

12. LANDSCAPE

12.1 INTRODUCTION

Maps and Figures dealing with landscape impact are presented separately in Volume 3 of 3 in A3 and larger format.

12.1.1 Background

The Landscape and Visual Impact Assessment (LVIA) was carried out with reference to the following:

- Guidelines for Landscape and Visual Impact Assessment, 3rd Edition 2013, published by the UK Landscape Institute and the Institute of Environmental Management and Assessment (hereafter referred to as the GLVIA). The LVIA methodology is derived from this guidance document.
- The Landscape/Visual Assessment contained in the EIS dated December 2010 submitted with the Grousemount Wind Farm planning application (Planning Ref. 101333, granted permission in December 2012).
- The LVIA contained in the EIS March 2010 submitted with the Barnastooka Wind Farm planning application (Planning Ref. 10197, granted permission November 2010).

The content of the LVIA is as follows:

- **Methodology:** The methodology for the LVIA is described, key terms are defined and the criteria for assessment of significance of landscape and visual effects are explained.
- **Policy Context:** The policies of the Development Plans for Co. Kerry and Co. Cork relevant to the assessment of landscape and visual effects of wind energy development are identified.
- **Receiving Environment:** Informed by desktop study, the relevant policy and surveys of the area the landscape of the receiving environment is described, identifying its key elements, characteristics and values. This section informs the landscape assessment and the identification of viewpoints for assessment of visual effects impact assessment and informs the identification of viewpoints to be assessed for visual impact.
- **Proposed Development:** The components and characteristics of the proposed development are described with emphasis on its potential landscape and visual effects.
- **Potential Landscape Effects:** The potential effects on the main elements, characteristics and values of the receiving environment landscape are discussed. (For this assessment only the effects during operation are considered.)
- **Potential Visual Effects:** The potential visibility of the proposed development is discussed with reference to a number of zone of theoretical visibility (ZTV) maps (Volume 3 of the EIS). The effects on a number of viewpoints representing visual receptors in the receiving environment are assessed, and illustrated by wireframe and photomontage images for each viewpoint (contained in Volume 3 of the EIS).

- Mitigation: The requirement and possibility of mitigation measures to address the predicted landscape and visual impacts are discussed.
- Conclusion: Conclusions are drawn as to the significance of the predicted landscape and visual effects.

12.1.2 Methodology

A number of key principles of the GLVIA 3rd Edition (2013) are worthy of emphasis.

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 development the impact would be the construction of the 38 turbines and associated infrastructure.

'Effect' is defined as the change or changes resulting from that action, e.g. a change in landscape character, or changes to the composition, character and quality of views in the receiving environment. The LVIA focusses on these potential effects.

Assessment of Both 'Landscape' and 'Visual' Effects

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

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

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.

Methodology for Landscape Assessment

Where the potential landscape effects of the proposed development are assessed, the nature and scale of changes to the landscape elements and characteristics are identified, and the consequential effect on landscape character and value are discussed. Existing trends of change in the landscape are taken into account. The assessment of significance of the effects takes account of the sensitivity of the landscape resource and the magnitude of change to the landscape that would result from the proposed development.

Sensitivity of the Landscape Resource is a function of its land use, landscape patterns and scale, visual enclosure and the distribution of visual receptors, and the value placed on the landscape. Landscape sensitivity is classified as either:

- *High*: Exhibits a very strong positive character with valued elements and characteristics that combine to give an experience of unity, richness and harmony, therefore particularly sensitive to change in general,

- *Medium:* Exhibits positive character but has evidence of alteration to / degradation / erosion of elements and characteristics resulting in an area of mixed character, therefore potentially sensitive to change in general, or
- *Low:* Exhibits generally negative character with few valued elements or characteristics.

Magnitude of Landscape Change to be imposed on the landscape by the development is classified as either:

- *High:* Total loss of or major alteration to the key elements or characteristics of the landscape, and/or introduction of elements considered totally uncharacteristic in the context of the receiving environment's landscape character.
- *Medium:* Partial loss of or alteration to one or more key elements or features, and/or introduction of elements that may be prominent but may not necessarily be considered to be substantially uncharacteristic in the context of the receiving environment.
- *Low:* Minor loss of or alteration to one or more key elements or characteristics, and/or introduction of elements that may not be uncharacteristic in the context).
- *Negligible:* Very minor loss, alteration or introduction of elements of the landscape.

For both landscape and visual amenity, in order to classify the significance of the effects, the predicted magnitude of change is measured against the sensitivity of the landscape (or view), using the guide shown in Table 13.1.

Table 13.1: Assessment / Grading of Impact Significance.

Magnitude	Sensitivity			Key
	High	Medium	Low	
High				High Significance
Medium				Medium Significance
Low				Low Significance
Negligible				

The predicted impact is also classified as beneficial, neutral or adverse based on an evaluation of the likely impact on identified landscape values. This is not an absolute exercise; it is a professional judgement informed by the process of landscape character assessment, particularly landscape values assessment (informed by the DoEHLG *Consultation Draft of Guidelines for Landscape and Landscape Character Assessment, 2000*), also taking into account relevant planning policy.

Methodology for Visual Assessment

Where the potential visual effects of the proposed development are assessed, visual assessment considers the potential changes to the composition of views, the character of the views, and the visual amenity experienced by visual receptors. The assessment is

made for a number of viewpoints selected to represent the likely visual receptors in the receiving environment.

For each viewpoint the field of view towards the site is described in terms of its key elements or characteristics, and the proposed changes are described. (The existing and proposed views are illustrated by photographs, wireframe images and photomontages presented in Volume 3 of the EIS.) The potential visual effect on each viewpoint is assessed by measuring the viewpoint sensitivity against the magnitude of change that would result from the proposed development.

- Sensitivity of the viewpoint / visual receptor is a function of the location and context of the viewpoint, the expectations and occupation or activity of the visual receptor, and the importance of the view. Viewpoint sensitivity is classified as:
 - *High*: For instance users of outdoor recreation facilities or centres of activity focussed on the landscape, and occupiers of residential properties with views affected by the development.
 - *Medium*: For instance, people travelling through or past the affected landscape in cars or on public transport, i.e. viewing but not focussed on the landscape.
 - *Low*: For instance, people at their place of work or engaged in similar activities such as shopping, etc., whose attention will be focussed on these activities.
- **Magnitude of change to the view** (towards the site) takes into account issues such as the extent of the view that would be occupied by the intrusion, the proportion of the development or particular features that would be visible, features or aspects of the view which might be obscured by the intrusion, and whether the view of the development would be static, or a sequence or transient (as seen from a moving vehicle). It is also taken into account whether or not similar elements to those proposed already exist in the view. The magnitude of change to each view is classified as:
 - *High*: Total loss of or major alteration to the key elements or characteristics of the view, and/or introduction of elements considered totally uncharacteristic in the context of the view.
 - *Medium*: Partial loss of or alteration to one or more key elements or features, and/or introduction of elements that may be prominent but may not necessarily be considered to be substantially uncharacteristic in the context of the view.
 - *Low*: Minor loss of or alteration to one or more key elements or characteristics, and/or introduction of elements that may not be uncharacteristic in the context.
 - *Negligible*: Very minor loss, alteration or introduction of elements of the view.
- **Significance of Visual Effects** As for landscape effects, in order to classify this, the predicted magnitude of change to the view is measured against the sensitivity of the viewpoint/visual receptor. Significance of effects is classified as high, medium or low.

The effect is also classified as positive, neutral or negative. This is an inherently subjective exercise. Visual receptors' attitudes to wind farms will vary, as will their perception of the effects of a wind farm as positive, neutral or negative. For guidance in this matter Sustainable Energy Ireland's *Attitudes Towards the Development of Wind Farms in Ireland 2003* was consulted. The report suggests that a simple classification of the visual effects of a wind farm as either positive, neutral or negative would inevitably be inaccurate or at

least arguable. The most likely response to the visual effects of the wind farm amongst visual receptors would be a range of all three possibilities, the majority tending towards neutral, followed by positive and lastly negative. Significantly, the response of residents of the receiving environment with views of the development would tend to be more positive than non-resident visual receptors or residents with no view of the wind farm.

As well as considering objectively the design/appearance of the proposed development (with reference to the DoEHLG Windfarm Planning Guidelines 2006), the classification of visual effect significance attempts as far as possible to take into account and reflect the findings of the SEI survey.

12.1.3 Policy Context

Kerry County Development Plan 2015-2021 - Core Strategy

In Chapter 2.2.2.5 of the CDP, regarding Sustainable Development and Climate Change, it is stated that *“Climate Change is a global threat with local consequences... If unmanaged, climate change will have dramatic adverse effects on peoples’ lives, the environment and the prospects for growth and development”*. The CDP states that *“The Council is committed to addressing climate change in a proactive manner”, and identifies “exploitation of sustainable renewable energy resources” as a measure by which greenhouse gas emissions can be reduced.*

Policy Objective CS-11 states: *“Support the National Climate Change Strategy and the National Climate Change Adaptation Framework, Building Resilience to Climate Change on an ongoing basis through implementation of supporting objectives in this Plan, particularly those supporting use of alternative and renewable energy sources...”*.

In Chapter 2.2.2.4 of the CDP, regarding Heritage, it is stated that *“County Kerry’s landscape, character and culture are vital assets that help the County compete as Irelands prime tourism destination... there are also potential significant economic and social benefits to promoting the value of the built, cultural and natural heritage assets and investing in their protection, management and appropriate enhancement”*.

Kerry County Development Plan 2015-2021 – Renewable Energy Strategy

In Chapter 7.6.3 of the CDP it is stated that Renewable Energy Strategy for County Kerry (Kerry RES, 2012) sets out the development criteria, development management standards and objectives for the development of renewable energy in the County and will be used in the assessment of all planning applications for such development.

Kerry RES Wind Energy Policy

The RES states: *“wind energy is best placed to meet national targets for the consumption of electricity from renewable energy. In line with national policy it is an objective of the strategy to continue to support the development of wind energy”*.

Specifically with a view to delivering *‘significant levels of renewably sourced electricity in the short to medium term’*, the stated objectives of the RES regarding wind energy are as follows:

- *To identify key areas where there is wind energy potential and where, subject to criteria such as design and landscape planning, natural heritage, environmental and amenity considerations, wind energy development can be deployed.*
- *To set out the specific criteria for wind energy development that the planning authority will apply when considering the merits of any wind development*

proposal.

- To provide a sustainable policy framework for the development of small-scale wind developments and single use turbines. (own emphasis)

To this end, based on an analysis of various constraints/considerations, the Kerry RES classifies areas of the county as being Strategic Site Search Areas, or areas Open-to-Consideration for wind development. These areas are shown on Map 7.6. Grousemount Wind Farm falls within an area identified as Open-to-Consideration, as shown in Figure 12.1.

Regarding areas Open-to-Consideration Policy Objective NR 7-33 of the Kerry RES states: *“Proposals shall demonstrate conformity with existing and approved wind farms to avoid visual clutter and how they have taken regard of potential cumulative effects, where appropriate”*. NR 7-34 states: *“Projects shall be designed and developed in line with the Wind Energy Development Guidelines, Guidelines for Planning Authorities (DoEHLG, 2006) and any update of these guidelines in terms of siting, layout and environmental studies...”*.

Although the site area is not designated a Strategic Site Search Area, some of the policy for Strategic areas is potentially relevant to the proposed development. The Strategy states: *“Proposals must consider the possibility of shared infrastructure, and the siting of turbines in any development must consider the need to maximise the development potential of the area as a whole”*. The current application arises from a proposal to consolidate the infrastructure of two planning permitted wind farms on adjacent sites.

Kerry RES Landscape Policy

In order to expedite site searches and the planning process and to minimise landscape and visual impacts of wind development, the RES provides *“guidance on the sensitivity and the capacity of receiving landscapes to absorb wind development without a significant impact on the values of that landscape, and the amenity and quality of life of communities and individuals who dwell in the area”*.

A Landscape Character Assessment of County Kerry was carried out in 2012 to inform the preparation of the RES and 46 landscape character areas (LCAs) were identified. The site of the proposed development is located in LCA no. 21, the Upper Roughty River Valley. The information in the following three tables is taken from the *Kerry Landscape Character Assessment*.

LCA no. 21 Upper Roughty River Valley	
Landscape Type	Mountain Moorland, Transitional Marginal Land
Scale	... a small area but the features are large as the river valley is surrounded by higher ground which for a large part of the area contains tall wind turbines
Landcover	Moorland and blocks of coniferous plantation characterise the slopes and summits of these hills and mountains. The narrow river valley comprises some sparsely vegetated hedgebanks enclosing pasture and bog
Enclosure	Limited, apart from fields close to the river, which are enclosed by sparsely vegetated hedgebanks
Human Influence	Low. The only human influence is the existing wind turbines, coniferous plantations and the small number of dwellings in the area

Road Network	There is one road through the area, from the R569 to The Top of Coom, with one road off this. There is therefore a very limited road network
Settlement Pattern	Settlements comprise of isolated farms and one-off dwellings
Prominent Features	Mountains
Perception	It is a remote and mountainous landscape
Natural & Cultural Heritage Features	There are three archaeological monuments in the area. Sillahertane Bog is designated as a Natural Heritage Area
Amenity & Recreation	None
Quality of Landscape	Has been degraded by the presence of wind turbines which have altered this scenic upland landscape

LCA no. 21 Upper Roughty River Valley				
Development Capacity Assessment		Yes	No	Detail
1	Designated amenity/view as per Kerry County Development Plan 2009-2015?	✓		Secondary Special Amenity
2	Is the landscape important for scenery, tourism or recreation?	✓		Mountains are scenic
3	Identified in the public consultation as a scenic landscape?		✓	
4	Is there a limited amount of the particular landscape in the county?		✓	
5	Does it provide a setting that contributes to the character/amenity of a settlement?		✓	
6	Coastal landscape?		✓	
7	Are there dominant features in the landscape?	✓		Mountains and wind turbines
8	Are cultural, historical or archaeological associations present in the landscape?		✓	
9	Windfarm(s) in the area or visible from the area?	✓		
10	Is the landscape of national/county importance?		✓	

Development Capacity Summary
<p>There are existing wind turbines in the northern part of the area. These are a dominant feature on the landscape. Cumulative effect will have to be considered as additional turbines would increase their prominence over this elevated landscape. The height that existing turbines are located at contributes to their dominance. The valley and the elevated land surrounding it contain forestry which is not of scenic value. There is consensus in the three public consultation summary maps regarding this area being acceptable to wind development. This area may have capacity for some further wind energy development in the form of extensions to existing and permitted developments. A large part of the boundary of this area runs along the Cork border, visual impact on this adjoining county will therefore have to be carefully considered by any future development, particularly in</p>

recognising sensitive landscapes in County Cork. The northern boundary of this area is set by the Lough Leane Catchment, the eastern boundary is the Cork border. Sillahertane Bog NHA will be excluded from this area. The southern boundary is the ridge which includes Carran as this is the extent to which existing applications extend. An increase to the areas already with existing/permitted windfarms would have a negative cumulative affect. Due to the existing level of development, this area would be Open To Consideration when it comes to allowing further development.

In summary, the Kerry Landscape Character Assessment recognised that the Upper Roughty River Valley is a remote mountainous landscape of large scale, where existing turbines are already co-dominant features of the landscape (along with the topography), and where there is a relative lack of settlement and recreation activity. Regarding the area's development capacity it is stated: *"Considered to have some additional capacity for wind development, namely extensions to existing wind farm developments. Cumulative effect would be an issue"*.

At the time of the Landscape Character Assessment in 2012, planning permissions for both Barnastooka and Grousemount Wind Farms were already granted. This is significant as the RES indicates that the Local Authority considers the area to have potential for development that is additional to the proposed development.

The RES notes that there are a significant number of one-off houses in all rural areas throughout the county, the only exception being the higher reaches of mountainous areas. As a result there are houses located in all wind deployment zones. The RES requires, in identifying sites and in the disposition of turbines, that development proposals *"carefully consider potential impacts on residential amenity. Proposals which have a significant negative impact on residential amenity will not be permitted"*.

The RES states that the impact of proposed wind farms on towns and villages will be considered on a case-by-case basis. *"The Planning Authority will not be favourably disposed to proposals which will have an adverse impact on a settlement including its potential for future growth"*.

Kerry County Development Plan 2015 - 2021 – Views and Prospects

The CDP seeks to protect and conserve certain views and prospects adjoining public roads in order to maintain the internationally recognised beauty of the county. Within a 30 km radius of the site are several protected views and prospects. However only a few of these are close enough to the site to potentially be significantly affected by the development. These are:

- A stretch of the local road along the valley of the Slaheny River, some 4 km to the west of the site;
- A stretch of the R569, some 4 km to the north west of the site;
- Two stretches of the N70 along the northern shore of Kenmare Bay, west of Kenmare, some 22 km west of the site;
- A short stretch of the N71 and a longer stretch of the R568 to the north west of Kenmare, some 19 km north west of the site.

It is stated in Chapter 12.4 of the CDP that the designation of protected views is not intended to result in the prohibition of development along these routes but that development, where permitted, should not seriously hinder or obstruct these views and should be designed and located to minimise their impact.

Cork County Development Plan 2014

The proposed development is located entirely within Co. Kerry but close enough to the Co. Cork boundary that landscape and visual effects will extend into Cork. Relevant policy from the Cork CDP is identified below.

Wind Development

It is stated in the background to the renewable energy policy for Co. Cork that the CDP aims to *'support the sustainable development of renewable resources'*.

Like the Kerry RES and in accordance with the DoEHLG Windfarm Planning Guidelines, the Cork CDP takes a plan-led approach to wind energy, dividing the county into areas where development is (a) Acceptable in Principle, (b) Open to Consideration, and (c) Normally Discouraged.

The identification of these wind deployment areas took account of a range of factors including *'important or high value landscapes'*. Figure 9.2 of the Cork CDP (Figure 12.2), illustrating the policy considerations for wind energy projects, shows that the majority of the area of Co. Cork in proximity to the site – to the north east, east and south east - is not affected by any consideration/constraint that would exclude wind development from the area.

However, there is an area of *'Important Landscape'* directly to the south of the site and extending to the west. This area is deemed sensitive to the effects of wind energy development and wind farms would be *'Normally Discouraged'* in this area. Although the development site is close to this area, the ZTV of the development (refer to Volume 3 of the EIS) shows that the visual effects of the wind farm would not affect this area of Important Landscape in Co. Cork, except for views from the top of Knockboy.

As shown by Figure 9.3 of the Cork CDP (Figure 12.3), the limited area of Co. Cork that does fall into the proposed development's ZTV is largely designated as Open to Consideration for wind energy development. While the proposed development is located in Co. Kerry (in an area zoned Open to Consideration), the predominant policy for the potentially affected parts of Co. Cork is relevant in that it indicates that the effects of wind energy development may be acceptable in these areas.

Landscape, Views and Prospects

The Cork CDP identifies a number of Scenic Routes *'consisting of important and valued views and prospects within the County'*.

Plan Objective GI 7-2 states: *"Protect the character of those views and prospects obtainable from scenic routes and in particular stretches of scenic routes that have very special views and prospects identified in this plan..."*.

Regarding these routes the CDP states: *"Whilst advocating the protection of such scenic resources the plan also recognises the fact that all landscapes are living and changing, and therefore in principle it is not proposed that this should give rise to the prohibition of development along these routes, but development, where permitted, should not hinder or obstruct these views and prospects and should be designed and located to minimise their impact"*.

Plan Objective GI 7-3 regarding development on scenic routes states: *"Require those seeking to carry out development in the environs of a scenic route and/or an area with important views and prospects, to demonstrate that there will be no adverse obstruction or degradation of the views towards and from vulnerable landscape features. In such areas,*

the appropriateness of the design, site layout, and landscaping of the proposed development must be demonstrated along with mitigation measures to prevent significant alterations to the appearance or character of the area”.

Within the 30 km radius of the site there are several Scenic Routes identified in the Cork CDP which might be affected by the proposed development (i.e. they pass through the proposed development's zone of theoretical visibility). These are:

- S24 and S25, local roads to the east of the site between Coolea and Coom, and joining the Coolea - Coom Road to the Lissacresig Road. According to Table 5.1 of the Cork CDP Volume 2, the 'general views being protected' along this route are 'views of the foothills of the Derrynasaggart Mountains, surrounding hills and the Sullane River'. The Derrynasaggart Mountains lie to the north and the Sullane River is to the east of these routes, while the site lies to the west.
- S26, the local road between Lissacresig and the Mouth of the Glen, passing to the south and east of the site and through the village of Reananerree some 10 km east of the site. The 'views of rugged landscape and valleys' are protected along this route.
- S27, the local road between Gougane Barra and the Mouth of the Glen, passing to the south of the site some 2 km from the southernmost proposed turbine. 'Views of Coomataggart Mountain, hills, valleys and Gougane Barra' are protected along this route.
- S28, the R584 Regional Road from the Pass of Kelmaneigh to Gougane Barra, to the south of the site. 'Views of the surrounding remote rural landscape and rugged mountains' are protected along this route.
- S34, the R584 Regional Road between Inchigeela and Ballingearry to Kelmaneigh, passing through the village of Ballingearry and along the northern shore of Lough Allua. 'Views of Lough Allua, Lee River Valley, Sheehy Mountains, hills and surrounding rugged landscape' are protected along this route.
- S32, the local road from South Lake Road – Inchigeela and Ballingearry via Curraheen to Tullagh, and S33 a branch off South Lake Road. 'Views of Lough Allua and the surrounding mountains' are protected along this route.

DoEHLG Windfarm Guidelines for Planning Authorities 2006

The Guidelines (p.10) requires all County Development Plans to include:

“objectives to secure the maximum potential from the wind energy resources of the planning authority's area... that is consistent with proper planning and sustainable development.”

The Guidelines includes design guidance for wind energy development in various landscape contexts. The description of the proposed development in Section 10.5 refers to this guidance to facilitate the Planning Authorities' assessment of the application.

Government White Paper – Delivering a Sustainable Energy Future for Ireland, the Energy Policy Framework 2007 – 2020, and Subsequent Policy

In the Executive Summary of the Energy Policy Framework, published in 2007, it is stated:

“Ireland faces similar energy challenges to those being confronted worldwide. Our situation is made more acute by... our limited indigenous fuel resources... We have however major opportunities to be realised in harnessing the full potential of our

renewable and bioenergy resources.”

In the foreword to the Framework the Minister for Communications, Marine and Natural Resources, states: “The challenges for energy policy are complex and urgent... The Energy Policy Framework... sets very ambitious objectives and targets by which we will overcome those challenges. We will deliver on these objectives and targets through the practical policy actions set out under the Strategic Goals.”

In order to meet the Energy Policy Framework's stated target of 33% of energy supply from renewable sources by 2020, it includes among its Strategic Goals the acceleration of energy production from renewable resources.

Subsequently, in December 2008, the Government increased the target for energy production from renewable resources by 2020 to 40%.

This policy is included here because it has significant landscape implications. The objectives of (a) harnessing renewable energy to its full potential, and (b) accelerating renewable energy production, require accelerated introduction of energy infrastructure into the landscape and therefore accelerated landscape change.

12.2 RECEIVING ENVIRONMENT

12.2.1 Landscape Character

The site is situated in the south east of Co. Kerry, in the uplands enclosing the Roughty River valley to the east of Kilgarvan, close to the boundary of Co. Cork. The landscape character of the area is described below in terms of topography, land use and land cover, transport and settlement patterns, visual receptors and perception of the landscape.

Topography

The Roughty is one of several rivers (along with the Slaheny and Sheen Rivers to the west) that drain into the Kenmare River from the uplands on the Cork and Kerry boundary. The Roughty Valley has two distinct sections, the upper valley where the site is located, and the lower valley, as shown in Figure 12.4.

The upper Roughty Valley is a deep and steep-sided valley, draining south to north. The valley is enclosed by a roughly U shaped range of mountains. The main channel of the river follows a meandering route between the mountains which are separated by the river's tributary streams, also in deep, steep-sided valleys. The form of the individual mountains varies, ranging from rounded peaks to linear ridges, but steep slopes and generally rugged topography are characteristic of the range.

The mountains include Barnastooka, Coolnagoppoge, Knockanruddig, Carran (the tallest at 600 m OD), Grousemount, Sillahertane, Coolknoohil, Coomagearlahy and Inchincoosh.

As the Roughty exits the U-shaped mountain range near Maulagh it turns and follows a meandering path to the west – the floodplain widening and the enclosure of the mountains diminishing - before flowing into the Kenmare River some 13 km distant.

Views of the Upper Roughty Valley showing the enclosure of the valley by tall, steep sided and rugged mountains.



Views of the Lower Roughty Valley to the west of the site, showing the relative lack of enclosure compared to the upper valley.



In Co. Cork to the east and south of the upper Roughty Valley the topography is complex, with smaller hills and valleys forming an undulating landscape descending gradually in elevation towards the east and south. This area too is characterised by a high degree of visual enclosure.

12.2.2 Land Use and Land Cover – Wind Energy Generation

The upper Roughty Valley has a number of attributes that make it suitable for wind energy development. These include a strong wind resource, limited productive land use capacity, a sparse settlement pattern, an unusually high degree of visual enclosure (for an upland area) and limited recreation and tourism activity compared to other upland areas in Co. Kerry.

These attributes have been recognised for some time and several wind farms are now operational in the mountains enclosing the valley, mostly in the northern part of the range. Several further developments have received planning permission, including two wind farms on sites occupying the southern part of the range. These sites – Grousemount and Barnastooka - together form the subject of this assessment.

Wind turbines on Coolknoohill in the upper Roughty Valley.



Wind turbines in the northern part of the Upper Roughty Valley, visible from the R569 to the west of the site.



12.2.3 Land Use and Land Cover – Agriculture and Forestry

The soils of the uplands enclosing the Roughty Valley are peaty and poorly drained. The steep slopes and occasional rocky outcrops further limit land use capability. As a result the mountains around the upper valley are predominantly covered in moorland, with patches of coniferous forest in places. On the sheltered valley floor there is a strip of farmland, with generally small, irregularly shaped grassland fields divided by mature hedgerows. In places the fields have been abandoned and are turning to scrub.

A typical view across the Upper Roughty River Valley, showing the rough terrain and a patchwork of marginal grassland, scrub, coniferous forest and moorland.



12.2.4 Transport and Settlement

The R569 regional road is the main transport route in the vicinity of the site. It passes some 4 km to the north west of the site, connecting Kenmare to the N22 and in turn to Killarney and Macroom.

The L3021 Third Class Road off the R569 at Maulagh gives access to the Upper Roughty Valley. The narrow rural road runs along the valley floor to Coolknoohill at the centre of the valley, then turns east and passes out of the valley over the Top of Coom into Co. Cork. For a stretch of some 2 km at the centre of the valley the valley floor broadens and along this stretch there is a row of houses beside the road. The widely spaced houses orientate south taking advantage of the aspect and the view over the river towards the mountains on the far side of the valley. In addition to these houses there are a small number of dispersed farmhouses off the road at higher elevations.

The row of houses along the road near Coolknoohill at the centre of the Upper Roughty Valley.



The generally sparse settlement pattern, of dispersed farm houses and occasional linear

clusters along the roads extends for some distance into the wider landscape to the north, east and south of the upper Roughty Valley. The concentration of settlement increases towards the west along the R569.

Kilgarvan is the nearest town, some 5 km to the north west of the site along the R569, and Kenmare lies a further 10 km to the west beyond that.

In the wider receiving environment the main transport route is the N22 between Killarney and Macroom, which passes some 9 km to the north east of the site (where it passes through Ballyvourney). Macroom is some 24 km to the east of the site, and Killarney is 20 km to the north west.

A number of important recreation and tourist routes, for walking, cycling and driving, pass through the receiving environment of the proposed development. These include the Kerry Way and the Beara Way (walking and/or cycling routes) and the Ring of Kerry (driving route).

12.2.5 Potential Visual Receptors, and Perception of the Landscape

The Zone of theoretical Visibility (ZTV) map of the proposed development (see Volume 3 of 3) illustrates how the topography of the upper Roughty Valley limits the site's visual exposure to the surroundings. For a wind farm of 38 turbines 126 m tall the proposed development has a small ZTV (the area from which the turbines might be visible). The ZTV can be divided into several main zones:

- **The Upper Roughty Valley.** The occupants of the small number of houses in the upper Roughty Valley constitute the local community of the proposed development and would be most visually exposed to it, in their houses, gardens, fields and along the road. They experience a relatively high visual amenity currently, generated by the topography and remoteness, although detracting elements including coniferous forest and wind turbines are visible in the landscape, close to the houses.

Views within the upper Roughty Valley, illustrating the visual amenity of the remote, rugged landscape, but also the presence of wind energy development.



- **The Lower Roughty Valley, the R569 and Kilgarvan.** The R569 runs along the valley floor which is variably enclosed by the surrounding mountains. To the north east of the site the enclosure is dramatic, settlement in the steep-sided narrow valley is sparse, and the view from the road is protected. Further west along the R569 the valley widens and there is a wide strip of grassland fields and a higher concentration of houses adjacent to the road. In these areas the views are of a typical rural working landscape, and the turbines on the mountains around the

upper Roughty Valley are characteristic of views. The town of Kilgarvan is in this area, some 5 km west of the site.

Views from the R569 showing the varying character of the landscape along the road in the vicinity of the site.



- Kenmare and North of Kenmare River:** Kenmare lies some 15 km west of the site. The town, the northern shore of the Kenmare River west of the town, and parts of the uplands above the northern shore, are within the ZTV of the proposed development. This is a busy tourist area, with driving, cycling and walking routes taking advantage of the scenic landscape. Where visible the mountains of the upper Roughty Valley are distant features of a complex horizon.

A view from the northern shore of the Kenmare River, and approaching the town from the west.



- The Slaheny River Valley:** The Slaheny River flows parallel to the west of the upper Roughty in a valley similarly enclosed by tall mountains. A local road runs along the western slope above the valley floor. A stretch of this road is a protected view, and for a short stretch – of some 1 km – the road is in the proposed development’s ZTV.

Views of the Slaheny River Valley.



- **Ballingeary, Lough Allua and Environs:** Across the border in Co. Cork to the east and south of the site there is a marginal upland landscape of complex topography. Scenic quality varies but is high in places, especially around Lough Allua and at higher elevations where panoramic views are afforded. Long stretches of the roads in this area are designated scenic routes. Ballingeary is the largest settlement in the area.

The landscape around Ballingeary is of variable scenic quality.



- **The Sullane River Valley and the N22, Ballyvourney to Macroom:** For most of its length the N22 is outside of the proposed development's ZTV. The settlements of Ballyvourney and Ballymakeery, both situated on the N22 and the Sullane River which the road follows to Macroom, are also outside of the ZTV. From parts of the uplands lying to the north of the Sullane Valley the proposed development could be seen. A stretch of local road in this area above Ballyvourney is a protected view.
- **North East of Killarney:** There is an elevated rural area to the north east of Killarney, some 20 km and further from the site, which falls into the proposed wind farm's ZTV. The settlement pattern in this area is sparse.

12.3 IMPACT OF THE DEVELOPMENT

Being located underground over its full length from Coomataggart Substation to the ESB Networks' Ballyvouskill Substation, the grid connection from Grousemount Wind Farm has no potential to impact on the landscape.

12.3.1 Proposed Development

The DoEHLG Windfarm Planning Guidelines prescribe that the siting, spatial extent and layout of wind energy development should be guided by the landscape character of the site and environs.

The upper Roughty Valley has a complex topography. The main channel of the river follows a meandering route between a number of distinct mountains that are separated by the river's tributaries, also in deep, steep-sided valleys. The arrangement of land use and land cover is largely determined by the topography and associated soil quality; the peaks and upper slopes of the mountains are covered in moorland and patches of coniferous forest while the lower slopes and valley floor are occupied by marginal grassland in places turning to scrub. Accordingly, in the Kerry Landscape Character Assessment (Kerry Co. Co., 2012) the upper Roughty Valley is described as 'Mountain Moorland and Transitional Marginal Land'.

The DoEHLG Windfarm Planning Guidelines prescribe the following for mountain moorland areas:

- **Location.** *"It may be acceptable to locate wind energy developments on ridges and peaks... [Another] acceptable location is lower down on sweeping mountainsides".*
- **Spatial extent.** *"...larger wind energy developments 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 nearby landscape features".*
- **Spacing.** *"All spacing options are usually acceptable. Where a wind energy development is clearly visible on a crest or ridge there is considerable scope to vary the rhythm, though on simple ridges, regular spacing may be more appropriate. On sweeping and continuously even areas 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... 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."*

This siting, layout, and the various built elements of the proposed development are discussed below. Measures taken to mitigate their landscape and visual impacts are identified where appropriate.

Location / Siting

The following factors influenced the decision to locate the proposed development in the upper Roughty Valley:

- The area has a strong wind resource.
- The area is zoned Open to Consideration for wind energy development in the Kerry RES.
- There is precedent for wind energy development in the area and there is access to the national Electricity Network. The RES requires that the energy yield from such appropriate locations be maximised.
- The topography of the upper Roughty Valley is such that development within the valley would have limited visual exposure to the wider environs.
- The land use capability of the area is limited, therefore development would not compromise any existing productive land use.
- The settlement pattern in the vicinity of the site – within and around the upper Roughty Valley - is sparse. There are few main transport routes or settlement centres (i.e. concentrations of potential visual receptors) in the wider receiving environment.
- The area has limited recreation or tourism use relative to other uplands in counties Kerry and Cork.

These factors suggest that the proposed location of the development is appropriate in landscape terms.

Spatial Extent and Layout of Turbines

As shown in Figure 12.5, the proposed array of 38 turbines is divided into five groups of various sizes, each group located on one of the mountains enclosing the upper Roughty Valley.

The groups of turbines are all located below the peak or ridge on the side of a mountain. Each group responds to the topography of the mountain on which it is situated, in terms of both spatial extent and layout. However, commonalities in siting and layout ensure that the five groups form a coherent whole. The turbines are all in linear groups or clusters, with random layout and irregular spacing.

The entire turbine array is internal to the upper Roughty Valley, i.e. it does not extend outside of the ridgeline of the enclosing U-shaped range. It occupies the valley as a whole, and its component landform features, logically and comfortably.

This assessment takes account of the presence of the existing wind farms towards the northern end of the upper Roughty Valley, and Sillahertane Wind Farm adjacent to the site (light blue stars in Figure 12.5). The existing Sillahertane turbines are arranged in two staggered rows on the long flank of a mountain. The proposed group of turbines nearest to Sillahertane, would effectively add a third row to this group.

Design of Wind Turbines

The turbines will be of standard modern design, comprising a tapering tubular tower and three blades attached to a horizontal nacelle (or hub). A specific turbine model has not yet been selected, but the maximum height of the turbines will be 126 m.

Turbines having a 75 m tower and 101 m rotor blade diameter (overall dimension 125.5 m) are presented in the photomontages prepared to inform this assessment (Volume 3 of 3). For Viewpoint 2, photomontages showing the other possible turbine options have also been prepared. These options include turbines having an 85 m tower and 80 m rotor blade

diameter (overall dimension 125 m) and turbines having a 70 m tower and 112 m rotor blade diameter (overall dimension 126 m).

All of the components will to be coloured matt grey or white, and turbine will have blades rotating clockwise and at the same rotational speed in equal wind conditions.

Access and Site Tracks

The turbines will be accessed by a network of tracks with some 28 km of track being constructed. The tracks will be 5 m in width (and wider at bends) and surfaced with crushed stone.

The track layout seeks to minimise the length of track construction and the quantity and visibility of cut and fill (by following contours and avoiding ridgelines wherever possible).

On-Site Electrical Connection

The turbines will be connected to the permitted Coomataggart 110 kV Substation within the wind farm by underground cabling laid in a trench that typically follows the edge of the access track. Cable trenching and reinstatement will occur during the construction phase in conjunction with the site track reinstatements to minimise disturbance.

Substation

Coomataggart 110 kV Substation is located in the south-eastern part of the site in an elevated bowl-like form in the landscape, entirely screened from the surroundings. Security fencing is provided here, but no other fencing is proposed.

Borrow Pits

Stone for the construction of the wind farm will be obtained from borrow pits located on the site. Following construction the pits will be backfilled with surplus excavated material and allowed to revegetate.

12.3.2 Potential Landscape Effects

The assessment of potential landscape effects considers the sensitivity of the landscape resource and the magnitude of landscape change which would result from the development.

Landscape Sensitivity and Capacity to Accommodate Change

Landscape sensitivity refers to the degree to which a particular landscape can accommodate change arising from a particular development without detrimental effects on its character, quality/condition or value. The sensitivity of the landscape is a function of its land use, landscape patterns and scale, visual enclosure and the distribution of visual receptors, and the value placed on the landscape. The sensitivity of the landscape to development also varies depending on the nature and scale of the development.

- **Land use:** Land use and land cover in the upper Roughty Valley reflect the mountain moorland and transitional marginal land character of the area. The slopes and summits of the mountains are covered in moorland with occasional blocks of coniferous forest. There is a strip of farmland on the valley floor and where this extends to higher elevations in places the fields have been abandoned and are turning to scrub. Wind energy development is a key element of the land use pattern; there are several existing wind farms (Inchincoosh, Coomagearlahy, Coolknoohil) and several permitted developments in the northern part of the range. The development of Grousemount Wind Farm will occupy the southern part of the range (the upper reaches of the valley).

- **Landscape patterns and scale:** Except for the strip of farmland on valley floor, which are divided by sparsely vegetated hedgerows, the landscape scale is large – the mountains are large landforms and the moorland areas are free of divisions (such as hedgerows). Therefore, there is a lack of pattern in the landscape.
- **Visual enclosure and distribution of visual receptors:** As a result of its particular topography, one of the key characteristics of the upper Roughty Valley is the extent of its visual enclosure from the surrounding environment. (This is evidenced by the limited ZTV of the proposed development.) The valley itself, and the surrounding area, are sparsely populated and there is limited recreational activity locally, so there are relatively few visual receptors.
- **Value placed on the landscape:** The Landscape Character Assessment produced in 2012 which informed the Kerry RES and the CDP, recognised that the mountains of the upper Roughty Valley are scenic (noting however that the area was not identified in public consultation as a scenic landscape) despite the presence of wind turbines in the landscape. The Assessment found that the area does not provide a setting that contributes to the character/amenity of a settlement, nor does it have any cultural, historical or archaeological associations. Furthermore the Assessment found that there is not a limited amount of the landscape type in the county, and the area is not of county or national importance in landscape terms.

These factors, notably the existing/permitted wind energy development and consensus in three public consultation exercises that development was acceptable in the area, led to the upper Roughty Valley being designated Open to Consideration for further development in the Kerry RES. For the purpose of this assessment, the landscape sensitivity can be classified medium.

Potential Magnitude of Landscape Change

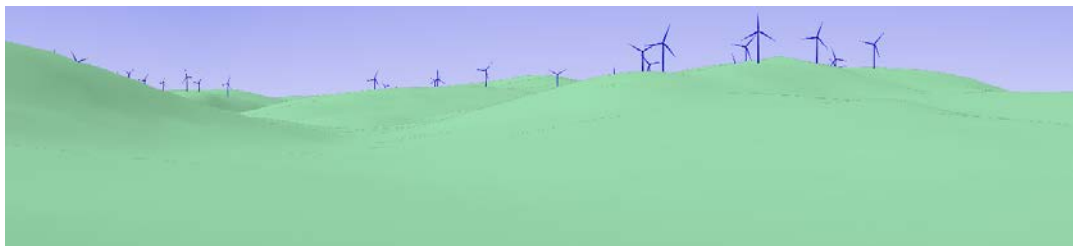
Magnitude of change refers to the potential effects of the proposed development on the main elements, characteristics and values of the receiving environment landscape. In the site's receiving environment these can be summarised as (a) the land use pattern, (b) topography/landform and its perception by people, and (c) scenic and residential amenity.

- **Land Use:** Wind energy generation is an established element of the land use pattern in the upper Roughty Valley, with several wind farms existing and permitted in the mountains enclosing the northern part of the valley. The Grousemount development will occupy the mountains around the southern part of the valley. It will result in a more complete occupation of the upper Roughty Valley landscape by wind energy development, and a significant increase in energy yield from a landscape already characterised by wind farms. The turbines and associated infrastructure will be installed in moorland areas, there being no consequent loss of productive agricultural land or forestry, nor any effect on recreation facilities. The proposed development would result in an adjustment or rebalancing of the existing land use pattern, and would be in keeping with Kerry RES policy to '*secure the maximum electricity generation potential at appropriate locations*'. Accordingly, the potential magnitude of change to land use, as an element of landscape character, is considered medium and beneficial.
- **Landform/topography – physical:** The proposed development will require local changes to landform in the form of cut and fill for the access roads, hardstandings, turbine foundations, etc. At a landscape scale these physical changes are relatively

minor and would be accommodated in the topography by associated drainage works. The potential magnitude of physical change to landform, as it affects landscape character, is considered negligible.

- **Landform/topography – perceptive:** Wind energy development has the potential to affect the perception of landform, by obscuring variations in topography or diminishing the perceived scale of a mountain. Such effects are to an extent inevitable due to the scale of wind development components. The DoEHLG Windfarm Planning Guidelines (Chapter 6) prescribes various considerations in terms of siting, spatial extent, layout and the height of turbines relative to the topographic profile of a site, in order to achieve '*visual balance and the accentuation of landform*'. The proposed development is assessed above against these considerations and found to respond logically and appropriately to the landform. While the perception of the landform would be altered, it would be altered in accordance with the principles of good wind farm design. The potential magnitude of change to the perception of landform, as it affects landscape character, is medium and neutral.

A wireframe view of the proposed development from Coolknoohil, showing the appreciable response of the wind farm design to the local topographic profile.



- **Scenic and residential amenity:** Wind energy development has the potential to affect the scenic quality of views, changing their composition, character and quality by introducing moving infrastructural elements to an otherwise predominantly pastoral or wilderness landscape. The proposed development has the potential to cause these effects on views in the upper Roughty Valley, affecting scenic value and residential amenity. The area is sparsely populated and does not attract significant visitor numbers, but the effects on a number of local residents would be significant. The potential magnitude of change on scenic and residential amenity locally is medium, and adverse. This is explored further in the visual impact assessment below.

It should be noted that the Kerry RES states that there are '*a significant number of one-off houses in all rural areas throughout the county*', the only exception being the higher reaches of mountainous areas. As a result there are houses located in all wind deployment zones. Impacts on residential amenity as a result of wind energy development cannot be entirely avoided. The sparse population of the upper Roughty Valley – and therefore the limited number of residents potentially affected - was an important factor in the selection of the site for development.

The proposed development, comprising 38 turbines with a maximum overall dimension of 126 m along with ancillary infrastructure, is a large wind farm. The magnitude of landscape change resulting from this development can be considered medium (GLVIA definition: Partial loss of or alteration to one or more key elements or features, and/or introduction of elements that may be prominent but may not necessarily be considered to be substantially uncharacteristic in the context of the receiving environment).

Landscape Effects Summary

The significance of landscape effects is determined by measuring the proposed magnitude of change against the sensitivity of the landscape to the change in question. Accordingly, the potential landscape effects of the proposed development can be classified as being of medium significance. The effects would be beneficial in terms of land use (and related renewable energy and climate change policy), but adverse on local residential amenity (while having very limited visual effect on the wider environment, as evidenced in the visual impact assessment below).

12.3.3 Potential Visual Effects

The assessment of visual effects is informed by two key considerations; firstly the extent of the receiving environment from which the development would be visible, and secondly the effect of the development on views and visual amenity in that affected area.

Zone of Theoretical Visibility

The extent of the receiving environment affected by the development is illustrated by means of Zone of Theoretical Visibility (ZTV) mapping, which shows the area from which a development would be (theoretically) visible. The ZTV is calculated based on a 3-D terrain model generated from the 10 m contours of the receiving environment. It does not take account of land cover such as vegetation and buildings, which in reality reduce the area and locations from which a development would be visible. Three ZTV maps are presented in Volume 3 to inform the assessment:

- Map 1: ZTV of the proposed Grousemount Wind Farm turbines – calculated to nacelle height (75.5 m).
- Map 2: ZTV of the proposed Grousemount Wind Farm turbines – calculated to blade tip height (126 m).
- Map 3: ZTV of the proposed Grousemount Wind Farm and all other existing and permitted wind farms in the receiving environment, i.e. the cumulative ZTV – calculated to the turbines' various nacelle heights.

Maps 1 & 2 show the very limited extent of the proposed development's ZTV, despite the large scale of the wind farm. Less than 25% of the area within 30 km of the site would afford views of the turbines. This is the result of (a) the topography of the upper Roughty Valley, which generates an unusually high degree of visual enclosure for the site, and (b) the proposed location of the turbines below the ridgeline of the mountains enclosing the valley.

Effects on Views and Visual Amenity

To inform consideration of the potential effects on views and visual amenity, 24 locations typical of the proposed development's receiving environment were selected for detailed assessment. These viewpoint locations are shown on Figure 12.6.

They were selected to represent (a) the local community (residents of the upper Roughty Valley), (b) the nearest and largest potentially affected settlements in the receiving environment (Kilgarvan, Ballingear, Kenmare), (c) the main potentially affected transport routes in the area (R569), (d) the potentially affected scenic routes and recreation facilities (waymarked ways, etc.), and (e) the wider rural environment.

The viewpoints were also selected to present views of the site from all relevant directions and a range of distances.

Finally, the viewpoint selection also took account of the viewpoints used in previous landscape and visual impact assessments for wind farm development proposals on the site.

The viewpoint locations are as follows:

1. House at Coolknoohil 1: On the local road east towards the Top of Coom.
2. House Coolknoohil 2: On the local road at the centre of the upper Roughty Valley.
3. House at Coolknoohil 3: On the local road north towards Inchee Bridge.
4. R569 at Curraglass South, protected view.
5. R569 at Redtrench North, protected view.
6. R569 east of Caher, protected view.
7. Kilgarvan: The R569 at the eastern edge of the town.
8. R569 at Caher East.
9. Slaheny River Valley, near Carrignamuck, protected view.
10. House beside the R584 approaching the Pass of Kelmaneigh, scenic route S34 (also representing the Beara Gougane Barra Cycling Route).
11. Ballingearry: The bridge over River Lee, scenic route S34.
12. Kealvaugh More, scenic route S33.
13. South shore of Lough Allua, scenic route S32 (also representing the Beara Gougane Barra Cycling Route).
14. House beside the local road near Cahernacaha.
15. Reananerree: Local road at the centre of the village.
16. Local road above Cappagh West, Ballyvourney.
17. House in Ros Alainn estate, Macroom.
18. Kenmare 1: Local road off R569 near the Cross Roads.
19. Kenmare 2: N70 entering Kenmare from the west (also representing the Ring of Kerry and Kerry Cycle Route).
20. Ring of Kerry, protected view, N70 near Lackeen Point.
21. R568 south of Moll's Gap, protected view.
22. The Kerry Way, Gowlane, north of Kenmare.
23. Local road near Annaghilymore, east of Killarney.
24. R585, Cappeen.

In the assessments of each viewpoint, the existing view is described in terms of its main elements, features and characteristics, and the sensitivity of the view is classified as low, medium or high. The proposed change is described (referencing the wireframe images and photomontages for each view, included in Volume 3 of 3), and the magnitude of change is classified as negligible, low, medium or high. Measuring the magnitude of change against the sensitivity of the viewpoint, a conclusion is drawn as to the significance of the visual effects.

Viewpoint 1: House at Coolknoohil beside the local road east towards the Top of Coom

Existing View: In views from the house, and the road in front of the house, the tall, steep, wooded northern flank of Garrigery is prominent beyond the valley beside the road in the foreground. A farm house and shed are visible on the valley floor. There are numerous vertical features in the foreground in the form of fence posts and telegraph poles. To the right of the field of view the land falls away into the centre of the Roughty Valley, and the rugged, moorland covered mountains - Coolnagoppoge in particular - rise to an undulating horizon beyond the valley. There are no wind turbines currently in the view to the south and west, although there is a wind farm on the slopes of Coolknoohil above and behind the house.

Viewpoint Sensitivity: Representing a residential location, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: The large group of 14 turbines on Coolnagoppoge would be prominent in the view, protruding above the horizon to various extents. The siting, spatial extent and arrangement of the turbines respond appreciably to the landform of Coolnagoppoge, the height of the turbines appears appropriate to the height of the mountain, and the turbines have the effect of accentuating the topographic profile. The access tracks to the turbines may be visible in places but generally they run parallel to the contours and thus will be inconspicuous. Although there are turbines close to the house (to the rear) and visible from its domestic environment, currently there are none in the views from the front rooms. The introduction of the wind farm to the landscape would constitute a high magnitude of change.

Impact Significance: The significance of the visual effects at this location would be high.

The introduction of turbines to the view would have an adverse effect on visual and residential amenity. However, the wind farm does represent good design as prescribed in the DoEHLG Windfarm Planning Guidelines, which does mitigate the adverse effect to an extent.

Viewpoint 2: House at Coolknoohil at the centre of the upper Roughty Valley

Existing View: In views to the south and west from the house, and the road in front of the house, the land falls away steeply in the foreground to the grassland and forest covered valley floor traversed by the tree lined Roughty River. The mountains enclosing the upper reaches of the valley are the dominant element of the view. They are rugged and predominantly moorland covered, with blocks of coniferous forest visible, and form a complex, layered horizon with individual peaks discernible. Apart from a neighbouring house, fence posts and telegraph poles there is limited built development in the view. There are no turbines visible to the south and west, although there are two wind farms on the slopes of Coolknoohil above and behind the house.

Viewpoint Sensitivity: Representing a residential location, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: In excess of 25 turbines would be visible and prominent in the view, arranged in distinct groups on individual landform features, protruding above the horizon to various extents. The siting, spatial extent and arrangement of the turbines respond appreciably to the landform. The wind farm comfortably occupies the upper reaches of the valley, the height of the turbines appears appropriate to the height of the mountains, and the turbines accentuate the topographic

profile. Access tracks may be discernible in places but would be inconspicuous in the view. Although there are existing turbines close to the house and visible from its domestic environment, currently there are none in the views from the front rooms. The introduction of the wind farm to the landscape would constitute a high magnitude of change.

Impact Significance: The significance of the visual effects at this location would be high.

The introduction of turbines to the view would have an adverse effect on visual and residential amenity. However, the wind farm does represent good design as prescribed in the DoEHLG Windfarm Planning Guidelines; the relationship of the wind farm and the topography, the co-dominant features of the landscape, is aesthetically ordered and clear, which does mitigate the adverse effect to an extent.

Viewpoint 3: House at Coolknohil beside the local road near Inchee Bridge

Existing View: In views to the south and west from the house, and the road in front of the house, the land falls away in the foreground to the grassland valley floor traversed by the tree lined Roughty River. The mountains enclosing the upper reaches of the valley are the dominant element in the view. They are rugged and predominantly moorland covered, with blocks of coniferous forest visible, and form a complex, layered horizon with individual peaks discernible. There is a greater proportion of built elements in the view than at Viewpoint 2, in the form of houses along the road to the left of the field of view, and a cluster of farm houses to the right on the far side of the valley. The Glanlee wind farm is located on the mountainside above and behind the house and its turbines are prominent in views from the domestic environment of the house.

Viewpoint Sensitivity: Representing a residential location, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: Approximately 20 turbines would be visible and prominent in the view, arranged in distinct groups on individual landform features, protruding above the horizon to various extents. There would be some 'visual stacking' at this particular location (i.e. where two or more turbines stand close together or in front of each other causing visual confusion). Aside from the visual stacking, the siting, spatial extent and arrangement of the turbines respond appreciably to the landform. The wind farm comfortably occupies the upper reaches of the valley, the height of the turbines appears appropriate to the height of the mountains, and the turbines accentuate the topographic profile. Access roads would not be discernible from this location. Although there are existing turbines close to the house and visible from its domestic environment, there are none in the views from the front rooms currently. The introduction of the wind farm to the landscape would constitute a high magnitude of change.

Impact Significance: The significance of the visual effects at this location would be high.

The introduction of turbines to the view would have an adverse effect on visual and residential amenity. While the wind farm does generally represent good design as prescribed in the Wind Energy Planning Guidelines, there would be some visual stacking of turbines in the view to the detriment of visual amenity.

Viewpoint 4: R569 at Curraglass South, Protected View

Existing View: The viewpoint is close to the northern end of the protected view designated section of the R569 and is the first point at which the proposed development would become visible travelling from the north/east on the road, i.e. towards Kenmare. The road runs along a narrow valley floor dramatically enclosed by rugged, moorland covered mountains on both sides. There is very limited human influence in the landscape

beyond the road itself. One of the turbines of the wind farm at Inchincoosh nearby to the west protrudes above the horizon to the left of the field of view.

Viewpoint Sensitivity: Representing a protected view, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: The hub of one turbine and the blade of another would protrude above the horizon in the view ahead (south) along the road, intermittently visible between roadside vegetation. The turbines would be well removed in the view from the existing Inchincoosh turbine. Despite some accumulation of visual effects, wind energy development would not be significantly more prominent in the view and the character and quality of the view from the road would not be altered. The development would constitute a low magnitude of change.

Impact Significance: The visual effects at this location would be of low significance and neutral.

Viewpoint 5: R569 at Redtrench North, Protected View

Existing View: Some 2 km further south along the R569 the view is similar to that of Viewpoint 4, with the valley floor dramatically enclosed by rugged, moorland covered mountains on both sides. There is a small cluster of houses and farm buildings at Redtrench North, which is rare and attracts attention along this stretch of road. The Inchincoosh turbines are not visible from this location.

Viewpoint Sensitivity: Representing a protected view and a residential location, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: The blade tips of five turbines would protrude marginally above the horizon, barely noticeable except for their movement. This would constitute a low magnitude of change.

Impact Significance: The significance of the visual effects at this location would be low.

The movement of the blade tips on the horizon, although inconspicuous in the view, without any more of the development visible to give context may cause visual irritation. This effect, especially on the static view from a house, would be adverse.

Viewpoint 6: R569 East of Caher, Protected View

Existing View: As the R569 approaches the mouth of the upper Roughty Valley from the west the enclosure of the adjacent mountains increases and the roadside landscape changes from pastoral – as it is to the west (refer to Viewpoints 7 & 8) – to more rugged, less cultivated in character. Scrubby vegetation on the roadside restricts lateral views from the road. The turbines of Inchincoosh and Coomagearlahy Wind Farms in the northern part of the upper Roughty Valley are visible ahead along the road, protruding above the horizon.

Viewpoint Sensitivity: The viewpoint represents a protected view. However, views from the road when approaching the site from the west are characterised by wind energy development, so the viewpoint sensitivity to wind energy development is classified medium.

Proposed Change including Cumulative Impact: The hubs of four of the proposed turbines and the blades of three others would protrude above the horizon in the lateral view from the road (to the south), visible intermittently through the roadside vegetation. The turbines would be well removed in the view from the existing Inchincoosh and Coomagearlahy turbines, and relatively inconspicuous due to their lateral position and the

screening effect of roadside vegetation. Despite some accumulation of visual effects, wind energy development would not be significantly more prominent in the view and the character and quality of the view from the road would not be altered. The development would constitute a low magnitude of change.

Impact Significance: The visual effects at this location would be of low significance and neutral.

Viewpoint 7: The R569 at the eastern edge of Kilgarvan

Existing View: The orientation of the streets and houses combined with the built enclosure along the streets limits the visibility of the site environs from within Kilgarvan. At the eastern edge of the village there is an expansive view east along the lower Roughty Valley towards the mountains of the upper valley. This view is experienced by road users and the residents of houses at the edge of the village. The undulating valley floor in the foreground is traversed by the Roughty River in a corridor of scrubby woodland. The mountains enclosing the upper reaches of the valley rise in the distance to form an undulating horizon. The broad western flank of Barnastooka is prominent among these, to the right of the field of view. Dark blocks of forestry can be seen on the otherwise moorland covered mountain sides. The entire array of turbines in the northern part of the upper Roughty Valley can be seen protruding above the distant horizon.

Viewpoint Sensitivity: Representing the view from the regional road and the adjacent houses, but where views are already characterised by wind energy development, the viewpoint sensitivity is medium.

Proposed Change including Cumulative Impact: The blades of four turbines would be visible protruding above the ridgeline of Barnastooka to the right of the field of view. The turbines would be well removed from the existing turbines in the view, and relatively inconspicuous due to their lateral position (relative to the alignment of the valley) and screening by the topography. Despite minor accumulation of visual effects, wind energy development would not be significantly more prominent in the view and the character and quality of the view would not be altered. The development would constitute a negligible magnitude of change.

Impact Significance: The visual effects at this location would be of low significance and neutral.

Viewpoint 8: The R569 at Caher East

Existing View: The R569 (not designated a protected view at this location) is on a rise at Caher East and affords an expansive view to the east towards the upper Roughty Valley. In the foreground to middle distance the valley floor is undulating, with grassland fields divided by mature treelines. There is a higher density of houses and other built elements in the landscape compared to the valley further east. The enclosure of the mountains to the north and south can be seen increasing in the distance as the valley narrows. The mountains around the upper valley form an undulating horizon with the broad western flank of Barnastooka prominent to the right of the field of view. Although some are screened by vegetation in the foreground a large number of turbines in the northern part of the upper Roughty Valley can be seen protruding above the distant horizon.

Viewpoint Sensitivity: Representing the view from a busy regional road, the viewpoint sensitivity is medium.

Proposed Change including Cumulative Impact: The hubs of three and the blades of two turbines would be visible protruding above the ridgeline of Barnastooka to the right of

the field of view. The turbines would be well removed from the existing turbines in the view, and relatively inconspicuous due to their lateral position. Despite minor accumulation of visual effects, wind energy development would not be significantly more prominent in the view and the character and quality of the view would not be altered. The development would constitute a low magnitude of change.

Impact Significance: The visual effects at this location would be of low significance and neutral.

Viewpoint 9: Slaheny River Valley, near Carrignamuck, protected view

Existing View: The Slaheny River Valley lies parallel to the west of the upper Roughty Valley. The local road along the western valley side affords spectacular views of the broad, flat valley, the snaking river and the enclosing mountains, through gaps in the roadside vegetation. The view is protected by the Kerry CDP. Apart from widely dispersed farm houses, fence posts, telegraph poles and blocks of coniferous forest on the mountain sides, human influence in the landscape is limited.

Viewpoint Sensitivity: Representing a protected view, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: For a stretch of approximately 2 km along the road, between gaps in the roadside vegetation the blade tips of up to two turbines would be intermittently visible, protruding marginally above the horizon. This would amount to a negligible magnitude of change; it is highly unlikely the turbines would be noticed.

Impact Significance: The visual effects at this location would be of low significance and neutral.

Viewpoint 10: House beside the R584 approaching the Pass of Kelmeneigh, scenic route S34

Existing View: There is a cluster of houses alongside the R584 at this location just east of the turn towards the Pass of Kelmeneigh. The houses orientate north-south. The road is a Scenic Route, and is part of the Beara Gougane Barra Cycling Route. The view from the road, and from roadside houses, is of grassland fields in the foreground divided by a combination of hedgerows, treelines (featuring tall conifers) and stone walls, with dispersed clusters of houses and farm buildings. The land rises steeply to the north where the rugged, moorland covered flanks of Bealick and Coomataggart Mountains rise to form the horizon line. There is a distinctly 'working landscape' character to the view, but there are currently no wind turbines visible.

Viewpoint Sensitivity: Representing a Scenic Route and residential location, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: The hub of one turbine and the blade tips of two others would protrude above the horizon in the view to the north. Roadside vegetation would screen the turbines for much of the length of the road, but not from all the houses. This would constitute a low magnitude of change.

Impact Significance: The significance of the visual effects at this location would be medium.

Although being introduced to a working landscape, the turbines would represent a change in the composition of the land use regime and landscape elements in view. The movement of the blades on the horizon, although affecting a small part of an expansive view, may cause visual irritation. These effects, especially on the static view from a house, would be

adverse.

Viewpoint 11: Ballineary: The bridge over River Lee, scenic route S34

Existing View: At the bridge over the River Lee, entering Ballineary village from the west there is a combination of urban and rural elements in the landscape. Rows of houses orientate north-south overlooking the river. There is a concentration of infrastructure and other built features such as signage and telegraph poles in the foreground. Beyond the village the land rises steeply to the north west, to a layered horizon in which Coomataggart Mountain is a distinct feature.

Viewpoint Sensitivity: Representing a Scenic Route and residential location, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: The hubs of two turbines and the blade of another would protrude above the horizon of Coomataggart, framed in the view by hills in the middle distance. Due to their position to the north west the turbines would generally not be visible from the houses, but they would be visible from their domestic environment. This would constitute a low magnitude of change.

Impact Significance: The significance of the visual effects at this location would be low and neutral.

The turbines would be introduced to a complex landscape comprising urban and rural elements. The view is scenic but has capacity to accommodate change. The turbines, although a minimal intrusion in the view, would be framed by the topography, lending balance to their visual effect.

Viewpoint 12: Kealvaugh More, scenic route S33

Existing View: A minor local road traverses Kealvaugh More south of Ballineary and the road is designated a Scenic Route in the Cork CDP. From the road at the summit a 360 degree view is afforded, in which a great variety of landscapes and landscape features is visible, including wind farms in the Derrynasaggart Mountains to the north east. There are mountains in all directions and at various distances forming a complex, layered horizon.

Viewpoint Sensitivity: Representing a Scenic Route, but one from which wind energy development is visible, and where there is capacity to accommodate change in the landscape, the viewpoint sensitivity is medium.

Proposed Change including Cumulative Impact: The hubs of four turbines and the blade tip of one more would protrude above the horizon of Coomataggart to the north west. In a 360 degree view of great depth and landscape variety this would constitute a negligible magnitude of change.

The proposed turbines would be more prominent than the other more distant turbines in view, and there would be some accumulation of the visual effects of wind development.

Impact Significance: The significance of the visual effects at this location would be low and neutral.

Although the turbines may attract attention and the prominence of wind development would be somewhat increased in the view, the development would not detract from the character or scenic quality of the landscape.

Viewpoint 13: South shore of Lough Allua, scenic route S32

Existing View: A local road runs along the south shore of Lough Allua. There is dense vegetation along the shoreline which restricts lateral views from the road, but at gaps -

including at a launching point for small boats (the selected viewpoint) – there are views over the lake. Widely dispersed houses can be seen on the far shore, above which moorland and forest covered hills rise to enclose the lake, and in the distance to the north west the outer flanks of the mountains surrounding the upper Roughty Valley form a layered, undulating horizon.

Viewpoint Sensitivity: Representing a Scenic Route, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: For the majority of the length of the road the development would be screened by foreground vegetation. However, at gaps in the vegetation the hubs of four turbines and the blade tip of another would protrude above the distant horizon to the north west. This would constitute a low magnitude of change.

Impact Significance: The significance of the visual effects at this location would be medium.

In the view attention is drawn to the lake and the lake shore. However, the distant mountains also contribute to the scenic quality and the landscape is relatively free of human influence. The introduction of turbines onto the horizon, even though only a minor intrusion, would have an adverse effect.

Viewpoint 14: House beside local road at Cahernacaha

Existing View: This viewpoint represents the sparsely populated rural landscape in Co. Cork to the east of the site. The local road at Cahernacaha is elevated, providing panoramic views west and south from the road (and the roadside house at this location). The land falls away from the road into the Bunsheelin River valley, a marginal landscape of wet grassland fields, hedgerows, tree lines and patches of scrub. Widely dispersed farm houses can be seen around the edge of the valley. Rugged, moorland and forest covered mountains enclose the valley, forming a layered horizon. The scene is of a marginal working landscape. There are currently no wind turbines in view.

Viewpoint Sensitivity: Representing a residential location the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: The hubs of four turbines and the blade tips of three would protrude above the horizon to the west, to the side of the valley that is the focus of the view. The turbines could not be seen from inside the house but would be visible from parts of the domestic environment and the road approaching the house. In the context of the panoramic view this would constitute a low magnitude of change.

Impact Significance: The significance of the visual effects at this location would be low.

Although being introduced to a working landscape, the turbines would represent a change in the composition of the land use regime and landscape elements in view. The movement of the blades on the horizon, although affecting only a small part of an expansive view, may cause visual irritation. These effects would be adverse.

Viewpoint 15: Reananarree

Existing View: The local road at this location is elevated, providing panoramic views west and south. The landscape in view is undulating and of a marginal upland character, comprised of patches of grassland, bog, scrub and coniferous forest. Rugged hills and more distant mountains form a complex, layered horizon. Fence posts, gates and telegraph poles are prominent in the foreground alongside the road, contributing to the working landscape character of the view. The scenic quality of the landscape is limited.

Viewpoint Sensitivity: Representing the view from a road through a working landscape the viewpoint sensitivity is medium.

Proposed Change including Cumulative Impact: The hubs of two turbines and the blade tips of two would protrude above the distant horizon to the west. In the expansive view they would be barely discernible. This amounts to a negligible magnitude of change.

Impact Significance: The significance of the visual effects at this location would be low and neutral.

The minor intrusion of the turbines into a landscape with a high visual absorption capacity would not significantly alter the character or quality of the view.

Viewpoint 16: Local road above Cappagh West, Ballyvourney

Existing View: The local road gives access to the uplands above Ballyvourney, including Mullaghanish on which six turbines are permitted for development. The view south and west from the elevated location is of a marginal upland landscape comprising broad rounded hills covered by conifer forests, moorland and wet grassland fields. A large number of turbines is visible in the distance to the south west, but occupying a relatively small portion of the expansive horizon. These are the wind farms in the northern part of the Roughty Valley.

Viewpoint Sensitivity: Representing the view from a road through a working landscape the viewpoint sensitivity is medium.

Proposed Change including Cumulative Impact: The hubs of two turbines and the blades of three would protrude above the distant horizon to the south west alongside the existing turbine array, increasing its spatial extent marginally. There would be no significant accumulation of visual effects of wind energy development. This amounts to a negligible magnitude of change.

Impact Significance: The significance of the visual effects at this location would be low and neutral.

Viewpoint 17: House in Ros Alainn estate, Macroom

Existing View: The viewpoint was selected to test the visual effects of the development on Macroom, one of the larger towns falling into the wind farm's ZTV. The elevation and orientation of the Ros Alainn estate affords the best available view towards the site in the town environs. However, woodland on the hills to the west of the town screens the distant uplands from view.

Viewpoint Sensitivity: The viewpoint represents a residential location but one in an urban area, where there is a concentration of built elements in the landscape. The viewpoint sensitivity is medium.

Proposed Change including Cumulative Impact: The ZTV indicates that a number of turbines would be theoretically visible on the very distant (approximately 23 km distant) uplands. However, the turbines, along with the existing wind farms in the upper Roughty Valley, would in fact be screened from view by vegetation in the middle distance. There would be no change to the view.

Impact Significance: There would be no visual effects at this location.

Viewpoint 18: Kenmare 1: Local road off R569 near the Cross Roads

Existing View: The viewpoint was selected to represent views from the eastern outskirts

of Kenmare. Generally, the orientation of the streets and houses combined with the built enclosure along the streets limits the visibility of the site environs from within Kenmare, and it is necessary to travel some distance beyond the edge of town to obtain a view.

The view is taken from a short distance off the R569 near Roughty Bridge. The undulating floor of the lower Roughty Valley extends from the foreground into the distance, with the grassland fields divided by fences and treelines. The enclosure of the mountains to the north and south can be seen increasing in the distance as the valley narrows, and the mountains around the upper valley form an undulating horizon. The entire array of turbines in the northern part of the upper valley can be seen protruding above the distant horizon.

Viewpoint Sensitivity: Representing the view from the regional road and the adjacent houses, but where views are already characterised by wind energy development, the viewpoint sensitivity is medium.

Proposed Change including Cumulative Impact: The hubs of two turbines and the blades of three would be visible protruding above the distant horizon to the right of the extensive existing array. While somewhat removed from the main array, they occupy the same distinct section of the horizon, i.e. the mountains of the upper Roughty Valley, framed by the sides of the lower valley on the foreground. Despite minor accumulation of visual effects, wind energy development would not be significantly more prominent in the view, and the character and quality of the view would not be altered. The development would constitute a negligible magnitude of change.

Impact Significance: The visual effects at this location would be of low significance and neutral.

Viewpoint 19: Kenmare 2: N70 entering Kenmare from the west, also representing the Ring of Kerry and Kerry Cycle Route

Existing View: This viewpoint was also selected to represent views from the town of Kenmare, as well as the cycling and driving routes that follow the N70 west of Kenmare, and the Kerry Way which joins the road at this location. The visual enclosure of buildings, vegetation, etc. in the town is limiting of views of the surrounding landscape. However at certain locations a glimpse of the distant upper Roughty Valley mountains is afforded, such as at the N70's western entrance to the town.

Residential properties, their walls and gardens, and business premises line the road, interspersed at the peri-urban location by roadside fields. The urban area is visible down the road in the middle distance, and this is the focus of the viewer's attention at the entrance to the town. Tall mountains to the south of the Kenmare River rise to the right of the field of view and the distant mountains of the upper Roughty Valley form part of the horizon directly behind the town in the view. The entire array of turbines in the northern part of the upper Roughty Valley is theoretically visible at this location. However foreground vegetation and built elements screen the majority of the turbines and at a distance of some 18 km they are difficult to discern.

Viewpoint Sensitivity: Representing the view from several recreation and tourism routes, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: The hubs of three turbines and the blades of five would be visible protruding above the distant horizon to the right of the existing array, all framed by the taller mountains to the right of the field of view. Due to their relative elevation, the proposed turbines would be more prominent than the existing turbines in the view. However, at this distance there would not be a significant

accumulation of visual effects and the character and quality of the view would not be altered. Given also that attention is focussed on the foreground at this location, the development would constitute a negligible magnitude of change.

Impact Significance: The visual effects at this location would be of low significance and neutral.

Viewpoint 20: Ring of Kerry, protected view, N70 near Lackeen Point

Existing View: For long stretches of the N70 west of Kenmare the road is removed from the coastline and roadside vegetation including blocks of coniferous forest further restricts views of the mountains in the distance to the east. For a short stretch approaching the mouth of the Blackwater River (from the west) the road runs alongside the rocky coastline and a view up the Kenmare River to the east is afforded.

The eye is drawn to the broad expanse of the bay, the coastline and the row of mountains across the bay to the south. On the most distant mountains in view, to the east, the array of turbines around the upper Roughty Valley is theoretically visible. However, at nearly 30 km they are difficult to discern even in clear conditions.

Viewpoint Sensitivity: Representing the view from several recreation and tourism routes, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: The hub of one and the blades of several other turbines would be theoretically visible protruding above the distant horizon to the right of the existing array, all framed by the taller mountains to the right of the field of view. There would not be any significant accumulation in the visual effect of wind energy development in the landscape. At a distance of 30 km, and given that attention is focussed across the bay at this location, the development would constitute a negligible magnitude of change.

Impact Significance: The visual effects at this location would be of low significance and neutral.

Viewpoint 21: R568 south of Moll's Gap, protected view

Existing View: For a stretch of less than 2 km to the south of Barfinnihy Lough on the flank of Boughil Mountain the R568 passes through the wind farm's ZTV. The land falls away from the roadside into a bowl-like upland valley flanked by moorland covered mountains which frame a complex, layered horizon to the east. A cluster of existing turbines is visible, occupying a small section of the distant horizon. However at more than 20 km they are difficult to discern even in clear conditions and they do not affect the character or quality of the protected view.

Viewpoint Sensitivity: Representing a protected view, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: The hubs of 10 and the blades of several further turbines would be visible protruding above the distant horizon to the right of the existing cluster. The proposed turbines would be more prominent than the existing turbines in view, and there would be some accumulation visual effects from wind development. In a panoramic view of great depth, in which the middle distant landform and taller mountains on the horizon are the focal points, this would constitute a low magnitude of change.

It should be noted that the development would not be visible from Moll's Gap. The section of the R568 potentially affected is some 2km south/west of Moll's Gap.

Impact Significance: The visual effects at this location would be of low significance but

adverse. In a protected view relatively free of built development the visual presence of wind energy development would be marginally increased, altering the character and scenic quality of the landscape.

Viewpoint 22: The Kerry Way, Gowlane, north of Kenmare

Existing View: The stretch of the Kerry Way over the mountains from Killarney to Kenmare is a popular amenity, providing access to a remote landscape relatively free of human influence. Passing between the peaks of Peakeen and Knockanaguish the trail descends to Gowlane where it joins the road network and briefly (for approximately 1 km) passes through the wind farm's ZTV before descending further into Kenmare to the south.

The view from Gowlane is of an undulating, marginal upland landscape with mountains at various distance forming a complex, layered horizon. In contrast to the landscape visible from the trail further north, there is some human influence visible in the form of roads, cultivated fields, blocks of forest, fences and telegraph poles. The array of existing turbines around the upper Roughty Valley is visible occupying a small section of the distant horizon to the east. At 15 km they are not prominent features and they do not negatively affect the character or quality of the view.

Viewpoint Sensitivity: Representing the view from an outdoor recreation and tourism facility, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: The hubs of eight and the blades of three further turbines would be visible protruding above the distant horizon to the right of the existing cluster, increasing the spatial extent of the turbine array. The prominence of wind development in the view would be increased but in the context of a panoramic view of a working landscape this would constitute a low magnitude of change.

Impact Significance: The visual effects at this location would be of medium significance and neutral. The character and scenic quality of the landscape in view would not be altered.

Viewpoint 23: Local road near Annaghilymore, east of Killarney

Existing View: The wind farm's ZTV extends into an area of rural landscape to the east of Killarney. The view is taken from a local road beside a row of houses on the south-facing side of a hill in this area, some 10 km east of Killarney and 22 km north of the site.

An undulating agricultural plain stretches into the distance, covered predominantly by grassland fields but with patches of coniferous forest and scrub visible. The horizon to the south is formed by all the mountains of south Co. Kerry, with Crohane and Mangerton prominent to the right of the field of view, and the Paps and Derrynasaggart Mountains to the left. In a saddle on the horizon the array of existing turbines of the upper Roughty Valley is visible, protruding above the horizon, but difficult to discern at 22 km even in clear conditions. They do not affect the character or quality of the view.

Viewpoint Sensitivity: Representing the view from houses, the viewpoint sensitivity is high.

Proposed Change including Cumulative Impact: Ten of the proposed turbines would be visible, situated amongst the existing array and mostly below the horizon line, i.e. seen against a backdrop of taller mountains further south. The extent of the turbine array, and the prominence of wind energy development in the landscape, would not be significantly increased. This would constitute a negligible magnitude of change.

Impact Significance: The visual effects at this location would be of low significance and

neutral.

Viewpoint 24: R585, Cappeen

Existing View: In the hilly landscape of Co. Cork to the east of the site, there are patches – mostly on the west-facing hillsides – where the wind farm would potentially be visible. A viewpoint in the small rural settlement of Cappeen, some 23 km east of the site at the junction of the R585 and R588, has been selected to represent this area.

The view from the road, and the cluster of houses and shop beside the road, is of an undulating marginal landscape of grassland fields divided by mature treelines, large blocks of coniferous forest (increasing in proportional coverage to the west towards the site) and patches of rocky outcrops and scrub. The hills and more distant mountains to the west and south form a complex, layered horizon.

Viewpoint Sensitivity: Representing the view from a regional road through a working rural landscape, the viewpoint sensitivity is medium.

Proposed Change including Cumulative Impact: The hubs of five of the turbines would be theoretically visible protruding above the distant horizon to the east, partly screened by foreground vegetation and difficult to discern at 23 km distance. This would constitute a negligible magnitude of change.

Impact Significance: The visual effects at this location would be of low significance and neutral. The minor intrusion of the turbines into a landscape with a high visual absorption capacity would not significantly alter the character or quality of the view.

Table 13.2: Visual Effects Assessment Summary

No.	Description	Viewpoint Sensitivity	Magnitude of Change	Significance of Effect
1	House at Coolknoohil beside local road east to the Top of Coom	High	High	High, Adverse
2	House at Coolknoohil at the centre of the upper Roughly Valley	High	High	High, Adverse
3	House at Coolknoohil beside local road near Inchee Bridge	High	High	High, Adverse
4	R569 at Curraglass South, Protected View	High	Low	Low, Neutral
5	R569 at Redtrench North, Protected View	High	Low	Low, Adverse
6	R569 East of Caher, Protected View	Medium	Low	Low, Neutral
7	The R569 at the eastern edge of Kilgarvan	Medium	Negligible	Low, Neutral
8	The R569 at Caher East	Medium	Low	Low, Neutral
9	Slaheny River Valley, near Carrignamuck, protected view	High	Negligible	Low, Neutral
10	House beside the R584 near the Pass of Kelmaneigh, scenic route S34	High	Low	Medium, Adverse
11	Ballingeary: The bridge over River Lee,	High	Low	Low, Neutral

No.	Description	Viewpoint Sensitivity	Magnitude of Change	Significance of Effect
	scenic route S34			
12	Kealvaugh More, scenic route S33	Medium	Negligible	Low, Neutral
13	South shore of Lough Allua, scenic route S32	High	Low	Medium, Adverse
14	House beside local road at Cahernacaha	High	Low	Low, Adverse
15	Reananerree	Medium	Negligible	Low, Neutral
16	Local road above Cappagh West, Ballyjourney	Medium	Negligible	Low, Neutral
17	House in Ros Alainn estate, Macroom	Medium	Negligible	Low, Neutral
18	Kenmare 1: Local road off R569 near the Cross Roads	Medium	Negligible	Low, Neutral
19	Kenmare 2: N70 entering Kenmare from the west	High	Negligible	Low, Neutral
20	Ring of Kerry, protected view, N70 near Lackeen Point	High	Negligible	Low, Neutral
21	R568 south of Moll's Gap, protected view	High	Negligible	Low, Adverse
22	The Kerry Way, Gowlane, north of Kenmare	High	Low	Medium, Neutral
23	Local road near Annaghilymore, east of Killarney	High	Negligible	Low, Neutral
24	R585, Cappeen	Medium	Negligible	Low, Neutral
Key to Visual Impact Classification				
Beneficial		Neutral		Adverse

12.4 MITIGATION

Landscape and visual factors were taken into account in the selection of the site, and in the planning and design of the wind farm. This is reflected in its siting, spatial spread, turbine arrangement and the layout of ancillary elements, which respond appreciably to the landform which is the predominant element of the landscape.

Wind turbines are by their nature highly visible elements and cannot be easily screened. Their function dictates that they be located on exposed sites. It is not considered that any mitigation measures, other than substantial reduction in the scale of the wind farm (in number or size of turbines), would have any significant effect in reducing the landscape or visual impacts. However, this would make less than optimal use of the site's wind resource, for limited appreciable benefit.

12.4.1 Turbine Colour & Appearance

In the majority of views the turbines will be seen against the sky. Subject to agreement with the Planning Authority, it is proposed that all of the components will be coloured white or matt grey. Taking into consideration the upland weather conditions of the site, a darker colour could make the turbines appear industrial in character. They would also be more visible against the sky.

The turbines will carry no external advertising or lettering except for statutory notices on the tower door.

The surface coating on the wind turbine blades will be a matt, non-reflecting finish. This will ensure that there will be no flashing or glinting when the rotating blades reflect direct sunlight.

12.4.2 Wind Farm Design

The size of the wind farm and the arrangement of the turbines are related to the landform. This will result in an appreciable balance between the natural and built elements of the landscape and the avoidance of visual confusion.

All turbines will have equal rotational speed in equal wind conditions. The positioning of the turbines at Grousemount will ensure that an apparent counter rotation effect, where one or more sets of turbine blades appears to rotate in a direction opposite to that of the others and which can be visually disturbing, will not occur.

The visual impact of the electrical connections between the turbines and Coomataggart Substation will be minimised, as follows:

- Connections will be by means of underground cabling rather than by overhead lines.
- Cable trenching and reinstatement will occur during the construction phase in conjunction with the site track reinstatements to minimise disturbance.

While the anemometer masts will be imperceptible in distant views, they will comprise a narrow metal lattice structure, thereby decreasing its visibility from viewpoints close to the site.

12.5 CONCLUSIONS

12.5.1 Landscape Effects

A number of factors influenced the decision to locate the proposed development in the upper Roughty Valley:

- The area has a strong wind resource.
- The area is zoned Open to Consideration for wind energy development in the Kerry RES. The *Kerry Landscape Character Assessment* prepared in 2012 to inform the RES states regarding the area's wind energy development capacity: "*Considered to have some additional capacity for wind development, namely extensions to existing wind farm developments...*". At the time of writing the Landscape Character Assessment in 2012, permission for the development the subject of this assessment already existed. This is significant as the RES indicates that the Local Authority considers the area to have potential for development additional to the proposed development, i.e. the development would not exceed the receiving environment's capacity for landscape change.
- Wind energy generation is an established element of the land use pattern in the area. There are several existing wind farms (Inchincoosh, Coomagearahy, Coolknoohil) and several permitted developments in the northern part of the range. The proposed development would occupy the southern part of the range, the upper reaches of the valley. The RES requires that the energy yield from appropriate locations be maximised.

- The topography of the upper Roughty Valley is such that development within the valley would have limited visual exposure to the wider environs.
- The land use capability of the area is limited, therefore development would not compromise any existing productive land use.
- The settlement pattern in the vicinity of the site – within and around the upper Roughty Valley - is sparse. There are few main transport routes or settlement centres, i.e. concentrations of potential visual receptors, in the wider receiving environment.
- The area has limited recreation or tourism use relative to other uplands in counties Kerry and Cork. The *Kerry Landscape Character Assessment* found that the area does not provide a setting that contributes to the character/amenity of a settlement, nor does it have any cultural, historical or archaeological associations. Furthermore the Assessment found that there is not a limited amount of the site's landscape type in the county, and the area is not of county or national importance in landscape terms.

These factors informed the classification of the receiving environment landscape sensitivity as medium. The magnitude of landscape change resulting from the proposed development, which the assessment found is appropriately sited and designed in response to the key landscape characteristics, is also classified medium.

Therefore, the significance of the potential landscape effects can be classified as medium. The effects would be beneficial in terms of land use (contributing significantly to the realisation of County Kerry's renewable energy and climate change policy), but adverse on local residential amenity, while having very limited visual effect on the wider receiving environment.

12.5.2 Visual Effects

The ZTV maps produced to inform the assessment show that despite its large scale the proposed wind farm's visual effects would be very limited in extent. Less than 25% of the area within 30km of the site would afford views of the turbines. This is unusual, and is the result of two factors: (a) the topography of the upper Roughty Valley, where the enclosing mountains generate a high degree of visual enclosure for the site, and (b) the proposed siting of the turbines within the valley below the ridgeline of the enclosing mountains, thereby limiting the extent of their protrusion above the ridgeline in views from the surroundings.

For this assessment, 24 viewpoints were selected from the potentially affected areas of the receiving environment, i.e. the ZTV, for detailed assessment of the wind farm's potential visual effects. The viewpoints were selected to represent the following:

- The local community, i.e. the residents of the upper Roughty Valley.
- The nearest and largest potentially affected settlements in the wider receiving environment, namely Kilgarvan, Ballingearry, Kenmare, Macroom.
- The main potentially affected transport routes in the area
- The potentially affected scenic routes and recreation facilities (waymarked ways, etc.).
- The wider rural environment.

The viewpoints were also selected to present views of the site from all directions and a

range of distances. Finally, for comparability the viewpoint selection took account of the viewpoints used in previous assessments of wind farm proposals for the site.

The assessment found that in all areas outside of the upper Roughty Valley, visual exposure to the wind farm would be very limited. The large scale of the development would not be apparent in any of the views assessed. The few turbines that would be visible, would generally be seen as part of the existing array of turbines occupying the mountains around the valley. The prominence of wind energy development in views would not be significantly increased.

Thus, for 16 of the 24 viewpoints assessed, representing the vast majority of the receiving environment (including the R569 protected views, Kilgarvan, Kenmare and the surrounding recreation and tourism amenities), it can be concluded that the effects of the development on visual amenity would be of low significance and neutral. There would be no significant effect on the composition, character or quality of views.

This is remarkable given the scale of the development.

However, it was found that in two small areas of the receiving environment, adverse effects on visual amenity would be experienced. In County Cork to the south east of the site, in the scenic area around Ballingeary and Lough Allua, there are currently no wind turbines visible in the landscape (except at the most elevated locations). In certain locations / views within this area the introduction of turbines to a landscape relatively free of human influence would compromise the visual amenity, even though only a small number of turbines might be visible. The area is very sparsely populated – limiting the number of affected visual receptors, but a number of the roads in the area are designated Scenic Routes.

Visual amenity would also be adversely affected in the upper Roughty Valley. In views from the Coolknoohil area the wind farm would be prominent - the array of turbines becoming co-dominant features along with the mountains in views from a number of houses. The character and quality of views would be significantly altered.

It is to be noted, as it is in the Kerry RES, that there are a significant number of one-off houses in all rural areas throughout the county, and that there are houses located in all wind deployment zones identified in the RES. Impacts on residential amenity as a result of wind energy development cannot be entirely avoided. Therefore, the objective should be, through careful siting, to restrict the impacts to the smallest area and most limited number of visual receptors possible, and to apply best practice in the design of wind development.

In this regard the assessment found that the landform of the site lends itself to good wind farm design as prescribed in the DoEHLG Windfarm Planning Guidelines. The photomontages of views from houses at Coolknoohil show that the turbines would be arranged in distinct groups on individual landform features - their siting, spatial extent and arrangement responding appreciably to the landform – with the wind farm comfortably occupying the upper reaches of the valley. The height of the turbines is appropriate to the height of the mountains and the turbines would accentuate the topographic profile. Thus, the design mitigates the adverse visual effects of the wind farm to some extent.

12.5.3 Summary

In conclusion, the proposed development can be considered an appropriate intervention in the landscape. It would make optimal use of a unique combination of favourable landscape characteristics and a strong wind resource, while limiting the effects on visual amenity as far as is possible for a development of significant scale.

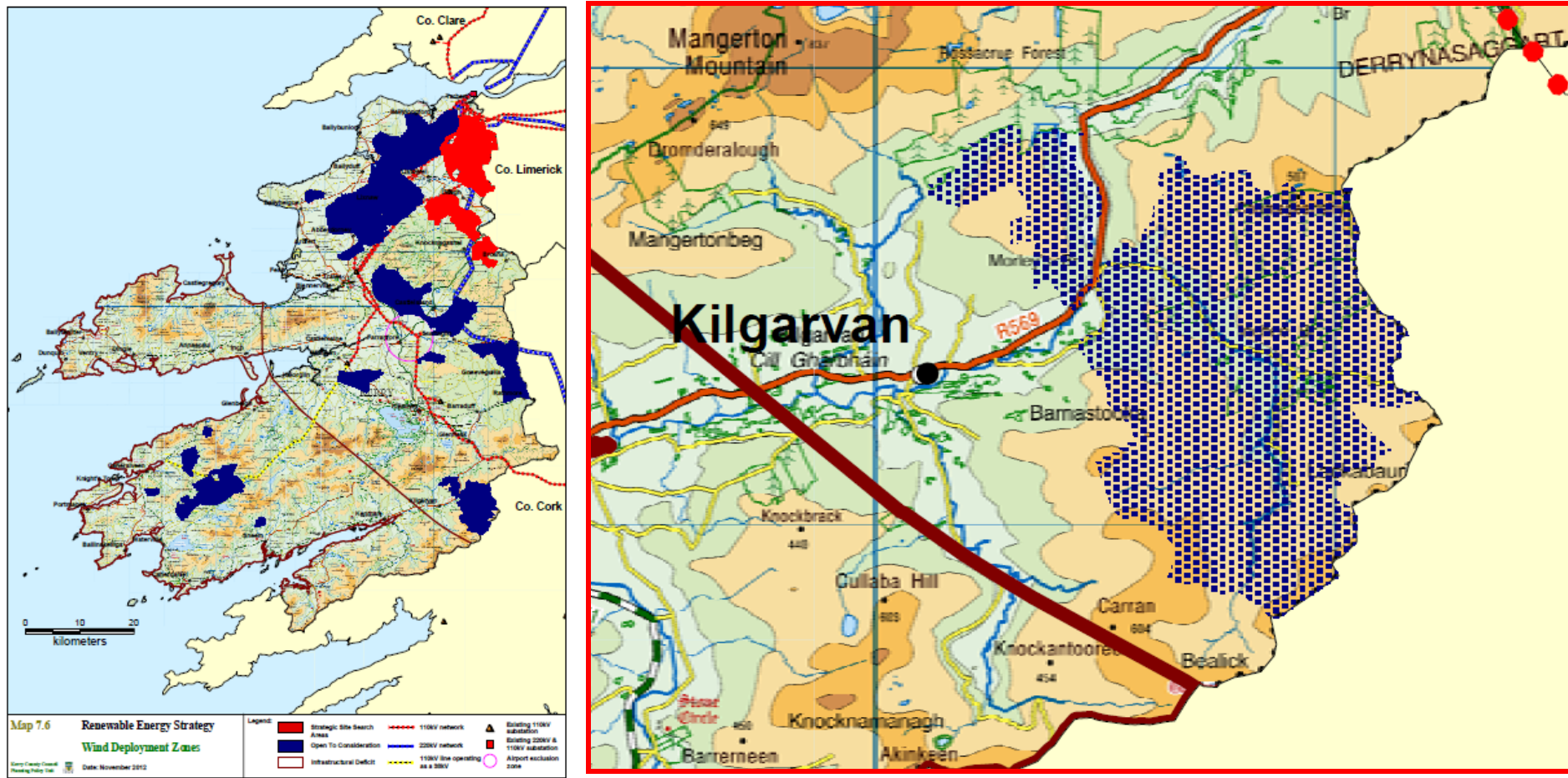


Figure 12.1: Kerry RES Map 7.6 Wind Deployment Zones, and an extract of Map 7.6 enlarged to show the site location (areas Open-to-Consideration are shaded blue)

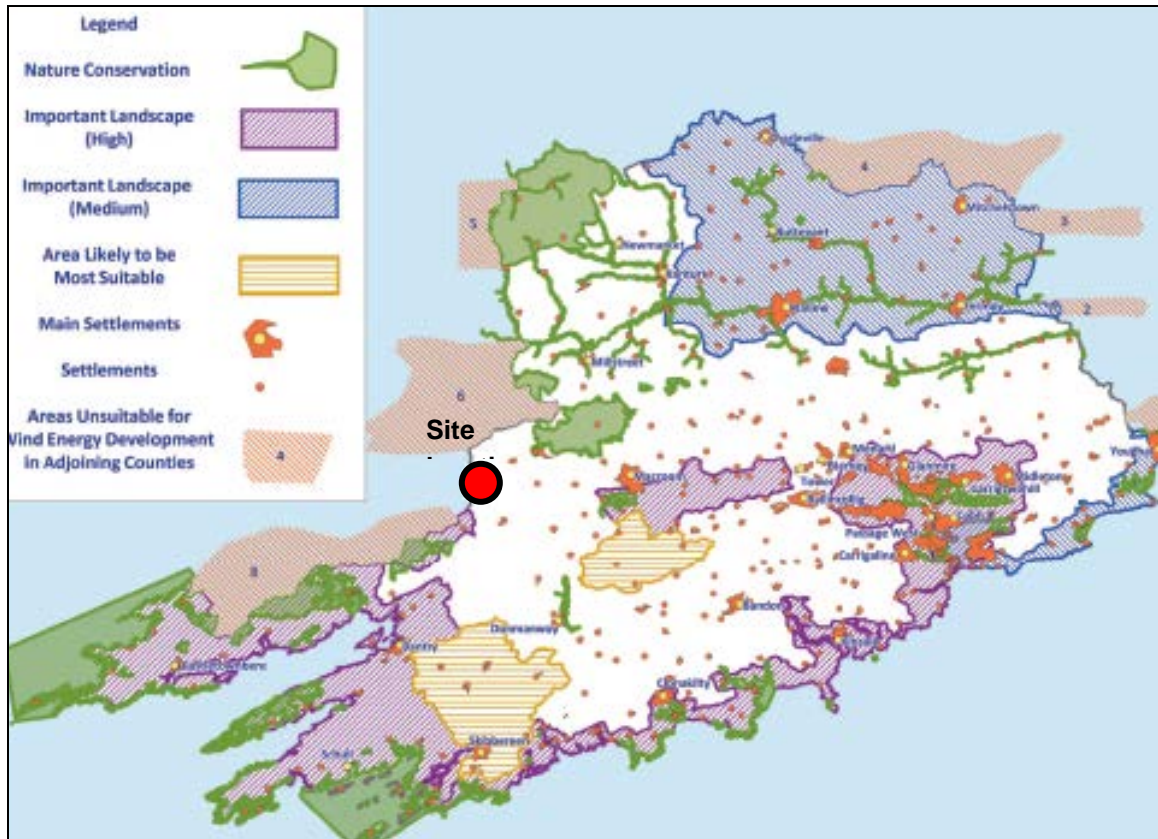


Figure 12.2: Cork County Development Plan - Figure 9.2 Policy Considerations for Wind Energy Projects

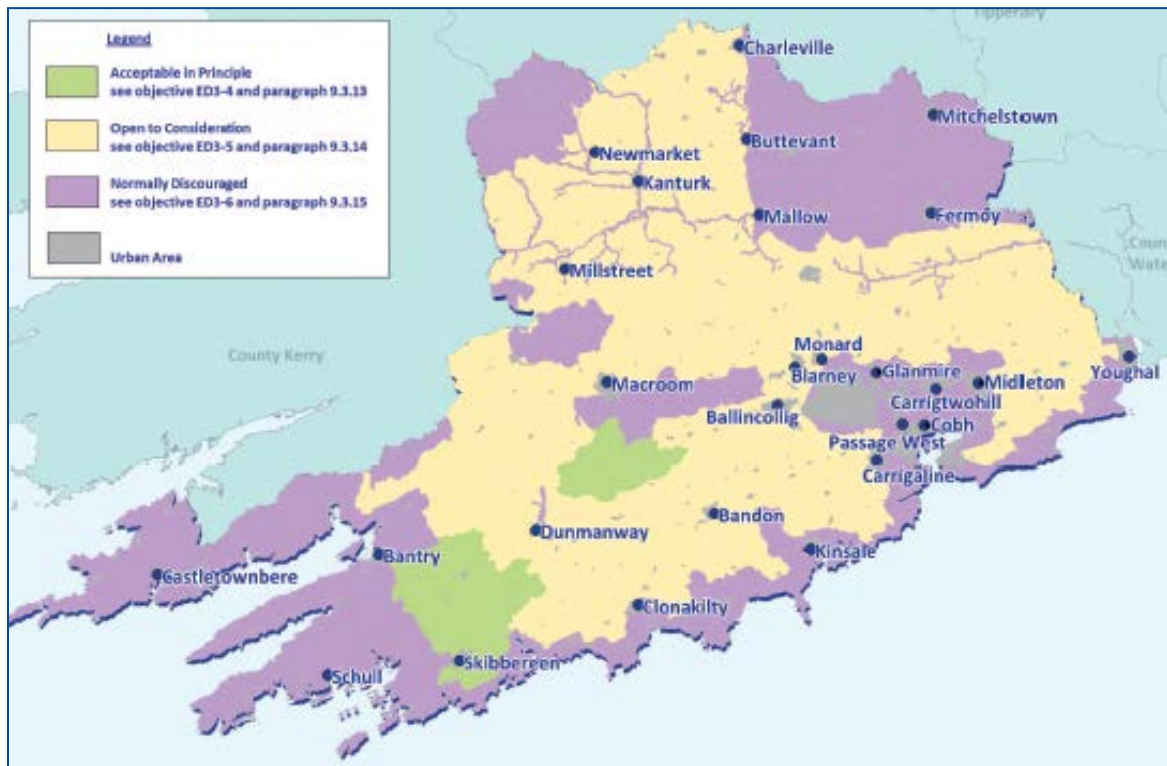


Figure 12.3: Cork County Development Plan - Figure 9.3 Wind Energy Strategy Map

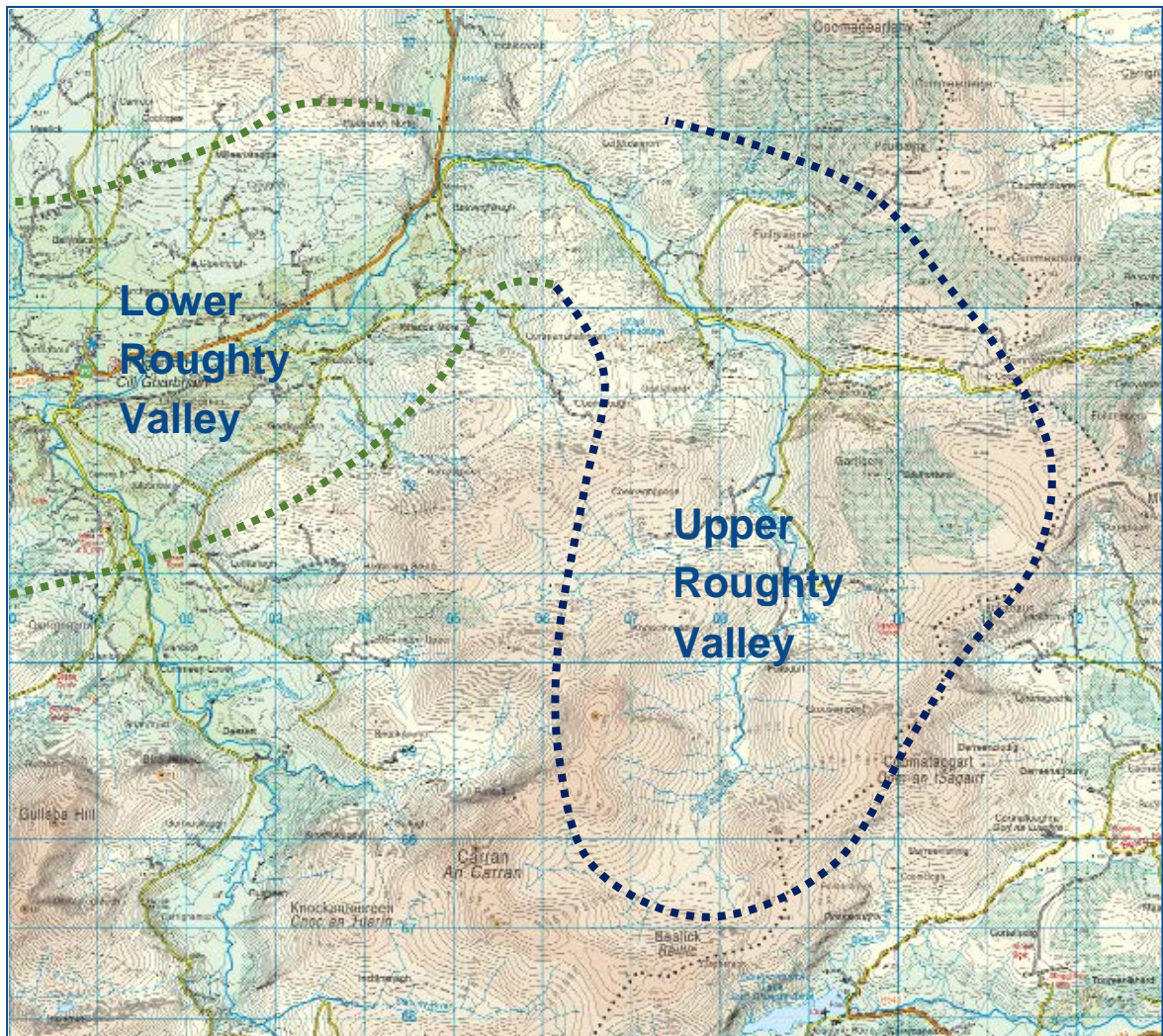


Figure 12.4: Topography of The Roughty River Valley

**Upper
Roughty
Valley**

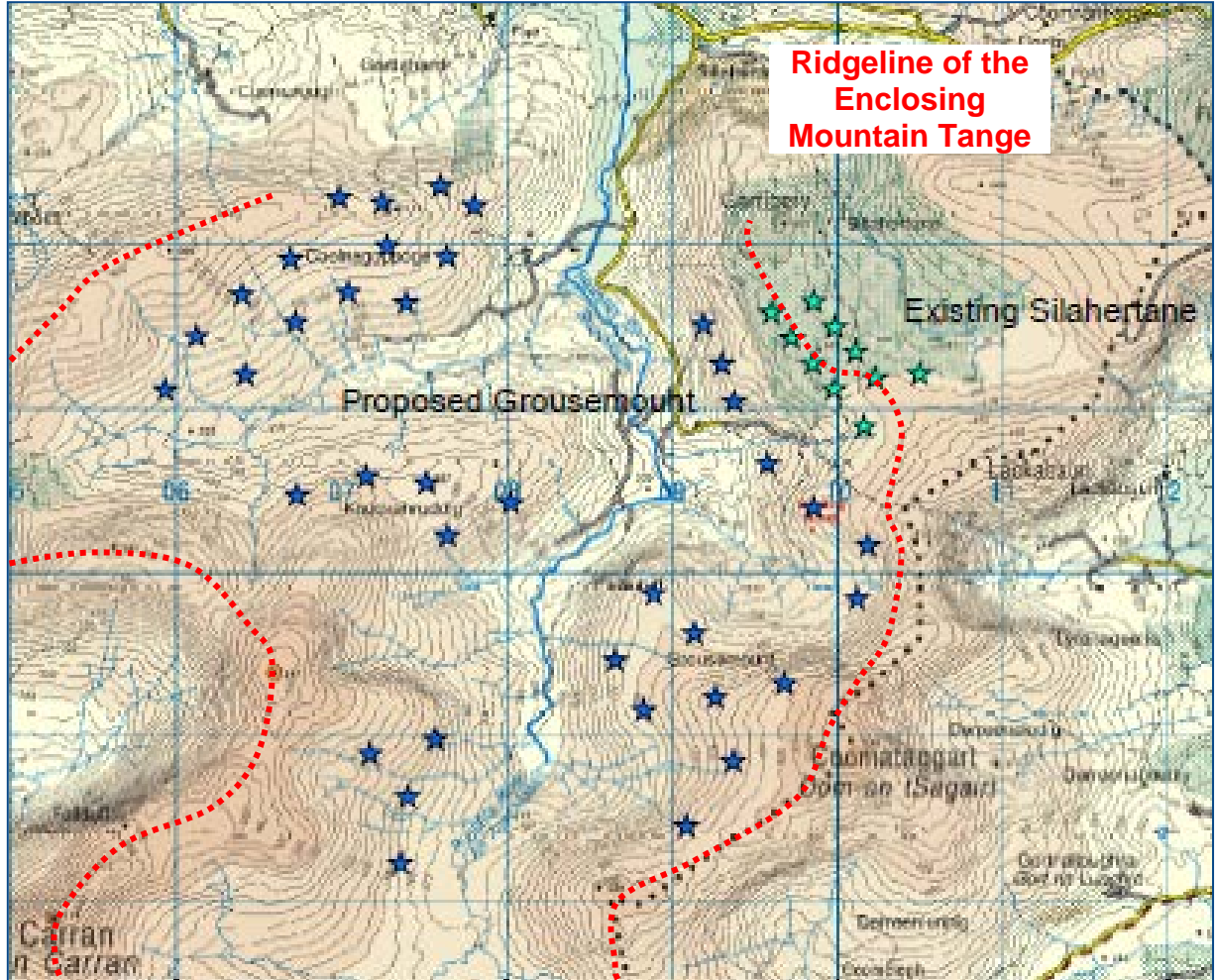


Figure 12.5: Design Response to Key Influences in the Landscape

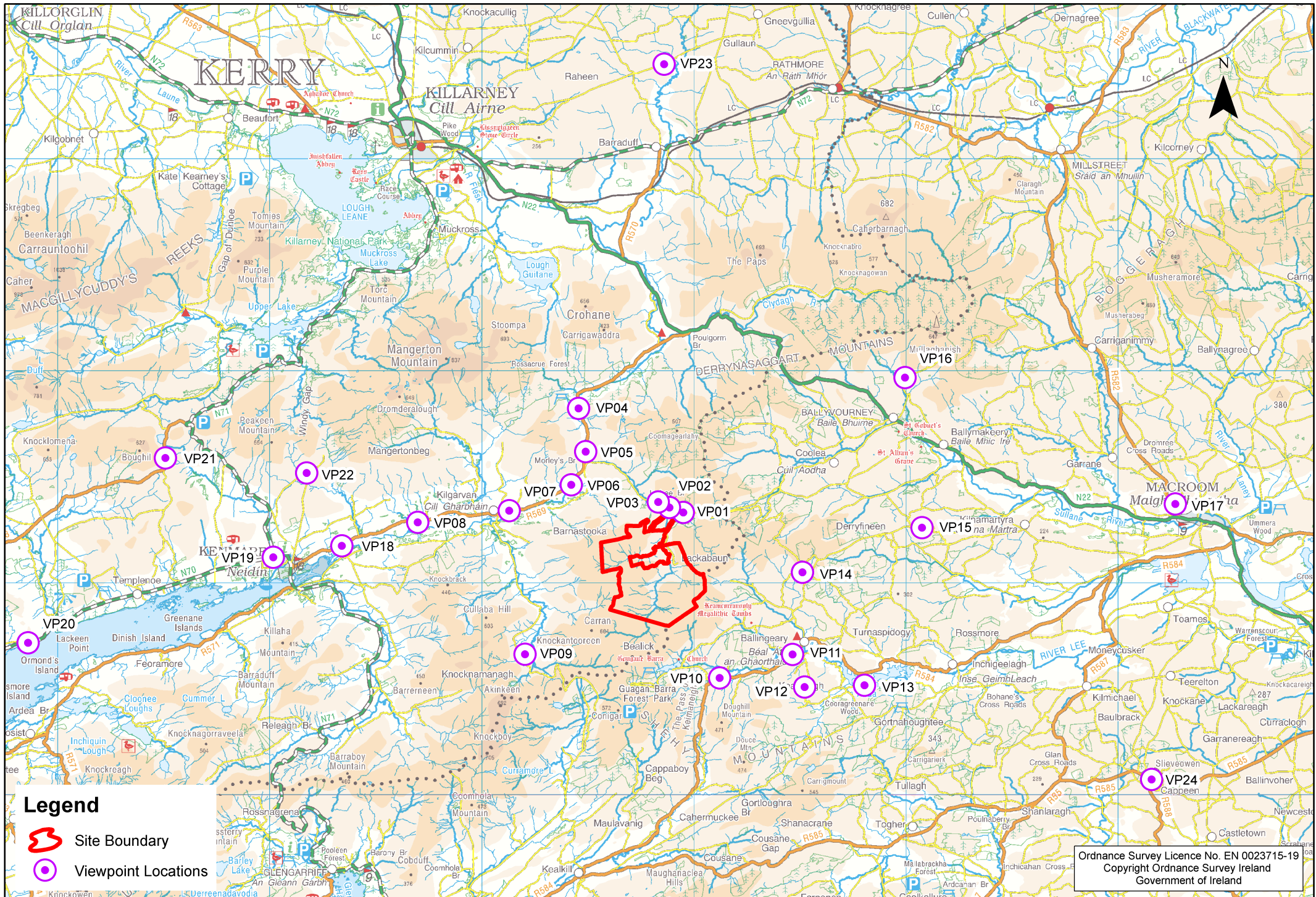


Figure 12.6 - Viewpoint Locations