theoretical visibility of the turbines.
- Raphoe town does not have visibility of the turbines, with some visibility in Convoy, though all settlements will have less visibility than shown as a result of built form and vegetation. Viewpoint 12 represents a local road where there is theoretical visibility southwest of Convoy.
- To the southeast, the town of Stranorlar shows no visibility, while Ballybofey town has visibility of blade tips only. Viewpoint 14 illustrates visibility from a slightly elevated rural road, south of Ballybofey.

South of Site - Finn Valley, Bluestacks, Sli Dhun na nGall

- Immediately south of the site is an area occupied by windfarms with scattered farms on the valley slopes, where visibility of all proposed 12 turbines is likely, though many other existing turbines are also visible in this area. Further south, the base of the Finn Valley will not have visibility, with only the occasional glimpse of blade tips likely as shown by comparison of the Hub Height and Tip Height ZTVs. The only part of the Finn valley with more visibility is at Fintown, illustrated by Viewpoint 10, where between 1-6 turbines are theoretically visible from the village.
- A section of the Sli Dhun na nGall runs west of the Elatagh river, and over Meenirroy Hill which is within the ZTV .
- The southern slopes of the Finn valley will have some visibility, and Viewpoint 11 and 13 illustrate this, including some parts of the Sli Dún na nGall, a waymarked trail. However, the majority of the trail in this area is not shown to have visibility of the Drumnahough turbines.
- Several minor roads lie to the south and southwest of the site. Sections of the local road L-2073 west and southwest of the site have theoretical visibility and the area is sparsely populated. However where dwellings are more numerous, along the southern parts of this road where it runs along the Elatagh river, there will be no visibility of the turbines.

West of Site –Fintown, R254, R252, Sli Dhun na nGall

- Close to the site, a section of the Sli Dún na nGall will have theoretical visibility, mainly where it leaves the road network. As noted above, the Finn Valley and R252 has very little visibility, with the viewpoint 10 at Fintown representing this location. The eastern slopes of Aghla Mountain, as well as the southern slopes of the Finn Valley have theoretical visibility.
- The R253 from Glenties to Ballybofey has theoretical visibility only at one location near Clogher North.

- South of this, there is theoretical visibility on the northern slopes of the Bluestack mountains of Lavagh More, Croaghbarnes, Crockakenny, and Croaghnageer but no visibility from Binmore or the peaks further south.

Northern Ireland

The border with Northern Ireland is approximately 16 kilometres from the proposed turbines, at its closest point, south and east of the N15. Theoretical visibility is not widespread, and the ZTV Map shows several limited areas with some theoretical visibility, in the following areas:

- The closest area with theoretical visibility, at a distance of between approximately 16 and 19 kilometres to the south is the area around Cross Hill and Meenbog Hill. This is a relatively remote area east of the N15 road and south of Stranorlar/Ballybofey, characterised by extensive coniferous forestry plantations with few dwellings. The majority of the area at Cross Hill is covered by coniferous forestry so no visibility will occur. Further east, coniferous forestry, moorland and agricultural land are the main landcover. The closest visual receptors are residences at approximately 19 kilometres.
- A small area of visibility occurs, at approximately 16.5 kilometres south west of the proposed turbines, on the higher ground east of Clady. A limited area of theoretical visibility is shown east of Strabane, at a distance of approximately 28 kilometres east of the proposed turbines, though no theoretical visibility in the main town centre is indicated. A very small proportion of the Sperrin AONB is shown to have theoretical visibility but at a distance of approximately 29 kilometres from the nearest turbine.

It is concluded that the project is unlikely to result in significant transboundary visual impacts.

12.3.3.3 Visualisations

It should be noted that while the viewpoint locations were chosen by a landscape consultant prior to CSR's engagement, these locations had been reviewed by Donegal County Council, and additional views which the Council had requested had been produced. CSR have reviewed, visited and approved these locations.

Viewpoint selection of the viewpoints submitted with the previously permitted Drumnahough application on the site, as well as viewpoints selected for the permitted adjacent Lenalea turbines. Viewpoints include 12 viewpoints from locations represented in the previously permitted windfarm on site, along with a further two viewpoints from the south east (12,14) as it was considered further visualisations from this area would be of benefit. These locations were reviewed by Donegal County Council in November 2019, and following a request by the Council a further three locations were subsequently included (15, 16 and 17). Two of the viewpoints requested were not located within the Zone of Theoretical Visibility, but some theoretical visibility exists in between these two locations, near Ballystrang Hill. Therefore viewpoints were taken very close to these locations in order to get a more representative views which may show visibility. The locations of these viewpoints are shown in reduced format **Figure 12-8** and is included in Section 12.3.3.1 above as well as in EIAR Volume 4. Viewpoint locations are listed below in **Table 12-6**:

Table 12-6: Viewpoint Locations

Viewpoint No	Viewpoint Description
1	View from Glenveagh National Park
2	View from R261 in Church Hill
3	View from R254 to Glenveagh
4	View from R251 at Drummacoo
5	View from R250 on outskirts of Letterkenny
6	View from N56 past Letterkenny Hospital
7	View from R245 at Drumnaskea
8	View from R250 at Meenboll Hill
9	View from R250 at Breenagh
10	View from Scenic Viewpoint in Fintown
11	View from third class road in townland of Boulytfree
12	View form local road/cycle route in townland of Findrum
13	View from third class road Slí Dhún na nGall
14	View from local road in townland of Carrickmagarth
15	View from R250 in townland of Drumnahough
16	View form local road in the townland of Kirkneedy
17	View from local road in the townland of Ballystrang

Viewpoints 1-17 should be read in conjunction with the ZTV Maps and Photomontages in EIAR Volume 4.

It should be noted that the tables below also refer to Cumulative impact – this relates to the likely change in the viewpoint, where combined visibility (visibility of the proposed development in addition to another existing or permitted windfarm) is visible. This is compared with the appearance of the project being assessed on its own. Cumulative effects are fully described in Section 12.3.4.

Viewpoint 1 - View from R254 in Glenveagh National Park (10.5km from the nearest turbine)
Representative of: The only road within the National Park, which is also an EHSA

Existing View Description

This view shows a narrow road in the foreground, with a wide expansive area of moorland, on both sides of the road. The viewing location is elevated, and long views along a wide, shallow valley are defined by a series of hills. In the distance, blocks of coniferous forestry are visible on the valley sides, while an area of woodland with some farmland is visible on the higher ground at the end of the valley, where there are also some scattered buildings. There is a strong sense of remoteness and wilderness in this view. (It should be noted that on the day of the site visit, the existing turbines that should have been visible west of this viewpoint were not seen due to poor visibility).

Visual Receptor Sensitivity: High sensitivity

Magnitude of Change:

Negligible – only blade tips are visible behind the ridge and these are difficult to distinguish. The overall character of the Park is not affected, and this area of visibility occurs along a very short section of the road as shown in the Tip Height ZTV.

Significance of Visual Effect: Not Significant, adverse.

Cumulative Effect : None.- no other turbines visible in this location.

Viewpoint 2 - View from R261 in Church Hill (9.5km from nearest turbine)

Representative of: View from a settlement, on a regional road in an elevated location to the north of proposed turbines

Existing View Description

This is a view from the village of Church Hill, which is a village with buildings predominantly on the west side of the road, which take advantage of extensive views to the east. This view is near the junction at the southern end of the village, looking towards the south. The road lies in the foreground, as well as buildings on either side. In the middle ground, the R261 road drops in elevation and marginal grassland and scattered dwellings are visible on either side. The road rises again in the background, where an area of vegetation and coniferous forestry is visible on a ridge. No other turbines are visible in this view, as they are screened by intervening vegetation.

Visual Receptor Sensitivity: Medium sensitivity

Magnitude of Change: None. The proposed Drumnahough turbines are screened by the intervening vegetation and the dwelling in the centre of the view.

Significance of Visual Effect: No effect.

Cumulative Effect: No effect.

Viewpoint 3 - View from R254 to Glenveagh (7.8km from nearest turbine)

Representative of: A view from a regional road to the north of the proposed turbines, with existing turbines in the view.

Existing View Description

The existing view shows a view with an area of flat, wet grassland in the centre of the view with scattered dwellings in the middle ground, and coniferous forestry to the rear. On either side, the land is undulating, with fields of grassland divided by hedgerows and some scattered dwellings and area of woodland. In the distance, a ridge of higher ground is visible. Some existing turbines are visible against the skyline, but these are distant, and not key elements in the view.

Visual Receptor Sensitivity: Medium

Magnitude of Change: Medium. The proposed turbines are visible in the centre of the view, with 8 of the turbines visible, or partly visible. The turbines are set in between the areas of higher ground and are framed in this view, being lower than the ridgelines on either side.

Significance of Visual Effect: Slight, neutral. Though clearly visible, they are not dominant, with a limited spatial extent and 4 of the turbines are hidden from view.

Cumulative Effect: Not Significant/Slight, neutral. The existing turbines are distant. The proposed Drumnahough turbines will increase the extent of turbines visible in the view, however the permitted Lenalea turbines, will be mainly hidden behind the topography.

Viewpoint 4- View from R251 at Drummacanoo (7.3km from nearest turbine)

Representative of: A view from the R251, a Regional Road, to the northeast of the site with other windfarms visible

Existing View Description

The existing view shows the wet, marginal grassland with areas of deciduous and coniferous woodland in the foreground, and the middle ground, with some sheds partially visible through the vegetation. In the distance, an undulating ridge of higher ground is visible, with moorland and some coniferous forestry. Existing turbines are visible on the upland in centre of the view. However it should be noted that the proposed turbines are not directly in the line of view as one travels along the road.

Visual Receptor Sensitivity: Medium

Magnitude of Change: Medium. The proposed Drumnahough turbines will be visible along the ridgeline, to the right of the existing turbines. These will occupy a medium spatial extent in the view, and the turbines are mostly widely spaced.

Significance of Visual Effect: Moderate, neutral. Though the turbines are clearly visible, over a moderate extent of the view, they are not dominant and display a simple arrangement.

Cumulative Effect: -Moderate, neutral. The proposed turbines will extend the extent of turbines visible, however the permitted Lenalea turbines will be screened by intervening vegetation.

Viewpoint 5 - View from R250 on outskirts of Letterkenny (10.5 km from nearest turbine)**Representative of:** A view from the outskirts of Letterkenny, on the R250.**Existing View Description :**

The existing view shows the wide regional road and adjacent footpath, with dense roadside trees on the left of the image, which travels along the Swilly valley west of Letterkenny. To the right, the ground slopes up to a partly wooded hill in the middle ground. In the distance, a ridge of more open moorland is visible, with some woodland on the lower slopes.

Visual Receptor Sensitivity: Medium

Magnitude of Change: Low. Several of the proposed Drumnahough turbines will be visible in a narrow cluster in the centre of the view. Partial views of 6 turbines are likely, however 3 nacelles are visible. These occupy a very limited spatial extent of the view.

Significance of Visual Effect: Slight, neutral.

Cumulative Effect: None. The existing and permitted turbines are screened by the dense roadside vegetation.

Viewpoint 6- View from N56 past Letterkenny Hospital (14.4km from nearest turbine)**Representative of:** An elevated view from the northern outskirts of Letterkenny on a National Road

Existing View Description: This view shows an elevated view, on the outskirts of Letterkenny town, with the N56 and a number of cars in the foreground. The road is flanked by grass and vegetation, becoming built up with dwellings adjacent to the road in the middle ground. The road slopes downhill, away from the viewer, and in the distance, a ridge of higher ground with open moorland and area of conifer plantation, is visible, in the direction of travel. Existing turbines are visible along this ridge, (though some turbines are difficult to distinguish due to weather conditions), and some are screened by the roadside vegetation.

Visual Receptor Sensitivity: Low.

Magnitude of Change: Negligible. Three of the proposed turbines will be visible, however only one hub/nacelle is clearly visible. The spatial extent of the proposed turbines is very limited, and the addition of the proposed turbines will not make a noticeable change to the view.

Significance of Visual Effect: Imperceptible, neutral.

Cumulative Effect: Imperceptible. Though other turbines are clearly visible, and the proposed development slightly increases the spatial extent of turbines visible, it will not make a noticeable difference to the overall view.

Viewpoint 7 - View from R245 at Drumnaskea (18.8km from nearest turbine)**Representative of:** A regional road in an elevated location north of Letterkenny

Existing View Description: This is a wide, expansive view from the Regional road on the northern approach to Letterkenny from Rathmelton. Farmland and a dwelling are visible adjacent to the road, and road slopes down towards an area of woodland in the middleground. In the distance, a long ridge of higher ground is visible. A few of the existing turbines are just visible between the trees to the right of the image, but are mainly screened by the vegetation.

Visual Receptor Sensitivity: Medium.**Magnitude of Change:** None. The proposed turbines are not visible.**Significance of Visual Effect:** None – not visible.**Cumulative Effect** None.**Viewpoint 8 - View from R250 at Meenboll Hill (4.7km from nearest turbine)****Representative of:** An elevated view from the R250, the main regional road north of the proposed turbines.

Existing View Description: The view shows an elevated view with relatively mature coniferous plantations in the foreground, and a series of rolling hills in the middle ground. These hills which include Tullytrasna, Culliagh and Three Tops, are partly moorland, and partly covered with large tracts of coniferous forestry. In the distance, other areas of high ground are glimpsed. This view is an example of an upland, working rural landscape dominated by coniferous plantations. To the centre and right of the view, a considerable number of existing turbines are visible, with some screened by forestry.

Visual Receptor Sensitivity: Medium.

Magnitude of Change: Medium. Eleven of the 12 turbines will be visible in this view, and these will appear in a cluster in the centre of the view. The turbines appear at relatively close proximity, and of medium spatial extent, while existing turbines are seen in the background. It should be noted that changes in forestry (maturing and felling of trees) may also open up or reduce visibility over time.

Significance of Visual Effect: Moderate, adverse. Though the landscape is dominated by coniferous forestry, and there are considerable wind turbines which are more distant, the proposed turbines will be clearly visible in the foreground and bring an element of visual clutter into the landscape.

Cumulative Effect Moderate, adverse

Viewpoint 9 - View from R250 at Breenagh (3.2 km from the nearest turbine)**Representative of:** A view in close proximity to the site from the R250 to the north**Existing View Description:**

The existing view shows a view of gentle, undulating landscape of grassland and belts of woodland in the foreground and middle ground. Some scattered dwellings are visible, but these are unobtrusive in the view. In the distance, a ridge of higher ground is seen, with existing wind turbines visible along the ridge in a relatively compact cluster. It should be noted that this view is not in the direction of travel along the road, which is east-west, but off to the side, looking south.

Visual Receptor Sensitivity: Medium

Magnitude of Change: Low. Though seven of the 12 turbines are visible, six nacelles are easily distinguished. One turbine is clearly visible in the centre, with most of the tower also visible, with the remaining turbines protruding behind the ridge. Some of the turbines are partly visible, being screened by some intervening vegetation where they do protrude above the ridge. The character of the overall view is not dominated by the turbines, and though the spatial extent is increased, the turbines to the left appear in the same field of view as the existing turbines, with those on the right appearing more widely spaced.

Significance of Visual Effect: Slight, adverse.**Cumulative Effect:** Slight, adverse**Viewpoint 10- View from Scenic Viewpoint in Fintown (13.6km form the nearest turbine)****Representative of:** A scenic viewpoint, within an area of EHSA on Lough Finn and in a settlement.**Existing View Description**

The existing view is taken from an amenity area and the location of a protected view. The Scenic Amenity Designations Map published by Donegal County Council indicates this view from a number of locations from the R250 to the north of the Lough Finn, with the direction of the scenic view towards the mountains to the southeast, including Aghla and Scraigs mountains. The view shows a parking area and seating area in the foreground, with dwellings lining the road to the left of the view, while Lough Finn and Scraigs mountain are visible to the right of the view. In the centre of the view the village of Fintown is visible, set in some trees. In the distance, a ridge of higher ground is partly visible through the trees.

Visual Receptor Sensitivity: High.

Magnitude of Change: Low. In the distance, behind the ridge, a number of turbines will be visible. Three turbine nacelles and the tips of three other turbines will be visible. The turbines are sited in a narrow cluster, with a very limited spatial extent. Though these turbines are visible, they are in no way dominant, and they are not directly in the direction of the protected view which is over the higher ground to the southeast of the viewpoint.

Significance of Visual Effect: Slight adverse.**Cumulative Effect:** None – no other turbines are visible.

Viewpoint 11 - View from third class road in townland of Boulyfree (5.7km from nearest turbine)

Representative of: A rural road on the southern slopes of the Finn Valley (Crocknahamid)

Existing View Description:

This view shows a view from an isolated, elevated rural road, with a field dominated by rushes sloping away from the viewer, towards the Finn valley. A band of trees is visible in the middleground and hides the rest of the valley slopes. On the opposite side of the valley, a patchwork of fields and clumps of trees are visible, along with scattered buildings, while the upper slopes and ridges are areas of open moorland interspersed with blocks of coniferous plantation. Some existing turbines are visible in the centre and a high proportion of turbines are visible to the right of the view.

Visual Receptor Sensitivity: Medium.

Magnitude of Change: Medium. The proposed Drumnahough turbines will be partly visible behind the ridge. Nine of the turbine nacelle/hubs will be visible, with several appearing in the foreground in the centre of the view, where they appear in front of existing turbines. Other proposed turbines appear to the left of the central cluster, and these do increase the spatial extent of the turbines visible in the image.

Significance of Visual Effect: Slight to Moderate, adverse. Though in relatively close proximity, the turbine are not in any way dominant. The proposed turbines increase the spatial extent somewhat to the left of the view, however the other six turbines appear in front of existing turbines.

Cumulative Effect: Moderate, adverse

Viewpoint 12- View from local road/cycle route in townland of Findrum (14km from nearest turbine).

Representative of: Located on the north-west cycle way route and a local road

Existing View Description: This view shows the view over a settled rural landscape, on the outskirts of Convoy, with scattered buildings along the local road. As the road slopes away from the viewer, flatter fields, clumps of trees and the sports pitches are evident with the lighting poles a noticeable feature. Some of the town's buildings and areas of woodlands are visible. In the distance, a backdrop of rolling hills with scattered buildings and a high number of existing wind turbines are visible.

Visual Receptor Sensitivity: Low.

Magnitude of Change: Low. The proposed turbines are difficult to distinguish from the existing turbines, as the hubs or nacelles of four of the turbines only, will be visible, the remaining turbines either screened completely or protruding as blade tips from behind the ridgeline.

Significance of Visual Effect: Not Significant, adverse. Two of the turbines occupy a 'saddle' between two areas of higher ground where turbines are already visible, so the two clusters appear linked. The spatial extent of the turbines visibility is not increased but these are a slight increase in visual clutter with additional turbines.

Cumulative Effect: Not Significant, adverse.

Viewpoint 13 - View from third class road Slí Dhún na nGall (9.3km from the nearest turbine)

Representative of: A view from a waymarked trail, and a rural road.

Existing View Description :

This view shows a view of fields with scattered dwellings and tree clumps in the foreground, with a gently sloping valley evident in the middle ground. The valley sides are a patchwork of fields, dwellings and clumps of trees, with tracts of moorland evident on the less settled higher ground. In the distance, the view down the valley is terminated by a ridge of higher ground, with vegetation, fields and scattered buildings on the lower slopes and moorland, forestry and wind turbines evident on the higher ground, with some visible near the peak of higher ground to the right of the view.

Visual Receptor Sensitivity: Medium-High.

Magnitude of Change: Low. Four of the proposed 12 Drumnahough turbines are visible, two are clearly visible to the left of the exiting 'cluster' of turbines, while the remaining two turbines are difficult to distinguish from the existing turbines. The spatial extent is not increased as a result of the Drumnahough turbines and they are seen at a lower level than many of the existing turbines, and fit in well to the topography.

Significance of Visual Effect: Slight, neutral. Four of the proposed turbines are visible but only two are easily noticeable in the context of the existing turbines.

Cumulative Effect: Not Significant, adverse.

Viewpoint 14 - View from local road in townland of Carrickmagrath (11.8km from the nearest turbine).

Representative of: A viewpoint from a local road and close to the north-west cycleway

Existing View Description: This view is taken from a local road south of Ballybofey, close to the north west cycle trail. This view overlooks a field of marginal grassland, with trees restricting views in the middle ground. Behind the trees, views of the landscape include a hill to the left of the image, largely covered in conifers, and further in the distance, a ridge of higher ground to the centre and right of the view. These ridges are clothed in moorland and swathes of coniferous forest, with a high number of wind turbines located along this ridge. (Not all turbines are clearly visible due to weather conditions).

Visual Receptor Sensitivity: Low.

Magnitude of Change: Negligible. The blade tips of six of the Drumnahough turbines will be visible in this view, in the centre of the view and amongst existing turbines. No hubs/nacelles are visible. The spatial extent of the turbines visible is not increased.

Significance of Visual Effect: Imperceptible, adverse. These turbine blade tips will be very difficult to perceive at this distance, as they are mainly hidden by the ridge, and also given the high number of existing wind turbines which exist in the view. The effect is considered adverse as the distant blade tips are likely to increase the sense of visual clutter.

Cumulative Effect: Imperceptible.

Viewpoint 15 - View from R250 in townland of Drumnahough

Representative of: A view from the R250 north of the site, and as requested by Donegal Council.

Existing View Description: This view shows a view of undulating landscape seen from the R250, with fields sloping upward from the road, and few scattered buildings on the sloping ground. Clumps of trees are interspersed with fields. In the background, a ridge of higher ground is evident in the centre of the view, which is mainly covered in moorland, and another ridge to the right of the image, also with moorland on its upper slopes. These ridges have a more rugged landform which contrasts with the smoother undulating grassland on the lower slopes. A junction is visible to the right of the image.

No other turbines are visible in this view, as they are screened by vegetation.

Visual Receptor Sensitivity: Medium

Magnitude of Change: Medium. Seven of the turbines are visible, with three visible only as blade tips behind vegetation, and one blade tip just barely visible to the right of the image. Four turbine hubs are clearly visible, appearing at close proximity. The spatial extent is considered medium, and while four of the turbines appear prominent, these are relatively close to each other and appear as a small cluster.

Significance of Visual Effect: Moderate, neutral. Though these turbines are clearly visible, they are limited in extent. The composition of the view is a simple one, with little visual clutter, large tracts of grassland, trees, and expanses of moorland defining the view. The turbines, though visible, do not result in visual clutter and are considered neutral.

Cumulative Effect: None – no other turbines are visible.

Viewpoint 16 - View from local road in the townland of Kirkneedy

Representative of: A view from a local road to the northeast of the site, and a view requested by Donegal County Council. (It should be noted that this viewpoint location is close to that requested by the Council but was moved slightly to obtain a more open view.)

Existing View Description

This view shows an elevated expansive view in a remote location, bordered by grassland and heath/bogland, In the distance, a band of coniferous forestry is visible across the entire view, with some marginal fields and scattered dwellings visible to the left of the view. Beyond the belt of trees, several wind turbines are evident along a ridge of higher ground to the left and the centre of the image, with turbines to the right of the image screened by forestry.

Visual Receptor Sensitivity: Medium.

Magnitude of Change: None. The proposed Drumnahough turbines are not visible.

Significance of Visual Effect: None – not visible.

Cumulative Effect: None.

Viewpoint 17 - View from local road in the townland of Ballystrang

Representative of: A local road in a remote location to the northeast of the proposed turbines, and a view close to a location requested by Donegal County Council. It should be noted that a view from the junction at Cark Bridge was requested, however this location showed no visibility on the ZTV and a location further north along this road was chosen to represent a location with theoretical visibility.

Existing View Description

This view shows a narrow road adjacent to an expanse of wet grassland/bogland in the foreground, with some wet grassland and a band of trees in the middle ground.

The ground slopes upwards to a ridge, in the centre of the view, composed mainly of open moorland with a band of coniferous forestry. A number of wind turbines are visible along and behind the ridge, appearing at close proximity. A more distant ridge of higher ground is also visible to the left of the image, with more turbines along the ridge. A small cluster of buildings to the right of the image is the only settlement visible. An overhead electricity line on wooden poles traverses the view.

The area is remote, and the view is considered to have scenic qualities, and retains a sense of wilderness, though man made interventions are evident.

Visual Receptor Sensitivity: Medium to High.

Magnitude of Change: Negligible. Four turbines are partly visible, with two appearing as blade tips only.

Significance of Visual Effect: Not Significant, adverse.

Cumulative Effect: Not Significant, adverse.

12.3.3.4 Summary of Visual Effects

Table 12-7 below summarises the visual effects at each of the 17 Viewpoint locations:

Table 12-7: Viewpoint Locations and Visual Effects

Viewpoint No	Viewpoint Description	Visual Receptor Sensitivity	Significance of Effect	Cumulative Effect
1	View from Glenveagh National Park	High	Not Significant, adverse	None
2	View from R261 in Church Hill	Medium	None	None
3	View from R254 to Glenveagh	Medium	Slight, neutral	Not Significant/Slight
4	View from R251 at Drummacanoo	Medium	Moderate, neutral	Moderate, neutral
5	View from R250 on outskirts of Letterkenny	Medium	Slight, neutral	None
6	View from N56 past Letterkenny Hospital	Low	Imperceptible, neutral	Imperceptible, neutral
7	View from R245 at Drumnaskea	Medium	None.	None
8	View from R250 at Meenboll Hill	Medium	Moderate, adverse	Moderate, adverse
9	View from R250 at Breenagh	Medium	Slight adverse	Slight, adverse
10	View from Scenic Viewpoint in Fintown	High	Slight, adverse	None
11	View from third class road in townland of Boulyfree	Medium	Slight to Moderate, adverse	Moderate, adverse
12	View from local road/cycle route in townland of Findrum	Low	Not Significant, adverse	Not Significant, adverse
13	View from third class road Slí Dhún na nGall	Medium-High	Slight, neutral	Not Significant, adverse
14	View from local road in townland of Carrickmagarth	Low	Imperceptible, adverse	Imperceptible, adverse
15	View from R250 in townland of Drumnahough	Medium	Moderate, neutral	None.
16	View from local road in the townland of Kirkneedy	Medium	None	None
17	View from local road in the townland of Ballystrang	Medium- High	Not significant, adverse.	Not Significant, adverse

Visual Effects Summary

The assessment of the 17 viewpoint locations shows that the visual effects range from those with No visual effect (3), to Moderate effect (3). Two Viewpoints were considered Imperceptible, with three considered Not significant, and five were considered Slight and one Slight/Moderate.

The most pronounced effects (Moderate) were found in three viewpoints to the north of the site – Viewpoints 4, 8, and 15. Two of these are along the R250 immediately north of the site, where there are open views from elevated locations, and the turbines will appear at close proximity while Viewpoint 4 lies further north along the R251.

These viewpoints are relatively close (between 4.7km and 7.3km), north of the proposed development. Viewpoints 4 and 15 are considered neutral in quality, with Viewpoint 8 considered adverse. However it is noted that a number of other viewpoints (1,2,3,9) are also to the north of the site and range from No effect to Slight effect.

The quality of the visual effect, where visual effects occur, ranges from neutral (6 views) to adverse (8 viewpoints). Neutral effects occur where the proposed turbines appear to be of suitable scale and siting which complements the landscape pattern, while adverse effects occur where the turbines appear to add to a sense of visual clutter, either in combination with other structures or turbines.

Sensitive receptors – Glenveagh, Fintown and Sli Dun na nGall

Locations where viewers were considered of High sensitivity (areas designated as EHSA, National Park and a protected view) include Viewpoint 1 Glenveagh, Viewpoint 10 Fintown, and Viewpoint 13 was considered Medium-High. Visual effects at these locations were considered Not Significant, Slight in the case of Glenveagh and Fintown. Viewpoint 1 Glenveagh shows minimal visibility of the turbines. Viewpoint 13, on the Sli Dun na nGall, was Slight and neutral.

Other viewpoints

The remaining viewpoints were considered to be locations where viewers would be low or medium sensitivity, and the majority of viewpoints were found to be Slight. It should be noted that there are few locations where all 12 of the turbines were visible and that in many views several turbines were hidden by the topography.

In general, dwellings are scattered in the vicinity of the site and the area is relatively remote. However there are some scattered dwellings to the north, northwest and southwest of the site. One of the closest viewpoints to residential receptors include Viewpoint 15, which is similar to views which would be available from the northern part of the L-1632, where there are a number of dwellings. A low number of dwellings are located on a cul-de-sac road northwest of the site at Rathdonnell, where the visual effects are likely to be similar or more pronounced than Viewpoint 15, as the road is at a lower elevation and closer to the turbines. Viewpoints 16 and 17 represent a local road to the east with a low number of scattered dwellings.

In summary, the visual effects from the viewpoints range from No effect to Moderate effect. It should be noted that there were 3 Viewpoints considered to have a Moderate visual effect, with only Viewpoint 8 considered Moderate and adverse. As outlined in **Table 12-3**, Moderate is the level below Significant. None of these three viewpoints are considered of High sensitivity, or are at sensitive locations such as an area of EHSA, scenic view or within the National Park.

Viewpoints 1, 10 and 13 which are of higher sensitivity than the other viewpoints, representing the National Park and a protected view and both areas of EHSA, were considered Not Significant and Slight, adverse effects. These are at some distance from the proposed development.

12.3.3.5 Replanting Sites - Visual Effects

Rathgoggin, Co Cork/Limerick.

Visual Receptor Sensitivity

Visual Receptors in the vicinity of the replanting site include the residents in the four dwellings along the road, and there is little visibility from the road. The residents are considered of Medium-High sensitivity.

Magnitude of Change

Over time, the proposed planting is likely to result in restricted views from the rear of the houses as the trees grow. While trees and hedgerows are visible in the distance, the land behind the houses is open grassland at present. This will over time cause a Low to Moderate degree of change to the views.

Significance of Effect

The change to the views is considered to be Negligible in the Short term, after planting, and Slight in the Medium to Long term, once the trees are well established and begin to restrict views. However the maintenance of existing field boundaries and the setback buffer will contribute to lessening the visual effect. The visual effect is considered neutral, and the mixture of broadleaf and conifers will create a partly permeable forest.

Lisroe and Kilcolumb, Co. Clare

Visual Receptor Sensitivity

Visual Receptors in the vicinity of the replanting site include the residents in a dwelling adjacent to the eastern portion of the replanting lands, while there are several dwellings set back from the road to the north and south. These are the closest residents and are considered Medium sensitivity. Road users are also considered of Medium sensitivity.

Magnitude of Change

The proposed forestry planting will cause some changes in the immediate vicinity of the dwellings, but the planting will be adjacent to one dwelling and at a distance from the other dwellings. The magnitude of change is considered Negligible in the area to the south where it is far from residential receptors and the road, to Low in the replanting areas along the road.

Significance of Effect

The change to the views is considered to be Imperceptible in the Short term, after planting, and Not Significant to Slight in the Medium-Long term, once the trees are well established. The maintenance of existing field boundaries and the set-back buffer will contribute to lessening the visual effect. The visual effects are considered adverse where the plantations occurs along the main road, as they will potentially restrict some long distance views and create a sense of enclosure.

Craghera, Co. Clare***Visual Receptor Sensitivity***

Visual Receptors in the vicinity of the replanting site include the residents in dwellings adjacent to and opposite the eastern portion of the replanting lands. These are the closest residents and are considered Medium sensitivity. Road users are also considered of Medium sensitivity.

Magnitude of Change

The proposed forestry planting will cause some changes in the immediate vicinity of the dwellings, but the planting will be adjacent to two dwelling and opposite two dwellings where it is likely to restrict views, over time. The magnitude of change is considered Low where it is adjacent to, and where it is opposite the dwellings. The proposed replanting area to the west is considered Negligible. As noted below the plantation will change over time.

Significance of Effect

The change to the views is considered to be Imperceptible in the Short term, after planting, and Not Significant to Slight in the Medium-Long term, where it is visible from dwellings, once the trees are well established. The maintenance of existing field boundaries and the set-back buffer will contribute to lessening the visual effect. The visual effects are considered adverse where the plantations occurs along the main road, and in the vicinity of houses as they will potentially restrict some long distance views and create a sense of enclosure. The area to the west/south is considered neutral in terms of visual effects.

Pullaorragune, Tuam, Co. Galway***Visual Receptor Sensitivity***

Visual Receptors in the vicinity of the replanting site include the residents in dwellings which overlook the replanting site. These are considered of Medium sensitivity while road users are considered of Low sensitivity.

Magnitude of Change

The proposed forestry planting will cause some changes in the immediate vicinity of the dwellings, where the views will be restricted over time, from the rear of the dwellings. The magnitude of change is considered Low. As noted below the plantation while change over time.

Significance of Effect

The change to the views is considered to be Imperceptible in the Short term, after planting, and Not Significant to Slight in the Medium-Long term, once the trees are well established. The maintenance of existing field boundaries and the set-back buffer will contribute to lessening the visual effect. The visual effects are considered neutral at first, but adverse in the long terms, as they will restrict views to the fields and deciduous hedgerows.

12.3.4 Cumulative Effects

Cumulative impacts can be defined as the additional changes caused by a proposed development in conjunction with other similar developments or as the combined effect of a set of developments, taken together, as noted by SNH (*Assessing the Cumulative Impact of Onshore Wind Energy Development 2012*).

The GLVIA refers to the SNH (2012) guidelines as specialist advice, and also notes the evolving nature of cumulative effects assessment in general. It notes that in most cases, the focus of the cumulative assessment will be on the additional effects of the project in conjunction with other developments of the same type.

In this case it is the additional changes caused by the proposed project that are under consideration as noted above.

The SNH guidance focuses on the effect of the proposed wind farm with other existing, permitted and proposed wind farms. It notes that proposals within the planning system where the information is in the public domain should be considered. This therefore takes into account the existing and permitted wind energy developments in the vicinity.

No references are made by the SNH guidance to other types of development, and the focus of the cumulative effects assessment in the SNH guidance, (and also in the DOEHLG/DEHPLG guidance) is on other wind energy developments. The SNH guidance states:

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

However, in order to give a complete assessment, other development types were reviewed. While there are a number of permitted developments (including residential developments) in the vicinity, the scale and nature of these developments are such that the addition of the proposed wind farm is not considered to result in to cumulative landscape and visual effects. However this section does recognise potential effects in relation to ongoing land use activities in the vicinity.

At a meeting with An Bord Pleanála, the applicant was requested to consider the worst case scenario in relation to an existing wind energy development, where the nearby 25 Cark wind turbines were commissioned in 1997 and the long term use of this site is not clear. However, as these turbines are currently included as existing turbines in the visualisations and ZTV maps, this is considered to represent the currently foreseeable worst case scenario (i.e. their continued operation or repowering with the same locations and dimensions), as opposed to their decommissioning is being considered.

Should the Cark Wind Farm site be re-powered, this will entail a planning permission and it is not possible to speculate on potential layouts/heights. Taller turbines and a change in the number of turbines may give rise to differing cumulative effects, particularly visual effects. However, should the Cark site be decommissioned, this may lessen cumulative landscape or visual effects.

Wind farms are an established land use in the area and now are an element of the landscape character of the Cark Mountain Uplands, as well as from areas of the wider landscape. The list of wind farms considered in the 30km cumulative study area is included below.

Table 12-8: Existing and permitted wind farms

WIND FARM	STATUS
Ballystang	Constructed
Cark	Constructed
Cark Extension	Constructed
Culliagh	Constructed
Lenalea	Permitted
Lurganboy	Constructed
Meenagrauv	Constructed
Meenahoma	Constructed
Meenbog 1	Constructed
Anarget	Constructed
Barnesmore	Constructed
Cronalaght	Constructed
Meenadreen 1	Constructed
Meennadreen 2	Constructed
Meenbog 2	Permitted
Meentycat	Constructed

A number of ongoing activities in the landscape include commercial forestry, small scale peat cutting and agriculture. It is envisaged that these will continue to be carried out, and these represent landscape uses in a working upland landscape. These have been included in the baseline information also. However the main element relevant to the LVIA are the other wind farms. Further details are included in Chapter 2, as well as an illustration of wind farms in the vicinity. **Figures 12-10 and 12-11** show other windfarms included in the cumulative assessment.

12.3.4.1 Cumulative Landscape Effects

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

Magnitude of Change

Cumulative landscape effects include the effects as a result of the proposed development along with other wind farm developments, on the landscape character. The landscape in the immediate vicinity to the east of the site contains a number of wind turbines, and the addition of the proposed development to these existing wind farms is considered to have a Low to Moderate magnitude of change on the landscape character when viewed from the site and immediate vicinity.

Two Cumulative ZTV maps (**Figures 12-10 and 12-11**) were produced, and these indicate theoretical visibility of all wind farms in the vicinity. This includes both existing and permitted wind farms as outlined in guidance.

The first Cumulative ZTV (**Figure 12-10**) shows that there is considerable theoretical visibility to the south and east of the site within the 30km radius, a high proportion (areas shaded green) is as a result of the other turbines combined, without the proposed development. Areas shaded pink represent the theoretical visibility of the proposed Drumnahough turbines with other cumulative

turbines, and this is concentrated in and around the site, as well as the northern slopes of the uplands (Bluestacks) to the south, and the eastern slopes of the mountains to the west (including Glenveagh). Scattered areas of visibility are also seen to the north, northeast and east, but there are considerable areas which have no cumulative visibility with the Drumnaough turbines.

The second Cumulative ZTV, **Figure 12-11**, indicates the additional areas where theoretical visibility will result from the proposed Drumnaough turbines only. This shows that the proposed turbines will result in very little additional cumulative visibility (areas shaded in blue).

Significance of Effect

The cumulative landscape effect is considered to be Slight, adverse effect on the site and vicinity in the Cark Mountain Uplands. This is considering the scenario where the neighbouring Cark turbines remain operational, or are replaced with turbines in the same locations of the same height. The landscape in the immediate vicinity of the site is already characterised by a large number of turbines, and this will result in an increased number of turbines and associated infrastructure, and extend this area further to the west.

Should the Cark turbines, which lie adjacent to the site be decommissioned, then the cumulative landscape effect of the proposed turbines is likely to remain as Slight, given the other turbines in close proximity to the proposed Drumnaough turbines. However a variation in the height and layout of turbines may cause a change in the cumulative landscape effect, but it is not possible to assess this accurately without specific details. The cumulative effect of any repowering would be included in the relevant application.

12.3.4.2 Cumulative Visual Effects

Effects on other landscape character areas including areas of EHSA at Glenveagh, are considered to be Not Significant to Slight Cumulative Visual Effects

The GLVIA and SNH (2010) both refer to combined visibility. Combined cumulative visual effects are defined in the GLVIA as one of two types:

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

While sequential visual effects are also referred to in the guidance, the most relevant in this case is combined (in combination) effects.

The photomontages 1-17 allow for the assessment of combined (in combination) visual effects.

Magnitude of Change

The magnitude of change ranges from No change to Medium magnitude of change.

Section 12.3.3.2 includes the descriptions of the 17 viewpoints, which includes reference to any existing or permitted turbines in the wireframe/photomontage. Of the 17 viewpoints, some 7 viewpoints (viewpoints 1,2,5,7,10,15,16) do not show any other wind farms in the view.

Of the remaining 10 viewpoints, two are considered Imperceptible, four are Not Significant and one view considered Slight, and one Slight/Moderate. Three viewpoints (4, 8 and 11) are considered Moderate, and two of these are considered adverse.

The magnitude of change in the immediate vicinity of the site and in the Carr Upland is likely to be more evident directly north of the site (Viewpoints 8,9) however no cumulative visibility is evident in Viewpoint 15. The magnitude of change is lesser in viewpoints to the northeast (Viewpoint 16, 17). Viewpoints from the south are likely to experience lower magnitude of change, however Viewpoint 11 illustrates the increase of turbines across the extent of the image, as a result of the proposed development. Viewpoint 12 illustrates the existing turbines visible from the Ballybofey area and the Drumnahough turbines are not a prominent addition in this area.

Significance of Effect

The proposed turbines will result in most pronounced changes to cumulative visibility to the north of the site, as for the visual effects (Viewpoints 4,8) where the proposed development is clearly visible to a large extent, along with other developments. In the case of viewpoint 4, only one other set of turbines is visible, but the overall extent of turbines is increased. In Viewpoint 8 the addition of the turbines results in 'stacking' as a number of turbines are seen in a dense cluster. Though Viewpoint 11 is also considered of Moderate significance, the proposed turbines are less visible but increase the extent of turbines visible in the images.

However, it should be noted that cumulative effects are only evident in 10 of the 17 viewpoints.

The pattern and extent of theoretical visibility as seen on the ZTVs is referred to above, but is relevant to both landscape character and to visual effects. As noted, the second Cumulative ZTV, **Figure 12-11**, shows that the proposed turbines will result in a minor increase in terms of the pattern and extent of additional cumulative visibility (areas shaded in blue). From Glenveagh National Park, cumulative effects do not arise in Viewpoint 1.

In other areas of Glenveagh National Park, the ZTVs shows that there is very little additional visibility due to the proposed Drumnahough turbines. Where this visibility occurs however the Drumnahough turbines are likely to appear closer than other existing turbines. Cumulative visibility from the key visitor locations in the park is very limited and will range from No effect in many areas as indicated on the ZTV maps, with a likely Slight-Moderate cumulative visibility along a short section of the Lough Inshagh shore walk.

Overall, the pattern of cumulative visibility illustrated in **Figures 12-10 and 12-11** indicate that in the vast majority of areas where the turbines are visible, there is theoretical visibility of other turbines and the Drumnahough turbines are not likely to be the only turbines visible. It should be noted however that the ZTV does not include structures or vegetation. It is important to note that the main increase in visibility of Drumnahough turbines only is in the immediate vicinity to the northwest of the site where the visual receptors will be local residents along a local road.

Figure 12-10 indicates the majority of areas in the Park shaded pink or green, where pink represents visibility of Drumnahough turbines and other cumulative turbines, and areas of green which

represent other turbines excluding Drumnahough. Therefore the Drumnahough turbines will add very little to the pattern of visibility of wind turbines from the National Park.

12.4 MITIGATION, AVOIDANCE AND REMEDIAL MEASURES.

12.4.1 Visual Effects

Mitigation of visual effects in relation to wind turbines, which are by their nature large structures, related mainly to the siting and design of the proposed turbines. The turbines have been sited to maximise efficiency as well as taking account of the WEG siting and design guidelines (2019). A reverse viewshed ZTV was carried out for Glenveagh National Park to assist in ensuring the layout minimised the visual effects on the Park.

The turbines themselves will be a matt, off white finish.

The substation and battery storage are located in a partly forested area which helps to reduce visual effects and the borrow pits will be located in areas of forestry.

12.4.2 Landscape Effects

Mitigation in relation to landscape effects relates to a number of elements within the proposed wind farm, which are mainly within the site itself and not relevant to the wider landscape.

All soils and subsoil generated from excavation works will be retained on site and reused in bunding, landscaping and localised earthworks. Excess peat soils will be stored on site in a designated peat deposition area.

Following construction, the borrow pits will be backfilled with excavated material and allowed to re-vegetate naturally.

12.4.3 Decommissioning Phase

As set out in the Description Chapter, either repowering or decommissioning may occur. If planning permission is not sought after 30 years, the site will be decommissioned and reinstated with all 12 No. wind turbines and towers removed. Below outlines the likely decommissioning tasks based on today's requirements and best practice.

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

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

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

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

The removal of the turbines may be regarded as the removal of a landmark, as the structures will have been in place for some time, in an area characterised by windfarms. However the effect on the wider landscape will depend to an extent on the surrounding areas and windfarms also.

12.5 RESIDUAL EFFECT

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

12.6 CONCLUSIONS

12.6.1 Landscape Effect

The proposed development is located in an upland area (in the Cark Mountain Uplands landscape character area) which is characterised by a large number of wind turbines, coniferous forestry and tracts of blanket bog. Settlement is sparse in the area, and the area is relatively remote. Settlement is concentrated on the lower slopes towards the Finn valley to the north and Swilly Valley to the south, though a low number of dwellings are evident in the vicinity.

The site and the Cark Mountain uplands are considered of Medium sensitivity to this type of development.

Several landscapes in the vicinity are known for their scenic qualities, including Glenveagh National Park to the northwest, and the Bluestacks mountains to the southwest which are both designated EHSA. The landscape to the east is more settled and less scenic. A number of trails in Glenveagh National Park and the long distance waymarked trail (the Sli Dhun na nGall) are found in the vicinity.

Effects are mainly on the landscape character as opposed to the landscape fabric. The effects on the landscape fabric will be greatest at construction stage and remain limited to the site, and not evident in the wider landscape.

The proposed development will not introduce a new element to the landscape, but an increase in the number of turbines. The landscape character of much of the area immediately around the site (an in particular to the east where existing wind farms are adjacent to the site) will undergo Slight effects, while other parts of the landscape character (such as areas to the west) of the uplands will undergo Moderate landscape effects, where open views of the turbines will be available at relatively close proximity such as areas to the north and northwest. In this location, the extension of the area of wind turbines to the northwest, is likely to be more evident, though parts of this area already

have coniferous forestry plantations and an 110kv line traverses the landscape northwest of the site. It should be noted that the reversibility of change is an important consideration in the landscape effects. The effects are considered neutral.

The landscape effect on the Glenveagh National Park is considered to be Not Significant to Slight. The overall landscape character will not be affected, and several key areas including Glenveagh Castle and gardens, Lough Beagh, the visitor centre, and the majority of the trails in the park will not have visibility of the turbines. Where visibility does occur along a public road, this is along a very short stretch of the R254 where blade tips only are likely to be may be visible. Visibility of the turbines will also occur along some short sections of the Lough Inshagh walk which have open views in the direction of the turbines, and the eastern slopes of the mountains (where there are no marked formal trails). The turbines will be at some distance from these viewing locations.

12.6.2 Visual Effects

It is worth noting that the ZTV illustrates a considerable number of locations where there is no theoretical visibility, as well as areas that will have theoretical visibility. The pattern of visibility shown in the ZTV indicates that considerable areas within the 30km boundary have no visibility of the proposed turbines. It also shows that visibility is focussed on the site and immediate surrounds, and generally more evident on parts of the higher ground and slopes of higher ground, in the wider landscape, with less visibility in the valleys.

In the immediate vicinity of the site, especially approaching from the south and east, the turbines will be seen against a backdrop of existing turbines, however to the northwest at Tullyhonour and Rathdonnell, it is noted that a low number of residences in this vicinity are likely to experience open views of the turbines at close proximity. No other turbines are visible from this area. Visual effects on viewers in the vicinity, are likely to range from Slight -Moderate to Moderate-Significant, but these visual effects will be localised.

The assessment of the 17 viewpoint locations shows that the visual effects range from those with No visual effect (3), to Moderate effect (3). Two Viewpoints were considered Imperceptible, with three considered Not significant, and five were considered Slight and one Slight/Moderate. The most pronounced effects (Moderate) were found in three viewpoints to the north of the site – 4, 8, and 15.

Two of these are along the R250 immediately north of the site, where there are open views from elevated locations, and the turbines will appear at close proximity while Viewpoint 4 lies further north along the R251. Viewpoints 1, 10 and 13 which were considered more sensitive viewpoints will not experience any significant effects.

Visual effects on Glenveagh National Park and its elements of cultural and historic importance were also assessed. In general, and as noted in Section 12.3.3, visibility from the most visited parts of the park are minimal.

As noted above, the only public road in the Park with theoretical visibility is a short section of the R254, which is illustrated by Viewpoint 1 (and considered Not Significant). As noted above, other key visitor areas in the park including the Visitor centre, Glenveagh Castle and four of the five trails will

not have visibility of the turbines. Two blade tips only will be visible from the St Columbcille's stone at Lough Gartan. Parts of the Lough Inshagh walk which are elevated will have open views of the proposed turbines, (as one travels south to Lough Gartan), but it is noted that though views are only available from part of the trail, and travelling south, as indicated on the ZTV. Views as the trail approaches Lough Gartan will be screened by vegetation.

Cumulative landscape and visual effects were also assessed. In terms of landscape effects, wind turbines, areas of blanket bog and swathes of coniferous forestry dominate these uplands, and this would be the addition of another wind farm to the area, contiguous to others. This has the effect of extending the presence of turbines further to the northeast, but without a significant cumulative effect on the Cark Mountain uplands landscape character.

Cumulative visual effects range from no effect to Moderate effect, and are more pronounced in some areas than in others, with viewpoints directly to the north of the site (4,8) and one to the south (11) considered Moderate, and ranging from adverse to neutral in effect. The remaining viewpoints show in many instances, from more distant viewpoints the proposed turbines will be difficult to distinguish from other turbines, and visual effects are much less from distant views.

12.7 REFERENCES

Department of the Environment, Heritage and Local Government, 2006. *Wind Energy Development Guidelines*

Department of the Environment, Heritage and Local Government, 2019. *Wind Energy Development Guidelines Public Consultation Draft*.

Donegal County Council, June 2018. Donegal County Development Plan 2018-2024

Environmental Protection Agency, (2017) Draft *Guidelines for Information to be Contained in Environmental Impact Assessment Reports*

Forest Service, 2000d. *Forestry and the Landscape Guidelines*.

Landscape Institute and the Institute of Environmental Management and Assessment, 2013. *Guidelines for Landscape and Visual Impact Assessment*, 3rd Edition.

Scottish Natural Heritage, 2012. *(Assessing the Cumulative Impact of Onshore Wind Energy Development)*.

Scottish Natural Heritage, 2017. *Guide to Visual Representation of Wind Farms*.