



INTERNATIONAL

## Grousemount Wind Farm, County Kerry

Client: ESB Wind Development

Planning Report

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## Change History of Report

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# 1 Introduction

## 1.1 Planning Report

This planning report has been prepared to accompany an application by ESB Wind Development Limited (ESBWD) to An Bord Pleanála (ABP), for planning permission for Grousemount Wind Farm. The wind farm, which consists of 38 turbines will be located on various townlands in the Grousemount area, which is approximately 7km south-east of Kilgarvan in County Kerry. The overall area of the site is approximately 1,465 hectares (ha), but the completed development will occupy less than 3% of this.

Planning and environmental appraisals have been carried out throughout the design stage of this project. This report draws together all the relevant project reports and information, for the assistance of the Board, so that all the key information related to the project is available in this planning report.

This Planning Report (*which is section 7 of Planning Document and AA Screening Report – Planning Documents Volume 1*) comprises part of a suite of application documents, which also includes an Environmental Impact Statement (EIS) (Environmental - EIS Volumes 1 - 3). All documents should be read in order to have a full understanding of the nature, location and extent of the proposed development.

## 1.2 Details of the Applicant

The applicant for the proposal is ESBWD, which is a wholly-owned independent subsidiary company of Electricity Supply Board (ESB). It is the part of the ESB organisation that is dedicated to implementing ESB's policy in relation to developing wind energy projects.

### **History of ESB Wind Generation**

In 2014 ESB was responsible for 43% of all electricity generation and for 37% of electricity sales in the all-island market. The company has been to the fore in the development of renewable energy in Ireland and has developed all the major hydropower schemes in Ireland. In relation to wind energy, it has carried out development programmes in the 1970s, 1980s and 1990s, but it is only in the past decade that wind generating technology has matured world-wide. As a company ESB contributed €2 billion to the Irish economy in 2014 through purchases from Irish suppliers, taxes, rates, wages and dividends.

ESB is Ireland's largest generator of green electricity and the company's commercial wind portfolio has expanded to include a number of developments on its own and in partnership with others. In this context, 60 MW of renewable wind generation was commissioned in Ireland by ESB in 2006. Mountain Lodge Wind Farm in County Cavan comprising 23 turbines added a further 35 MW in 2008. A

number of developments with a combined capacity of approximately 60 MW were commissioned in 2010 and in 2011 an additional 96 MW of new wind generating capacity was added.

The company has also been developing its renewables business in Northern Ireland and Britain, where it is the owner of projects with a combined generating capacity of more than 150 MW. At 66 MW capacity, its Fullbrook Wind Farm is one of the largest onshore wind farms in England. In 2012 Carrickatane Wind Farm (21 MW) in County Derry was commissioned and erection of turbines was completed in 2013 at the 35 MW wind farm in Myndd y Betwys in Wales.

Woodhouse Wind farm in County Waterford with a rated capacity of 20 MW was completed in 2015, bringing ESB's operational wind portfolio to more than 400 MW.

Through its subsidiary companies ESB Generation & Wholesale Markets manages, trades, owns and operates ESB's portfolio of wind farms throughout Ireland and the UK. Renewables O&M is the division within ESB responsible for the operation, maintenance and general management of ESB's wind farms.

### **Future Policy in Relation to Renewable Generation**

The Board of ESB has approved a Strategic Framework to:

- Achieve carbon neutrality across all markets by 2050;
- Cut ESB's carbon intensity (-50% by 2025, -85% by 2035 vs 2005 levels); and
- Grow the % of renewables in the generating mix (from 12% to 26% by 2025).

This will see major company investment in renewable energy, the halving of its carbon emissions within 12 years and the achievement of carbon net-zero by 2050. The plan, which will establish ESB as a world class renewables company, makes emissions reduction and energy efficiency central to its ambitious targets.

By 2030, ESB will be delivering one-third of its electricity from renewable generation. This will include over 1,600 MW of wind generation, in addition to wave, tidal and biomass. To promote this, the company will invest in emerging green technologies.

The investment by ESB in its Networks will ensure continued efficient delivery of the vital infrastructure needed to support the Irish economy. It will also facilitate the development of up to 6,000 MW of wind in an all-island context.

## **1.3 Project Overview**

This application represents a revision and amalgamation of the two extant planning permissions on the site as follows:

- Kerry County Council Reg. Ref. 10/0197 granted on 25th November 2010 – 10 year permission for 14 wind turbines and associated development.
- Kerry County Council Reg. Ref. 10/1333 granted on 26th January 2012 – 10 year permission for 24 wind turbines and associated development.

Delays in securing a connection to the National Electricity Grid to export power generated at the wind farms led to these developments not being undertaken to date. These previously approved wind farm permissions are now being amalgamated and optimised. Since planning permission was granted, wind energy and construction technology has advanced significantly in terms of design and efficiency. Whilst wind turbines have increased in size in recent years, it is important to note that this application requires only a marginal increase in the overall height of permitted turbines and they sited remain at similar locations. It does however require an increase in the permitted power output for the majority of the turbines from a permitted 2 MW output per turbine to between 2.5 to 3.5 MW output per turbine.

The development proposed in the current application will optimise wind energy capture by employing the latest wind turbine technology while at the same time reducing the environmental footprint of the development.

Accordingly, the project primarily comprises development of:

- Construction of a wind farm comprising 38 no. wind turbines and all associated foundations and hard standing areas. The wind turbines will have a hub height of up to 80 metres and a rotor diameter of up to 112 metres. The overall height of the structures (i.e. tip height) will be up to 126 metres.
- All associated underground electrical and communications cabling.
- Creation of new site entrance.
- Creation of approximately 28km of internal access tracks, including a link track between the two previously consented wind farms.
- Creation of borrow pits/material repositories.
- Construction of 4 no. new free standing meteorological masts up to 80m height.
- Associated drainage systems.
- Additional associated and ancillary developments required to facilitate the delivery of wind turbine components include:
  - Delivery Route 1: Installation of a temporary bridge traversing the Sullane River in Ballyvourney village (County Cork) - the bridge requires the creation of a temporary entrance from the N22 and from the L3400 (both within Ballyvourney village) and public road improvements at identified locations along the L3400 towards the site.
  - Delivery Route 2: Creation of approximately 500 metres of access track within existing Coillte lands in the townland of Coolknoohil (County Kerry) to link existing tracks located along this delivery route along with a realignment of existing Everwind site entrance with public road L3400.

In addition to the above, the following are part of the overall project:

- Construction of Coomataggart 110 kV substation including three control buildings, outdoor electrical equipment and a foul effluent holding tank.
- Installation primarily in the public road of approximately 31 km of 110 kV underground cable including cable joint bays to form a link between ESB Networks' existing Ballyvouskill 220/110 kV substation and the permitted but as yet unbuilt Coomataggart 110 kV substation within Grousemount Wind Farm.

These parts of the overall project have been previously permitted and do not form part of the planning application to ABP, but in order to ensure that a comprehensive EIA of all aspects of the development related to the wind farm can be carried out by ABP, the EIS includes an assessment of these elements.

Figure 1.1 shows the location of the project.

Figure 1.2 shows the layout of the project.

In summary, the project comprises the amalgamation of two previously permitted wind energy projects, namely Barnastooka Wind Farm (14 wind turbines) and Grousemount Wind Farm (24 wind turbines) with an overall output of approximately 114 megawatts (MW). Overall, it comprises the same number of turbines as previously approved, all being located at equivalent locations to those approved and with a maximum overall dimensions of 126 m, also the same as (or marginally more than) approved.

The combined development will be known as Grousemount Wind Farm.

This proposal differs from the approved developments principally in terms of the electrical rating of the turbines to be installed. It also contains a number of modifications that will improve the constructability of the combined project.



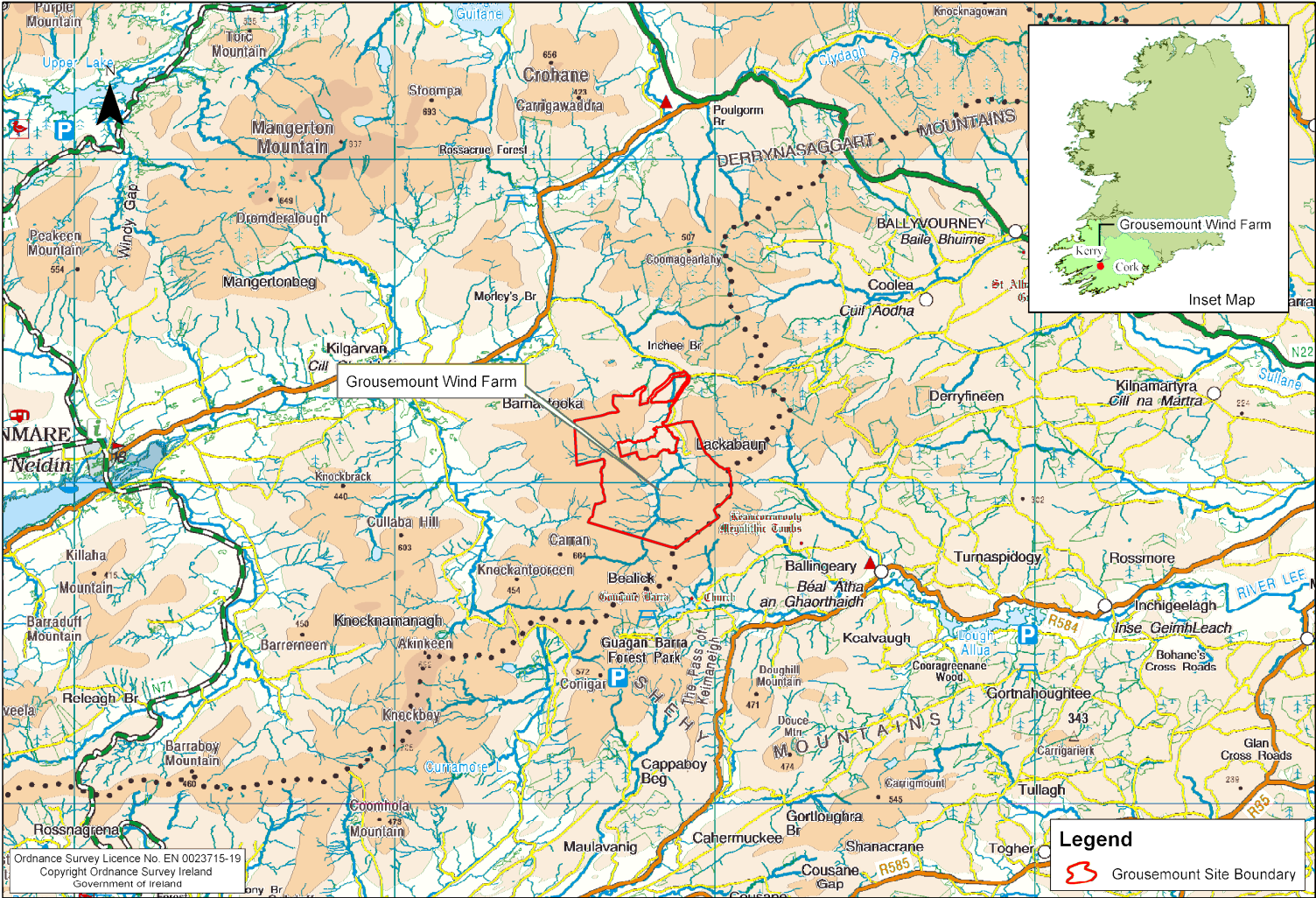


Figure 1.1: Project Location Map

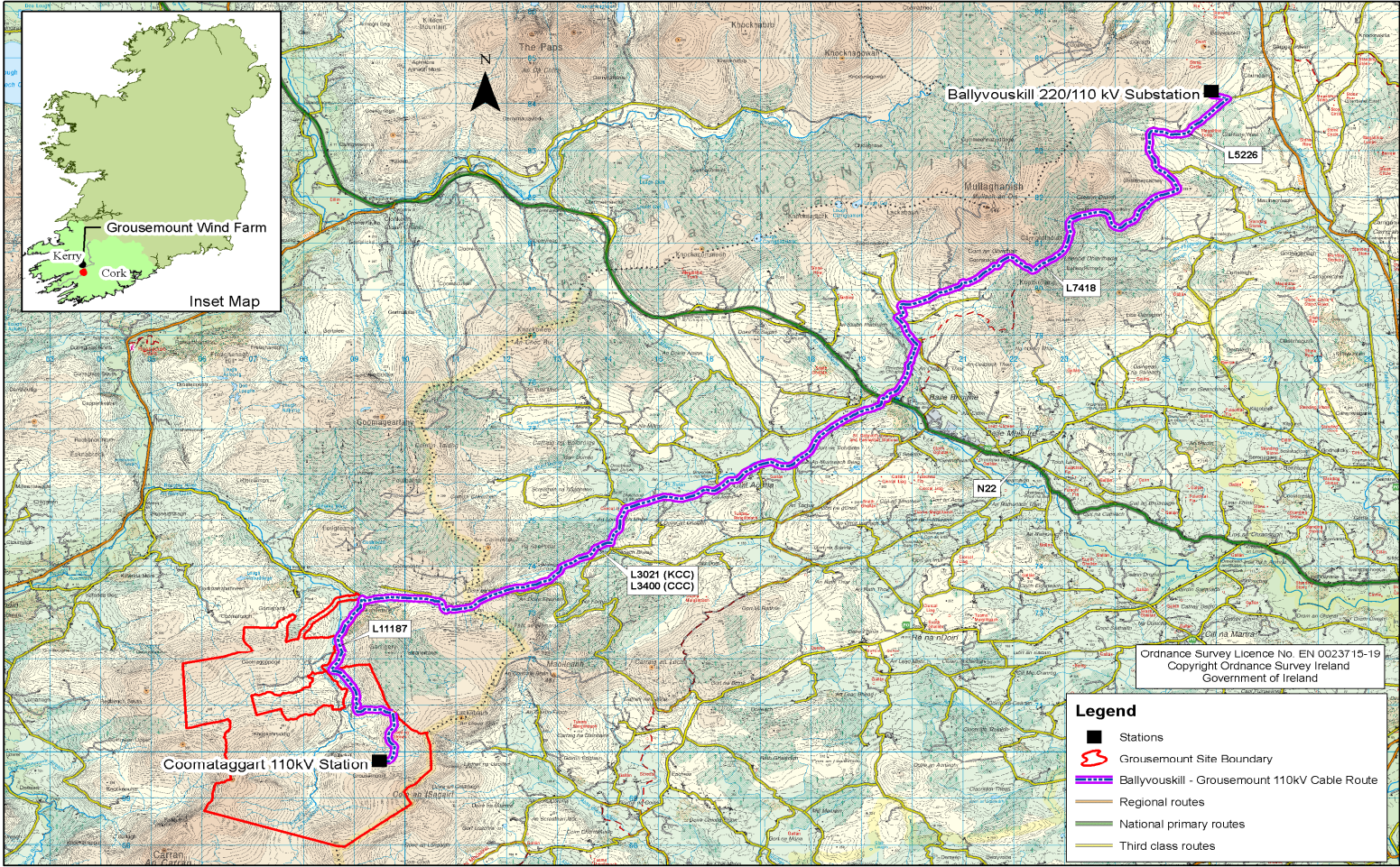


Figure 1.2: Project Layout Map

## 1.4 Purpose and Structure of this Report

The purpose of this planning report is to provide details which will assist An Bord Pleanála in determining whether the proposed development is in accordance with the proper planning and sustainable development of the area, and accordingly whether planning permission should be granted for the proposed development. This Planning Report draws on and makes references to various reports as well as considering issues raised as a result of public and stakeholder consultation.

The following sets out the structure of this planning report so that it is clear where information can be found.

- Introduction – report context, details of the applicant, project overview and purpose and structure of this report.
- Project rationale and alternatives considered.
- Project development and consultation.
- Legislative Context – Strategic Infrastructure Development (SID), Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) processes.
- Planning Policy Context – National, Regional, and Local and planning guidance documents.
- Planning History – Review of relevant planning history.
- Description of the Proposed Development – project description, comparison of extant permissions and proposed development, operation, maintenance, decommissioning, construction and mitigation measures.
- Environmental Evaluation – Evaluation of environmental impacts and consideration of mitigation measures.
- Planning Assessment – Assessment of the proposed development having regard to all national, regional and local planning policies and objectives.
- Conclusions.

## 2 Project Rationale and Alternatives Considered

### 2.1 Project Rationale

Ireland has one of the best wind resources in the world but its exploitation has lagged behind developments elsewhere in Europe.

As of July 2010, approximately 1,750 megawatts (MW) of wind energy capacity had been connected to the Grid. The Government's target for gross electricity from renewable sources is 40% by 2020. This national target is estimated to be equivalent to about 5,100 MW of installed renewable capacity, indicating that significant further development of renewables is required, with the majority of this being accounted for by wind energy.

It is clear that there is strong support at multiple levels for the development of renewable sources of energy. Renewable sources of energy, such as that from Grousemount Wind Farm will offer sustainable alternatives to our dependency on fossil fuels, a means of reducing harmful greenhouse emissions and opportunities to reduce our reliance on imported fuels. For these reasons, Irish and European policy supports the increased use of renewable energy.

A wind farm development at Grousemount has previously been determined as being viable for a variety of reasons. Amongst the factors that determine the suitability of this site are wind speed, favourable ground conditions for civil engineering construction, minimum interference with established land uses and the acceptable levels of environmental impacts.

Kerry County Council's previous grant of planning permission for wind farm development at this site has confirmed that from a planning perspective it is suitable for a wind farm development.

Furthermore, a Group Processing Approach, known as the Gate Process, has been adopted for applications by wind farm developers for connections to the National Electricity Network. Grousemount Wind Farm comprising the combined approved Barnastooka and Grousemount Wind Farms is amongst those processed as a Gate 3 application and has received grid connection offers totalling 114 MW, which is similar to the output of the proposed development.

There is therefore a strong project rationale supporting the development of Grousemount Wind Farm.

### 2.2 Alternatives Considered

In the short - medium term at least, current and future demand for electricity generation capacity in Ireland will remain predominantly supplied by fossil fuel plants. However, renewable and alternative sources of power will play an increasingly important role in meeting power needs in the future and in Ireland wind energy currently represents by far the most significant viable option for electricity generation from renewables.

The extent to which alternative sites have been examined is evident in Grousemount being one of more than 20 sites nationally for which planning applications for wind farm development were made by ESB's companies engaged in wind energy development.

As previously noted, Grousemount has been determined as being a viable site having regard to wind speed, favourable ground conditions for civil engineering construction, minimum interference with established land uses, acceptable levels of environmental impacts, as well as the extant planning permissions on this site for a almost identical wind farm.

The layout was developed taking on board the various constraints in the technical, planning, commercial and environmental aspects of the proposal, the previously approved arrangement and the extent of lands now available for development.

The proposal represents the optimal arrangement possible for a wind energy development at the site having regard to all site characteristics.

## 3 Project Development and Consultation

### 3.1 Background to the Development of the Project

Planning permission was first granted for 24 wind turbines on this site in 2004, this expired in 2009. In 2010, planning permission was granted for 14 turbines on the Barnastooka part of the site and in 2012 planning permission was granted for 24 turbines on the Grousemount part of the site. Delays in securing a connection to the National Electricity Grid to export power generated at the wind farms led to these development not being undertaken to date.

These permitted developments, comprising 28 turbines, form the planning and environmental baseline for the current application to An Bord Pleanála.

Having regard to the permitted wind farms, the development of this current application focussed primarily on optimising the location, height and constructability of these permitted turbines with a view to constructing the project in the near future.

A new Environmental Impact Statement (EIS) has been prepared to accompany the application. The information and assessment in the EIS is based on up to date information. Various new surveys and site investigations have taken place in order to ensure the EIS is as up to date as it can possibly be.

### 3.2 Consultation Process

As part of the preparation of the EIS and as required by the requirements of the Strategic Infrastructure Development (SID) process extensive consultation has taken place during the project development. This is summarised below.

#### 3.2.1 Pre Planning Consultations with An Bord Pleanála (ABP)

The first pre-application meeting took place on the 19<sup>th</sup> August 2014. At this meeting ESBWD introduced the project to ABP. On the basis of information submitted to this meeting ABP formed a preliminary view that the joint development of the two wind farms as single wind farm would constitute strategic infrastructure development.

A second meeting took place on the 1<sup>st</sup> October 2014. ESBWD indicated acceptance of the Boards provisional view and stated that they intended to go ahead with an application – it was not proposed to significantly alter the design as to that discussed at the previous meeting. ESBWD indicated that they had discussed the application with Kerry County Council and were mindful of the need to carry out public consultations in the area.

A third meeting took place on the 29<sup>th</sup> April 2015. ESBWD advised that it was their intention to lodge a formal planning application with the Board in June 2015. ESBWD informed the Board that there were on-going geotechnical and other survey works and that consultations with local residents have taken place. ESBWD

noted that Section 5 applications had already been made to both Kerry and Cork County Councils in respect of a proposed underground cable to connect the proposed wind farm to the grid.

ABP noted the following as being key issues for the EIA:

- ESBWD indicated that an NIS in addition to a full EIS will be submitted with the application. However, based on subsequent completion of the Appropriate Assessment Stage 1 Screening Report it became apparent to the Applicant that a Stage 2 NIS would not be required for the project – ABP will however make a determination in this regard.
- In the course of the three meetings, it was indicated to ESBWD that there were a number of key issues that would need to be addressed in particular detail in the application:
  - The environmental baseline for assessment should refer to the baseline conditions as outlined in the two previous applications on the site in addition to site surveys of the current environmental conditions on the site and in the local area.
  - As a recent planning appeal for a wind farm in the south Kerry area (PL08.243129) had been refused on the basis of possible impacts on the recently introduced White Tailed Sea Eagle it was noted that the EIS should address this issue.
  - ESBWD were advised that photomontages submitted should allow a determination of the potential different impacts of likely turbine designs (it was indicated that one of three designs are likely to be chosen in the final tender process).
  - The assessment of visual impacts should address views from key waymarked walks in the Killarney area, including the former Killarney to Kenmare Road, and from key public viewpoints and peaks, including Torc Mountain.
  - Notwithstanding any current Section 5 applications or planning applications to Kerry or Cork County Councils, the EIS should include a full assessment of the impacts of the electric cables and associated infrastructure connecting the proposed wind farm to the national grid.
  - The EIS should address all likely alternative haul routes for the construction works. Any physical alterations to existing non-public highway construction routes outside the application site should address geotechnical issues and the potential for bog slip.
  - Liaison with both the NPWS and Inland Fisheries Ireland is required for assessing impacts on watercourses in the area.

All the above considerations have been addressed in the EIS.

### 3.2.2 Information Day

A Public Information Day in connection with the proposal was held in Kilgarvan Community Centre, Kilgarvan on Tuesday 21<sup>st</sup> April 2015 between 3.00 pm and 7.30 pm.

The Information Day was organised to provide information about the development to the public and answer questions related to the project. The event was organised by ESBWD, whose staff were on hand to explain the project and answer questions. A number of photomontages of the wind farm were on display, together with large maps showing the site and the proposed layout, to allow the members of the public identify their own residences in relation to the wind farm.

The event was advertised by placing public notices in *The Kerryman* (15<sup>th</sup> April 2015) and *Kerry's Eye* (16<sup>th</sup> April 2015) newspapers, both of which circulate in the area. In addition, advertising posters providing notice of the event were put on display on the (external) noticeboard at the Community Centre and in Kilgarvan Post Office.

Consultation with six elected members of Kerry County Council was undertaken prior to the Information Day by way of letter, telephone call or meeting, and a summary of proposals was issued to them and to three TDs.

Approximately 40 members of the public attended the Information Day. With the exception of two people, all attendees were highly supportive of wind energy generally and none were opposed to Grousemount Wind Farm. The former had concerns in connection with visual impacts on their home, which is located south of Kenmare, approximately 20 km from the site.

Visitors to the Information Day were provided with a copy of an Information Leaflet regarding the proposed wind farm and advised that follow up meetings could take place as required.

### 3.2.3 Other Consultation

Other consultation was carried out as follows:

- A pre-planning meeting to discuss the broad outline of the project was held with Kerry County Council at its offices in October 2014.
- A pre-planning meeting to discuss the broad outline of the project, with particular focus on the delivery routes for turbines through County Cork, was held with Cork County Council at its offices in May 2015.
- Consultation with operators of mobile communications network was undertaken to determine if the proposed project had potential for interference with networks.
- Consultation took place with the Irish Aviation Authority to determine the acceptability of the proposal and establish any requirements regarding air navigation safety.
- A pre-planning enquiry for the wind farm development was issued on 28<sup>th</sup> October 2014 to the Department of Arts, Heritage and the Gaeltacht (DAU project ref. no. G Pre004412/2014). A response on ecology is yet to be received.
- A pre-planning enquiry for the underground cable was issued on 28<sup>th</sup> October 2014 to the Department of Arts, Heritage and the Gaeltacht. A response was received from the Department on 17th December 2014.



- Following on from the February 2015 sighting of the White-tailed Eagles at Grousemount, Dr Allan Mee, Project Manager of the Re-introduction Project, was contacted by Mr Joe Adamson (Biosphere Environmental Services).
- Details of the underground cable were discussed on site with Mr Michael McPartland, Environment and Fisheries Officer, Inland Fisheries Ireland (IFI), and his Environment and Fisheries Officer colleague Ms Patricia O'Connor was contacted regarding fisheries in the Roughty catchment.
- Dr Dennis Doherty, Fisheries Biologist with the ESB was consulted regarding salmon movements past the dams at Carrigadrohid and Iniscarra and the ESB's restocking programme in the River Lee and its tributaries.
- Mr Tom Sweeney, Chairman of Macroom Anglers was contacted regarding trout angling on the Sullane and its tributaries.
- As part of the enquiry to the Department of Arts, Heritage and the Gaeltacht, a reply pertaining to Archaeological Heritage subsequently received from the DAU (Ref: G Pre00412/2014), dated 13<sup>th</sup> January 2015.
- The contents of the above reply were subsequently discussed with Ms. Mairead Weaver, Archaeologist, National Monuments Service on 22<sup>nd</sup> January 2015 in which the general methodology to be employed in preparing the cultural heritage assessment was discussed and agreed.
- Further correspondence from the DAU with respect to Underwater Archaeological Requirements was subsequently issued on 20<sup>th</sup> March 2015 (Ref: Pre00011/2015).

### 3.3 Conclusion

The project development and consultation process was significantly influenced as a result of the existing planning permission for the wind farms. Given the existing planning permission, the principle of wind farm development at this location was not the focus of consultation but rather the form and layout of the development and the issues which should be considered in the EIS were the main areas of consultation.

## 4 Legislative Context

### 4.1 Strategic Infrastructure Development (SID)

The Planning and Development (Strategic Infrastructure) Act 2006 makes provision for direct planning applications to An Bord Pleanála for certain specified types of development which are considered to be of strategic importance to the State, these are set out in the 7<sup>th</sup> Schedule of the 2006 Act, as amended by the Planning and Development (Amendment) Act 2010.

Prior to submitting the planning application, pre-planning consultations took place between ESB Wind Development Limited and An Bord Pleanála in order to determine if the proposed development is considered to constitute strategic infrastructure, having regard to the relevant legislation.

Based on these consultations, An Bord Pleanála has determined (ABP Reg. Ref. PL08.PC0181 - Decision dated 25<sup>th</sup> May 2015 [www.pleanala.ie/casenum/PC0181](http://www.pleanala.ie/casenum/PC0181)) that the proposed development constitutes development which is specified in the 7<sup>th</sup> schedule of the Planning and Development Acts 2000-2010 as it comprises “*an installation for the harnessing of wind power for energy production (a wind farm) with more than 25 turbines or having a total output greater than 50 MW.*”

Furthermore, the proposed development meets with the requirements of condition (a) of Section 37(a)(2) of the Planning and Development (Strategic Infrastructure) Act 2006, as it *would be of strategic economic importance to the state, due to its scale and to its contribution to the production of electricity and to the security of supply.*

Having regard to the above determination that the proposed development constitutes strategic infrastructure development (SID), the application for permission is being made to An Bord Pleanála.

### 4.2 Environmental Impact Assessment (EIA)

#### 4.2.1 Requirements for an EIA

The requirement to carry out Environmental Impact Assessments (EIAs) arises from European Directives 85/337/EEC and 97/11/EC, which relate to the assessment of the effects of certain public and private projects on the environment.

These Directives have been transposed into Irish law through Section 176 of the Planning and Development Act 2000, as amended, and Article 93 of, and Schedule 5, of the Planning and Development Regulations 2001, as amended.

The proposed wind farm falls within Category 3(i) of the 5<sup>th</sup> Schedule Part II of the 2001 Regulations 2001 (S.I. No. 600 of 2001) “*Energy Industry – installations for the harnessing of wind power for energy production (wind farms) with more than 5 turbines or having a total output of greater than 5 megawatts.*”

Therefore, an EIA, which is written in the form of an Environmental Impact Statement (EIS), is required to accompany the planning application.

The purpose of this EIS is to provide a detailed description of the proposed development and to outline potential impacts associated with the construction and operation of the wind farm. Where potential adverse impacts have been identified, mitigation measures to address these impacts are outlined.

The EIS has been prepared in accordance with the Environmental Protection Agency (EPA) “*Guidelines on the Information to be Contained in Environmental Impact Statements (2002)*” and “*Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (2003)*”.

Having regard to recent developments in this area and in particular the implications for EIA arising from the “O’Grianna” court case, this EIS considers and assesses all aspects of the proposed development, including the connection to the national electricity grid and transport routes for construction and turbine delivery.

The proposed connection to the national grid will take place by way of a 110 kV underground cable (UGC) to be installed primarily in public roads. Confirmation that the proposed UGC constitutes exempted development under section 5 of the Planning and Development Act 2000, as amended, was received from Kerry County Council in April 2015 and Cork County Council in May 2015 – see Appendix B in Volume 2 of 3 of the EIS. Given the exempted development confirmation for the UGC, this application to ABP does not seek permission for the UGC but in order to ensure that a comprehensive EIA of all aspects of the development related to the wind farm can be carried out by ABP, the EIS includes an assessment of the connection to the national electricity grid and transport routes for construction and turbine delivery.

### 4.3 Appropriate Assessment (AA) Screening

Appropriate Assessment (AA) is a focused and detailed impact assessment of the implications of the proposed development, alone and in combination with other plans and projects, on the integrity of a Natura 2000 site in view of its conservation objectives.

A Natura 2000 site is either a Special Area of Conservation (SAC), a candidate Special Area of Conservation (cSAC), Special Protection Area (SPA) or a candidate Special Protection Area (cSPA).

An Bord Pleanála, as the competent and consenting authority, must carry out Stage 1 AA screening in the first instance and a subsequent AA, if it deems it to be necessary. The Applicant has prepared a report to assist the Board in carrying out, this report is referred to as the Appropriate Assessment Screening Report.

The AA screening report carried out by the Applicant concluded the following:

*Appropriate Assessment screening has been undertaken on the proposed Grousemount Wind Farm development, which includes a 110 kV Underground Cable Circuit between the existing Ballyvouskill substation in County Cork and the permitted but as yet unbuilt Coomataggart 110 kV substation in County Kerry.*

*The potential effects that may arise from construction and operation of the development on the Natura 2000 network have been examined by considering the potential for significant effects, alone or in-combination with other projects, on eleven designated European sites that occur in the surroundings.*

*On the basis of the findings of this Screening for Appropriate Assessment, it is concluded that the project:*

- (i) is not directly connected with or necessary to the management of a Natura 2000 site, and*
- (ii) significant impacts on the Natura 2000 network are not foreseen.*

*Therefore, in accordance with Article 6(3) of the Habitats Directive, it is considered that a Stage 2 Appropriate Assessment is not required.*

Accordingly, it is the Applicants view that Stage 2 AA is not required.

The Stage 1 AA Screening can be found in **the Planning Documents - Planning Documents and AA Screening Report – Volume 1.**

## 5 Planning Policy Context

### 5.1 Introduction

Renewable wind energy has developed in response to European Union policies and Directives and the road map set out by the EU towards achieving targeted reductions in greenhouse gas emissions. The EU requirements have in turn been integrated into national policy with clear targets set for the energy sector as to the level of penetration of renewable energy into the overall energy mix for the country to be achieved by 2020. Wind energy is recognised nationally as the option most likely to contribute maximally towards achieving these targets, which are essential to meet the requirements of Ireland's national climate change strategy. The Grousemount development is fully in line with national, regional and county development policies and guidelines.

When operational, the development, will contribute significantly to a reduction in Ireland's greenhouse gas emissions.

### 5.2 Energy Policy – European Context

#### 5.2.1 White Paper on Renewables

Development of renewable energy has been a central aim of EU energy policy for some time and, as a first step towards a strategy for renewables, the EU adopted a Green Paper in November 1996 that sought views on setting an indicative objective of 12% for the contribution by renewable sources of energy to overall energy consumption by 2010.

This target was then established in 1997 in the EU Commission's Energy for the Future: Renewable Sources of Energy - White Paper for a Community Strategy and Action Plan. The purpose of the White Paper was to contribute, by promoting renewable energy, to the achievement of overall energy policy objectives: security of supply, environment and competitiveness, and to improve and reinforce environmental protection and sustainable development.

The overall EU target of doubling the share of renewables by 2010 implied that Member States had to encourage the increase in renewable energy sources according to their own potential. The setting of targets was recognised as providing a stimulus to efforts towards increased exploitation of available potential and an important instrument for attaining reductions in carbon dioxide (CO<sub>2</sub>) emissions, decreasing energy dependence, developing national industry and creating jobs.

#### 5.2.2 Green Paper on Security of Supply

Amongst the tools supporting the EU strategy and instruments for promoting renewable energy sources was its Green Paper on the security of energy supply from November 2000. EU resources are limited with respect to reserves of oil and

gas and costs of coal production are a multiple of the world market price. Correspondingly, there is a potential abundance of renewables.

The aim was to put forward proactive strategies to attenuate, if not counteract, the dependence on energy supplies. Future priorities include managing the dependence on supply by development of less polluting energy sources.

New and renewable forms of energy are the first options for action in relation to security of supply, the environment and local populations.

### 5.2.3 Renewable Energy Directives 2001 & 2009

The EU Renewables Directive 2001/77/EC was the first time a legislative text aimed at promoting the production of energy from renewable sources. It obliged Member States to set indicative targets and committed Ireland to the production of 13.2% of electricity demand from renewable energy sources by 2010. Based on this target, the Irish Government introduced a range of measures to increase the deployment of renewables electricity.

Outlining a long-term strategy the EU Commission's Renewable Energy Roadmap called for a mandatory target of a 20% share of renewable energies in the EU's energy mix by 2020. The target was endorsed by EU leaders in March 2007.

The Commission's Energy 2020 Strategy highlights how EU infrastructure and innovation policies are supporting the renewable energy sector's development, ensuring that renewable energy sources and technologies become economically competitive as soon as possible, thus supporting the growth of renewable energy to achieve our goals.

The EU Renewables Directive 2009/28/EC, which amended and subsequently repealed Directives 2001/77/EC and 2003/30/E, requires each Member State to increase its share of renewable energies - such as solar, wind or hydro - in the bloc's energy mix to raise the overall share to 20% by 2020. To achieve the objective, every nation in the 27-member bloc is required to increase its share of renewables by 5.5% from 2005 levels, with the remaining increase calculated on the basis of per capita gross domestic product (GDP).

Ireland's share of renewables is required to increase to 16% by 2020. The Directive set a series of interim targets, known as 'indicative trajectories', in order to ensure steady progress towards the 2020 targets. Each Member State has flexibility to set targets across the heating, transportation and electricity sectors to meet the overall renewable energy targets, subject to a minimum of 10% of energy use in transport being renewable sourced by 2020.

The Renewable Energy Directive provides a strong and stable regulatory framework for the development of the renewable energy sector in Europe.

### 5.2.4 European Commission Energy Roadmap 2050

In December 2011, the European Commission adopted the Energy Roadmap 2050, which commits the EU to reducing greenhouse gas emissions to 80-95% below 1990 levels by 2050 in the context of necessary reductions by developed countries as a group. This implies that Europe's energy production will have to be almost carbon-free in order to reach the Commission's latest target over the period to 2050.

Existing EU policies and measures to achieve the Energy 2020 goals are ambitious and will continue to deliver beyond 2020. However, they will achieve only less than half of the decarbonisation goal set for 2050.

The Energy Roadmap 2050 examines seven scenarios, two "Current Trend" and five "Decarbonisation" that could reduce emissions while ensuring that each country retains its security of supply and competitiveness.

The high renewable energy sources decarbonisation scenario would see renewable energy systems with a 75% share of final energy consumption by 2050 and 97% of electricity consumption indicative that renewable energy will be central to energy policy going forward.

### 5.2.5 Climate Change

Tackling climate change is a key element of the European Commissions energy road map going forward to 2050. Climate change is now an accepted fact and is evidenced by increasing temperature, changing weather patterns, glacial melting rates and sea level rise. Monitoring has shown that the atmospheric concentration of greenhouse gases, including CO<sub>2</sub>, is increasing concerns regarding the effect these may have on the earth's climate as a result of an enhanced greenhouse effect. Despite limited remaining uncertainties, scientists internationally are of the view that the balance of evidence suggests there is a discernible human influence on the global climate as a result of the build-up of CO<sub>2</sub> and other greenhouse gases in the atmosphere.

In response to international concerns, under the UN Framework Convention on Climate Change (UNFCCC), industrialised countries were to stabilise their greenhouse gas emissions at 1990 levels by the year 2000. The EU met this commitment. The Kyoto Protocol to the UNFCCC committed the 15 countries that were EU members at the time to reduce their collective emissions in the 2008-2012 period to 8% below 1990 levels.

The level of the EU 27's greenhouse gas emissions has fallen by 15 % from 5,590 Mt in 1990 to 4,720 Mt in 2010.

The EU has also offered to increase its emissions reduction to 30% by 2020, on condition that other major emitting countries in the developed and developing worlds commit to do their fair share under a future global climate agreement. The Copenhagen Accord reached in December 2009 represents a step towards such an

agreement. The EU is pressing for a global deal that is ambitious, comprehensive and legally binding.

Achieving the targets aspired to in the 2050 Roadmap would reduce the emission of greenhouse gases by 80 – 95% by mid century.

In the National context the Environmental Protection Agency also highlights its concerns around climate change;

*What is distinctive about the current period of global warming, compared to previous cycles of climate change, is the extent and rate of change, which exceeds natural variation. The impacts of climate change present very serious global risks and threaten the basic components of life, including health, access to water, food production and the use of land. As the earth gets warmer the damage from climate change will accelerate.*

In its report The EPA & Climate Change the EPA also indicates that:

*Whilst Ireland can be justifiably proud of our scientific and technological achievements, Ireland's greenhouse gas emissions per person are amongst the highest on the planet and the 2nd highest of the EU 27 countries. The reduction in greenhouse gas emissions in Ireland and other parts of the globe which is primarily due to the global financial crisis has shown that there is still a strong link between economic growth and emissions.*

The report identifies Agriculture (at 29.2%) as the largest sector in the economy contributing to greenhouse gas emissions with the energy sector being the next most significant at 21%. The EPA foresees that Ireland will face a significant challenge in achieving its targets under the 2020 obligations should increases in agricultural and transport emissions occur.

The National Climate Change Strategy 2007 – 2012 also forecast's annual emissions savings of CO<sub>2</sub> will be achieved on foot of the Government's targets being achieved, see Section 5.3.4 below.

## 5.2.6 Summary

The development of renewable energy, particularly energy from wind, water, solar power and biomass, is a central aim of the European Commission's energy policy. There are several reasons for this:

- Renewable energy has an important role to play in reducing CO<sub>2</sub> emissions, which is a major Community objective.
- Increasing the share of renewable energy in the energy balance enhances sustainability. It also helps to improve the security of energy supply by reducing the Community's growing dependence on imported energy sources.
- Renewable energy sources are expected to be economically competitive with conventional energy sources in the medium to long term.

It is evident that this proposed wind farm development at Grousemount is strongly supported by policy at European level.



## 5.3 Energy Policy – National Context

### 5.3.1 Introduction

It is Government Policy to promote the development of renewable energy sources. Sustainable energy policy includes maximising the efficiency of generation and emphasising the use of renewable resources.

Ireland's Green Paper on Sustainable Energy was launched in September 1999, the policy indicating how Ireland will progress towards meeting its energy requirements in an environmentally and economically sustainable way. It concentrated on Ireland's need to limit energy-related carbon dioxide (CO<sub>2</sub>) emissions under the Kyoto Protocol. An additional major justification of this strategy on renewable energy is to reduce Irish dependence on imported fuels for the purpose of security of supply.

The Renewable Energy Strategy Group was formed in November 1999 on foot of the Green Paper. In its report Strategy for Intensifying Wind Energy Development the Group outlined a strategy of promoting large-scale wind energy projects to achieve efficient deployment of wind energy.

In the National Spatial Strategy 2002 – 2020 (which is due to be reviewed in the near future), it is stated as follows:

*..in economic development the environment provides a resource base that supports a wide range of activities that include agriculture, forestry, fishing, aqua-culture, mineral use, energy use, industry, services and tourism. For these activities, the aim should be to ensure that the resources are used in sustainable ways that put as much emphasis as possible on their renewability.*

### 5.3.2 Renewable Energy Development – 2006

The Department for Communications, Marine and Natural Resources holds responsibility for renewable energy policy in Ireland. The Renewable Energy Development Group, established in May 2004 considered the future options to develop increased use of renewable energy in the electricity market to 2010 and beyond. Its Renewable Energy Development 2006 presented an overview of policy and strategy evolution, stating as follows:

*Renewable energy deployment fits with a range of policy imperatives across many areas. It has clear environmental benefits and helps meet our international environmental commitments. It reduces reliance on imported fuels, reducing dependence and bringing associated economic benefits.*

A conclusion was as follows:

*A sustainable energy economy depends on both efficiency in the supply and consumption of energy and in the substantial deployment of renewable sources.*

### 5.3.3 Energy White Paper – 2007

The Government launched its Energy White Paper in March 2007. The White Paper describes the actions and targets for the energy policy framework out to 2020, to support economic growth and meet the needs of all consumers. It is set firmly in the global and European context which has put energy security and climate change among the most urgent international challenges.

Sustainability is at the heart of Government's energy policy objectives. The Paper outlines that the challenge of creating a sustainable energy future for Ireland will be met through a range of strategies, targets and actions to deliver environmentally sustainable energy supply and use. The underpinning Strategic Goals include accelerating the growth of renewable energy sources with key targets as follows:

Year	Criterion	Target
2010	Gross electricity consumption from renewable sources	15 %
2020	Gross electricity consumption from renewable sources	40 %

The latter target for consumption coming from renewables by 2020 was revised upwards in October 2008 from 33%.

### 5.3.4 National Renewable Energy Action Plan 2010

The 2010 Plan implements EU Directive 2009/28/EC on the promotion of the use of energy from renewable sources, which sets out agreed new climate and energy targets: 20-20-20 by 2020 - 20% reduction in greenhouse gas emissions, 20% energy efficiency and 20% of the EU's energy consumption to be from renewable sources. The Plan has set a target of 40% electricity consumption from renewable sources by 2020.

The Government's 40% renewable penetration target for 2020 is estimated to be equivalent to about 5,100 MW of installed renewable capacity. At the end of December 2014, Ireland's installed capacity was approximately 2,494 MW, comprising 2,211 MW of installed wind generation, 237 MW of hydro power and 46 MW of smaller renewable sources. This indicates that significant further development is required.

The Government is evidently committed to delivering a significant growth in renewable energy as a contribution to fuel diversity in power generation. Wind energy will provide the pivotal contribution to achieving this target.

### 5.3.5 Strategy For Renewable Energy, 2012 – 2020

In May 2012 the Department of Communications, Energy and Natural Resources published the Government's Strategy for Renewable Energy, 2012 – 2020.

The Strategy notes as follows:

*The Government firmly believes that the development and deployment of Ireland's abundant indigenous renewable energy resources, both onshore and offshore,*

*clearly stands on its own merits in terms of the contribution to the economy, to the growth and jobs agenda, to environmental sustainability and to diversity of energy supply. In addition, and in support of the Government's own energy policy objectives, Ireland is committed to delivering on its obligations under European Union Energy Policy which include the binding national target for renewable energy by 2020.*

This document sets out five strategic goals, the first of which is as follows:

**Strategic Goal 1: Progressively more renewable electricity from onshore and offshore wind power for the domestic and export markets.**

The Strategy explains as follows:

*Further strategic deployment of onshore wind projects will develop a base of indigenous and foreign companies and create employment in the short-term in wind farm construction, possible turbine component manufacturing and servicing, the opportunity to capture international supply chain opportunities and the manufacture of niche onshore renewable energy generating equipment. In addition to exporting electricity from renewables to the UK and continental Europe, Ireland has the opportunity to become a recognised world leader in the testing of next generation offshore renewable energy equipment.*

## 5.4 Regional Planning Guidelines

The Regional Planning Guidelines for the South West Region, 2010 - 2022 acknowledge that the south west has considerable potential for the generation of electricity from sustainable renewable resources such as wind and wave.

The objectives (RTS-09) for the South West Region relating to Energy and Renewable Energy are described below:

- *It is an objective to facilitate the sustainable development of additional electricity generation capacity throughout the region and to support the sustainable expansion of the network. National grid expansion is important in terms of ensuring adequacy of regional connectivity as well as facilitating the development and connectivity of sustainable renewable energy resources.*
- *It is an objective to ensure that future strategies and plans for the promotion of renewable energy development and associated infrastructure development in the Region will promote the development of renewable energy resources in a sustainable manner. In particular, development of wind farms shall be subject to:*
  - *the Wind Energy Planning Guidelines*
  - *consistency with proper planning and sustainable development*
  - *criteria such as design and landscape planning, natural heritage, environmental and amenity considerations,*
- *It is an objective of the guidelines to promote the sustainable provision of renewable energy from tidal, wave and pumped storage developments together with bioenergy resources, as critical elements of the long-term secure energy supply throughout the region.*

## 5.5 Planning Policy – Kerry County Development Plan

The Kerry County Development Plan 2015 – 2021, which is effective since March 2015, is the framework document for guiding and controlling future developments in the county.

Objectives for Renewable Energy are as follows:

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

*Objective EP-12            Not to permit the development of windfarms in areas designated “open to consideration” in the Tralee and Listowel Municipal Districts until 80% of the turbines with permissions in those areas, on the date of adoption of the Plan, have either been erected or the relevant permission has expired or a combination of both and the cumulative affect of all permitted turbines in the vicinity of the proposal has been fully assessed and monitored.*

The proposal for Grousemount Wind Farm is fully in compliance with the above objectives, as it implements the objectives of the renewable energy strategy and it lies in the South and West municipal District, which is unaffected by objective EP-12 above.

### **Renewable Energy Strategy**

To facilitate the sustainable growth of renewable energies Kerry County Council prepared and adopted a Renewable Energy Strategy in November 2012.

The previous strategy had been in place from 2003 to 2012 as adopted in the Kerry County Development Plans 2003-2009 and 2009-2015. That strategy had been successful in facilitating renewable energy development, particularly wind, in a manner that was consistent with the proper planning and sustainable development of the county. However, it was considered that, given the significant changes in renewable energy technologies and in public policy, new policy responses were required to facilitate and manage the development of renewable energy.

With regard to Wind Energy, the Plan states as follows:

- *It is recognised that wind energy is best placed to achieve national targets for the consumption of electricity from renewable energy and it is an objective of the planning authority to continue to support the development of wind energy. To this end this strategy identifies appropriate locations for the development of wind energy and sets out the criteria and development management standards which will be used in assessing proposals for wind development.*

The planning authority recognises that of the many types of renewable energy onshore wind development is best placed to deliver significant levels of renewably sourced electricity in the short to medium term. This Strategy has been developed to build on the success of the County’s current strategy and to more closely align the County’s wind generation policies to existing wind energy and infrastructural resources. It is an objective of this strategy to achieve the following:

- *To secure the maximum potential for the generation of electricity at appropriate locations from wind energy resources that is consistent with proper planning and sustainable development of the county.*
- *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.*

Having assessed various environmental, landscape, technical and economic criteria, three types of wind deployment zones have been identified – **see Figure 5.1**, namely; Strategic Site Search Areas, Open-to-Consideration and Unsuitable.

The Grousemount site lies with the area categorised as Open-to-Consideration, which is described as follows:

*Site searches within these areas will identify sites with wind energy capacity and the environmental and infrastructural capacity to support wind development. They differ from Strategic Areas in that there are fewer suitable sites. It is recommended that during the site search process, developers consult with the planning authority. Again the capacity of these areas has limits and the cumulative impact of wind development in these areas will be monitored.*

The Strategic Objectives for the Open-to-Consideration area are as follows:

**Objective**

*WE 6 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.*

**Objective**

*WE 7 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. Any proposed development of on-shore wind adjacent to Natura 2000 sites will have to ensure a suitable buffer zone exists between the development and the Natura 2000 boundary. The Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (Site Code 004161) will require a buffer zone of at least 250 m between the SPA boundary and operating wind turbines.*

**Objective**

*WE 8 Applications shall be accompanied by a Natura Impact Statement under Article 6 of the Habitats Directive if the site is located in close proximity to a (candidate) Special Area of Conservation or Special Protection Area or if the site is within the catchment of a (candidate) Special Area of Conservation. Only proposals where a Habitats Directive Article 6 Assessment concludes that there will be no adverse effects on the integrity of Natura 2000 sites shall be permitted.*

**Objective**

*WE 9 All applications must comply with the objectives and development standards of this strategy and the provisions of the Kerry county Development Plan 2009-2015. This*

*will include requirements and considerations in relation to: landscape; cultural heritage; Natura 2000 sites and the Habitats & Birds Directive; the objectives of the Water Framework Directive; Flood Directive; electricity infrastructure; settlement patterns; and wind energy potential.*

**Objective**

*WE 10 Applications for wind development shall be accompanied by a technical assessment in relation to the slope stability, landslide susceptibility of the development site and the proposed project. This assessment shall incorporate slope stability mapping and groundcover assessment in the context of potential cumulative effects arising from multiple developments and consider potential impacts on slope stability in relation to climate change impacts, particularly flash floods and changing weather conditions.*

**The proposal for Grousemount Wind Farm is fully in compliance with the above Objectives.**

The Council's development management policies and standards relating to the design, layout and ancillary development of wind farms are also outlined in the Renewable Energy Strategy 2012.

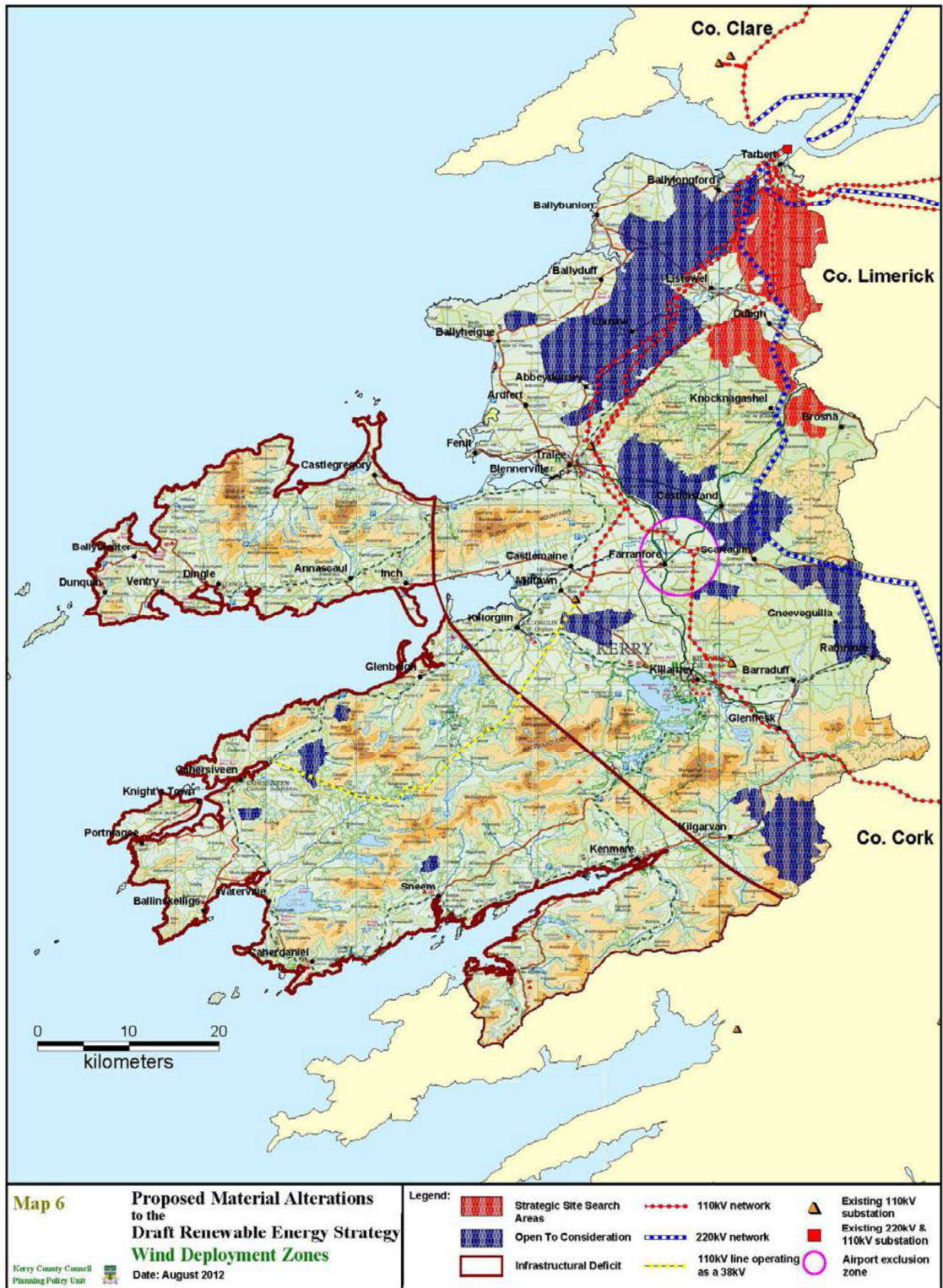


Figure 5.1: Wind Development Zones (Source: KCC Renewable Energy Strategy 2012)

## 5.6 Conclusions

Ireland, like many modern economies, is facing a wide range of challenges in energy policy due to a number of factors, including: rising prices of primary inputs (especially fossil fuels), energy and fuel price risk and volatility, energy supply security, greenhouse gas emissions, non-greenhouse gas emissions, rising demand, the requirement to invest / replace grid and infrastructure, and the creation of energy market competition and a single EU market. With these challenges to the fore, renewables policy is also an important issue for Ireland.

Within the portfolio of possible renewables, onshore wind power presents a potential means for Ireland to increase the amount of electricity that is produced by emission-free power generation capacity. Its potential contribution to achieving Ireland's stated renewable energy target for 2020 is set out in Ireland's Renewable Energy Action Plan, with binding targets committed to under the promotion of the renewable energy directive.

Ireland has an abundant wind energy resource and it is clear that there is strong support at multiple levels for the development of renewable sources of energy, such as will result from Grousemount Wind Farm.

Over the past decade, energy and environment policies have been adopted and realigned to reflect new concerns at national and international levels, to address the new realities in these areas and provide a focus for future actions. These are also reflected in the National Renewable Energy Strategy, the Regional Planning Guidelines and the policies of Kerry County Council.

The development of the Grousemount Wind Farm (combining the previously approved Barnastooka and Grousemount Wind Farms) will contribute significantly to meeting the commitments of the Government's National Renewable Energy Plan (NREAP) obligation under the renewable energy Directive 2009/28/EC. It is fully in line with the Regional Planning Guidelines and Kerry County Council's energy and renewable energy policies and objectives set out in the current County Development Plan, and is located within an area Open to Consideration for wind development as designated by Renewable Energy Strategy. The development will also contribute significantly to national greenhouse gas emission reduction and will contribute towards achieving Ireland's national target of renewable electricity generation.



## 6 Planning History

### 6.1 Introduction

As previously indicated, there is a planning history on this site going back over many years supporting the development of wind energy. Significantly, there are two extant planning permissions for the development of 24 turbines and associated developments and again as previously indicated this application represents a revision and amalgamation of the two extant planning permissions on the site.

### 6.2 Historic and Current Approvals

Historic and current approved developments are detailed below with the various latter consents presented in **Appendix B in Volume 2 of the EIS**.

#### **Ref. No. 03/3524**

An application for Planning Permission (Ref. No. 3524/03) was made in November 2003 in respect of a wind farm development comprising 28 wind turbines at Grousemount. Planning Permission was granted by Kerry County Council in August 2004, subject to a schedule of 20 Conditions.

Condition No. 1 provided that the permitted scheme should comprise 24 turbines.

#### **Ref. 10/0197**

An application for Planning Permission (Ref. 10/0197) was made in March 2010 in respect of a wind farm development comprising 14 wind turbines at Barnastooka. Following submission of additional information in July 2010, Kerry County Council's decision to grant permission subject to a schedule of 14 conditions was appealed to An Bord Pleanála (Ref. PL 08.237551).

The appeal was subsequently withdrawn and planning permission was granted in November 2010.

#### **Ref. 10/1333**

An application for Planning Permission (Ref. 10/1333) was made in December 2010 in respect of a wind farm development comprising 24 wind turbines at Grousemount. Following submission of additional information in November 2011, planning permission was granted by Kerry County Council in January 2012, subject to a schedule of 21 Conditions.

#### **Ref. 14/412**

An application for Planning Permission (Ref. 14/412) was made in July 2014 in respect of temporary guyed anemometer masts at Barnastooka. Planning Permission was granted by Kerry County Council in August 2014, subject to a schedule of four Conditions.

**Ref. 15/262**

An application for Planning Permission (Ref. 15/262) was made in April 2015 in respect of an amendment to the Substation at Grousemount permitted under planning Ref. 10/1333. Planning Permission was granted by Kerry County Council in August 2015, subject to a schedule of seven Conditions.

**Ref. 15/327**

An application for Planning Permission (Ref. 15/327) was made in April 2015 in respect of a site entrance from the L3021 third class road and up to three borrow pits / repositories at Barnastooka. In June 2015 Kerry County Council sought additional information, submission of which remains outstanding, it is intended to submit this information during September 2015.

## 6.3 Grid Connection

**Ref. EX392 – Kerry County Council**

An application (Ref. EX392) for a declaration on exempted development in accordance with Section 5 of the Planning & Development Act 2000, as amended, was submitted to Kerry County Council in March 2015 regarding the portion in Co. Kerry of the underground cable connection from ESB Networks' Ballyvouskill Substation to Coomataggart Substation.

Kerry County Council declared in April 2015 that the works constituted exempted development.

**Ref. D215.15 – Cork County Council**

An application (Ref. D215.15) for a declaration on exempted development in accordance with Section 5 of the Planning & Development Act 2000, as amended, was submitted to Cork County Council in March 2015 regarding the portion in Co. Cork of the underground cable connection from ESB Networks' Ballyvouskill Substation to Coomataggart Substation.

Cork County Council declared in May 2015 that the works constituted exempted development.

## 7 Description of Proposed Development

### 7.1 Project Description

The main components of the development are the wind turbines, delivery routes and entrances from the public roads into the site. Other ancillary and associated developments include; access tracks, borrow pits/repositories, crane pads, anemometer masts, signage, the 110 kV substation containing electrical control buildings and an underground cable connection to the national electricity network. These have all been previously detailed in section 1.3 of this report and are described in detail in **Volume 1 Chapter 2 of the EIS**. The main components are summarised in this section.

The development will generate electricity by harnessing the wind and will supply the power to the national electricity network. Each wind turbine will have a rated electricity generating capacity of up to approximately 3,300 kW. It is anticipated that the project will generate about 350,000,000 kWh (units) of electricity per annum.

The capital costs for installation of the proposed wind farm are projected to be in the order of up to €180 M.

In total, the development area at the wind farm extends to approximately 1,465 ha, but the completed development will occupy less than 3% of these lands. The remaining areas will continue under the control of the current landowners. Existing land uses outside of the area occupied by the development will not be affected and the proposal will not compromise possible future alternative use of these lands.

#### 7.1.1 Wind Turbines

The turbines will have a maximum overall dimension of 126 m, although the overall dimensions of the selected turbines may be lower than this.

The overall maximum dimension is equivalent to the permitted maximum dimension of the turbines in the approved Barnastooka (125 m) and Grousemount Wind Farms (126 m).

Specifying a maximum overall dimension rather than specific dimensions for the two components allows for greater flexibility in choice of turbines by the inclusion of a larger number of candidate turbine models. However, turbines will likely comprise a tower height in the range 70 – 85 m and three blades, each with a blade rotor diameter in the range of up to 82 – 112 m, i.e. turbines may be configured as comprising a 70 m tower with 56 m long blades or an 85 m tower with 41 m long blades.

The wind turbines will be selected from a range of models that have been demonstrated successfully throughout Europe and certified to the highest international standard. In accordance with EU procurement rules for utilities, to which ESB and its subsidiary companies are subject, the contract to supply and construct the wind farm will be open to international competition. For this reason it

is not possible to specify the exact turbine which will be deployed at Grousemount but it will be within the range indicated.

While the choice of make and model has not yet been finalised, the wind turbines under consideration for installation are three bladed, horizontal axis machines. There are a number of candidate machines. Modern wind turbines from the main turbine manufacturers have evolved to share a common appearance and other major characteristics. Only minor cosmetic features differentiate one from another.

### 7.1.2 Wind Turbine Delivery

It will be a matter for the chosen turbine supplier to determine the most suitable route for delivery of wind turbine components to the site. While definitive details with regard to the haulage route cannot be provided in such circumstances, the options that are available are as follows:

- Access from the N22 at Ballyvourney, Co. Cork: The L3021 from Ballyvourney provides a 15 km long direct route to the site entrance at Grousemount. However, while it has been used in the past for delivery of wind turbines to other wind farm developments in the locality and currently has no load restrictions applying, the bridge over the Sullane River at Ballyvourney is generally considered unsuitable for delivery of turbines of the size proposed for Grousemount. A temporary bridge over the Sullane River is proposed to cater for wind turbine deliveries. It will have associated temporary access to it from the N22 and L3021. Further to this, there are a number of locations along the route from Ballyvourney to the site where minor road realignments and improvements are necessary to facilitate the long load deliveries.
- Access from the N22 at Clonkeen, Co. Kerry: An existing access from the N22 at Clonkeen has been used in the past for delivery of wind turbines to other wind farm developments in the locality and an existing access from the L3021 has been similarly used. Construction of a 500 m length of track would link these two currently unconnected accesses to provide a 10 km long continuous access from the N22 at Clonkeen to a point close to the site entrance to Grousemount. Further to this, the final leg of the route, i.e. the existing access from the L3021 was developed for delivery of smaller turbines and requires improvement to facilitate the size of turbine proposed for Grousemount.

The final part of the route along the L3021 is common to the route from Ballyvourney, and some of the locations where minor road realignments and improvements are necessary to facilitate the long load deliveries are between the point where the access track from Clonkeen reaches the L3021 and the site entrance.

### 7.1.3 Wind Farm Entrances onto Public Roads

There will be three points of access to the site from the public road as follows:

- Access A: Site entrance from the L3021 Third Class Road near its junction with the L11187 Third Class Road at Coolknoohill, as permitted under planning Ref. 15/327.
- Access B: Site entrance from the L11187 Third Class Road at a location south of its junction with the L3021.
- Access C: Site entrance from the L11187 Third Class Road, where the public road terminates, as permitted under planning Ref. 15/262.

Detailed design of the site entrances will fully meet the appropriate guidelines regarding sightlines at accesses to non-national roads and drainage will be provided as necessary to prevent water from the access flowing onto the public road. Similarly, any existing road drainage will either be maintained or effective alternative measures will be provided.

A modified arrangement will be used temporarily during the latter stages of the wind farm construction programme when deliveries to the site of wind turbine components are taking place. The long load vehicles involved have restricted turning ability and would be unable to negotiate a conventional site entrance. The permanent entrance will be reinstated thereafter with the use of indigenous planting.

At Access A from the L3021 a lockable gate will be set back from the road frontage by an adequate distance to avoid traffic entering the site having to queue on the public road. This will also provide adequate visibility splays for traffic exiting the site and the radius at the entrance will be sufficient to accommodate the largest vehicle likely to use the access. Gates will be hung so that they do not open towards the carriageway.

The entrance will incorporate a cattle grid on the outside of the entrance gate and wheel wash facilities will be provided inside. The wheel wash will be an approved proprietary wheel wash. Wash water will not be allowed to enter any local watercourses and will enter a dedicated lagoon where the resultant sludge will be removed from site by a fully licenced contractor with the relevant waste collection and disposal permits.

The L11187 Third Class Road will be widened as necessary from its junction with the L3021 as far as Access B. There is effectively no traffic on this road and the need to avoid traffic queuing doesn't arise.

## 7.2 Comparison of Permitted and Proposed Arrangements

Key aspects of the current proposal and the arrangements approved under planning permissions Ref. 10/0197 of November 2010 (Barnastooka Wind Farm) and Ref. 10/1333 of January 2012 (Grousemount Wind Farm) are as follows:

- The number of turbines (38) is unaltered.
- The maximum overall dimensions of the turbines are 126 m, being unaltered for 24 turbines and increased by 1 m for 14 turbines (turbines T1-T6 will have a maximum rotor blade diameter of 93 m).
- With minor exceptions, turbine locations correspond with those approved. Turbines T1-T6 are relocated by approximately 10 m to provide for windtake considerations.
- The separate substations at Barnastooka and Grousemount are eliminated and replaced by the approved Coomataggart 110 kV Substation (Ref. 15/262).
- The following alterations are incorporated to improve the constructability of the combined development:
  - Revised access to Barnastooka and Grousemount: Reviews of permitted access arrangements indicated that revised access to the combined project would be of significant benefit.
  - Link track from Barnastooka to Grousemount: Further to the revised access above, from an operational perspective, it is evident that improved access from one section of the development to the other would improve the logistics from an operational and maintenance perspective.
  - Modification of dimensions of turbine towers and blades: The permitted developments have an allowable maximum blade tip height of 125 m (Barnastooka) and 126 m (Grousemount). A 126 m limit on the maximum overall dimension will be applied to the combined development. However, greater flexibility in the composition of the overall dimension could potentially increase the overall electricity generation, i.e. open international tendering could result in turbines having a combination of 75 m towers and 50 m long blades (or other combination) being the most attractive for the project.
  - Borrow pits / peat repositories at Barnastooka: Whereas on-site borrow pits / peat repositories are provided for in the approved development at Grousemount, this is not the case at Barnastooka. Clearly, such an arrangement would be beneficial from the viewpoint of minimising import of stone fill for construction purposes and disposal of surplus excavated material, with associated reduced traffic impacts on the public road. It would provide a uniform approach to the construction of the two elements of the combined project.

- Additional / relocated anemometer masts: The approved wind turbines are at relatively dispersed locations within the lands, leading to potentially significant variations in the wind regime. An additional anemometer mast or relocation of an approved mast from Grousemount to measure wind speed would facilitate improved validation of the operational performance of the wind turbines

## 7.3 Operation, Maintenance and Decommissioning

### 7.3.1 Operation

It is envisaged that the project will remain in operation for about 25 years following its commissioning, although depending on circumstances it may be viable to continue the project for another phase thereafter.

It is believed that an operational life of less than 25 years would be overly restrictive in comparison with recent grants of planning permission by various planning authorities and by An Bord Pleanála. A lesser operational life would impose a commercial disadvantage on this development in comparison with other similar schemes with which this development may potentially be in competition for supply of renewable electricity.

### 7.3.2 Maintenance

It is expected that the wind farm will have an availability of about 98%, i.e. it will be capable of operation for 98% of the time. Actual operation will be determined by the wind conditions experienced. However, on average, turbines turn and therefore produce electricity for about 80 - 85% of the time. The output of the wind turbines will depend upon the wind regime but a capacity factor of 30% - 35% is expected. This means that over the course of a year each turbine would produce 30% - 35% of the amount it could theoretically produce if it was working at maximum output at all times throughout the year.

Wind farms are designed to operate largely unattended and during the operational phase the wind farm will normally be unmanned. Each turbine will have its own in-built supervision and control system that will be capable of starting the turbine, monitoring its operation and shutting down the turbine in the case of fault conditions.

Supervisory operational and monitoring activities will be carried out remotely using a SCADA system, with the aid of computers connected via a telephone modem link.

### 7.3.3 Decommissioning

The available options at the projected end of the wind farm's operational life are as follows:

- Refit the turbines' key components and continue electricity production.

- Repower with the most up-to-date technology and continue electricity production.
- Decommission the development and reinstate the site.

The purpose of the activities surrounding the ultimate decommissioning of the wind farm will be to ensure that residuals are recovered / disposed of in a manner that will not adversely affect the environment, and that the site is fit for further use and poses no risk of environmental pollution.

The date of actual availability of the grid connection and thereby the construction of the wind farm will depend on an array of factors, not the least of which will be the need or otherwise to undertake either shallow or deep reinforcement of the grid in order to accommodate the additional electricity generation.

The grid is planned and developed to ensure it meets projected transmission needs while maintaining its performance within defined reliability standards. To continue to meet standards, in the context of forecast demand and new generation connections, there is a requirement for on-going development to reinforce the grid.

### 7.3.4 10 Year Duration of Permission

It is hoped that this will be achieved within the normal lifetime of a grant of planning permission (five years). However, given the element of uncertainty that is associated with this, as illustrated by delay to date, a duration of ten years is being sought for the lifetime of a planning permission issued on foot of this application.

## 7.4 Construction of the Proposed Development

### 7.4.1 Construction Activities

Construction will principally involve the following:

- Construction of site entrances and initial access tracks.
- Establishing temporary site facilities including site offices, construction laydown and storage areas.
- Earthworks and drainage for the provision of turbine access, crane pads and the Substation.
- Fixing of formwork and steel reinforcement for the turbine foundations, and construction of reinforced concrete bases with cast-in steel foundation section for the tower and backfilling around foundations.
- Reinstatement of areas around turbine bases and track edges.
- Works to facilitate delivery of wind turbine components via Ballyvourney or Clonkeen, with the former entailing a temporary bridge at Ballyvourney and the latter entailing some tree felling.
- Erection by crane of the turbine towers, nacelle and rotor blades.
- Construction of anemometer masts.
- Installation of underground cabling from each turbine to Coomataggart 110 kV Substation.



Further to the above, the following will be undertaken:

- Construction of Coomataggart 110kV Substation containing the Control Buildings and electrical equipment.
- Installation of ducts and cabling from Coomataggart 110 kV Substation to Ballyvouskill 220/110 kV Substation.

#### 7.4.2 Construction Environmental Management Plan (CEMP)

Each Contractor appointed to carry out construction works for this project will be required to prepare a site specific Construction Environmental Management Plan (CEMP) for work within their scope. The CEMP will identify the staff responsible as well as the steps and procedures that will be implemented to minimise the environmental impacts resulting from the site preparation, groundwork and construction phases of the project.

Approval and ongoing auditing by the Developer of this Plan will be a feature of the contract.

The following outlines, as a minimum, the features required in the CEMP.

- Introduction including background details to contract and the parties involved.
- Contractor's environmental policy and procedures.
- Contractor's management structure which will identify the project management structure and clearly identify the roles and responsibilities with regard to managing and reporting on the construction phase environmental aspects.
- An Environmental Risk Assessment and Risk Register together with the management controls proposed to eliminate and/or minimise the identified impacts.
- A Geotechnical Risk Register (GRR) to monitor the risks and risk reduction strategies proposed as part of the detailed design for the access tracks and hardstandings.
- Proposals on Environmental Training including site induction training, specialist environmental training and toolbox talks.
- Procedures for Method Statements / Permits to Work, to incorporate any CEMP requirements relevant to the work.
- Monitoring, auditing and reporting. Contractor's procedures and scope for daily monitoring, weekly auditing and reporting on CEMP.
- Procedures for handling external communications / complaints, liaison including the development and maintenance of a clear audit trail.
- Procedures for monitoring, recording and disseminating the environmental information and performance.
- Procedures for addressing non-compliance and corrective actions
- Procedures for dealing with major incidents.

The operation of the Plan will be supervised on a daily basis by the resident supervisory staff augmented by regular audits by visiting staff.

## 7.5 Mitigation Measures

Incorporation of measures to mitigate environmental impacts is inherent in the planning and design of wind farms such as Grousemount Wind Farm. This extends to all phases of the wind farm project from site selection and the concept phase, including consideration of alternatives, through development pre-planning and design phases to construction, operation and decommissioning.

The hierarchy in mitigating environmental impacts in the Grousemount Wind Farm project has been avoidance, reduction and remedy. The objective of the development has been to maximise the sustainable wind energy capture of what is a very suitable site for wind energy development without causing significant adverse environmental impacts. The design of Grousemount Wind Farm meets the primary objective of avoidance of impacts on environmental resources.

A consideration in all projects is to minimise the scope of project activity necessary to achieve the project objectives in a manner that is environmentally responsible. At Grousemount impacts on all aspects of the environment have been minimised by selection of the proposed scheme over the multiplicity of possible alternatives.

In particular, the results of significant geotechnical investigations have been utilised to develop a layout that can be safely constructed and minimises impacts on the most valuable habitats at the site.

Key mitigating actions during design, construction and operation of the wind farm include the following:

- Design of foundations for the wind turbines will be undertaken by qualified structural engineers who have successfully designed foundations for wind farm developments in similar environments.
- A full construction management team will be deployed on site in accordance with routine site construction procedures. This team will consist of a Resident Site Manager and Assistant Engineers as appropriate.
- All construction works will be carried out under appropriate supervision. Works will be carried out by experienced contractors using appropriate and established safe methods of construction. All requirements arising from statutory obligations, including the Safety, Health and Welfare at Work Act and associated regulations, will be met in full.
- ESB has had a long history of responsible operation of power plants throughout Ireland and is mindful of its obligations in regard to environmental protection.

## 8 Environmental Evaluation

### 8.1 Background

An EIS has been prepared for the project, the purpose of which is to assess the potential impacts on the environment arising from the proposed development and to detail the mitigation measures being proposed.

This section of the report provides a short summary of the structure and findings of the environmental chapters of the EIS so that the planning assessment (Chapter 9 of this Planning Report) and conclusions (Chapter 10 of this Planning Report) can be considered in the context of the main findings of the EIS.

### 8.2 EIS Structure

#### 8.2.1 Format

The **Environmental Documents** submitted with the planning application contains the EIS. The EIS is presented in the grouped-format structure with each category (Human Beings, Noise, etc.) being considered under the separate headings: Introduction, Receiving Environment, Impact of the Development, Mitigation, and Conclusions.

The EIS has been completed with broad reference to the following guidance documents produced by the Environmental Protection Agency (EPA):

- *Guidelines on the Information to be contained in Environmental Impact Statements, (EPA, 2002).*
- *Advice Notes on Current Practice in the preparation of Environmental Impact Statements, (EPA 2003).*

The EIA process anticipates the effect on the environment caused by the development. The procedure commences by establishing the scope of the study by reference to the nature of the project and its location. On completion of this stage, an EIS is prepared as part of the application for development consent. The competent authority (An Bord Pleanála) examines the EIS and consults with authorities likely to be concerned by a particular proposal by reason of their specific environmental responsibilities. An opportunity is provided to the general public to observations and objections to the proposed development through the process. Using this approach, the EIS provides the competent authorities and the public with a comprehensive understanding of the project, the existing environment, the impacts and the mitigation measures proposed.

Attention has been paid throughout the EIS to the Wind Farm Planning Guidelines for planning authorities issued by the Department of the Environment, Heritage and Local Government (DoEHLG) in 2006. These are designed to ensure consistency of approach to wind energy developments throughout the country and to provide clarity to prospective developers and local communities.

## 8.2.2 Presentation

The EIS folders contain the following documents:

- **Environmental Impact Statement (EIS) - Volume 1 Main Text**
- **Environmental Impact Statement (EIS) - Volume 2 Appendices**
- **Environmental Impact Statement (EIS) - Volume 3 Photomontages**

The application is accompanied by an electronic version on a DVD. The DVD for both the Planning and EIS documents can be found on a sleeve on the inside cover of Planning Documents Volume 1. The documentation can also be found on a website at [www.grousemountwindfarm.ie](http://www.grousemountwindfarm.ie).

An Appropriate Assessment Screening Report is provided separately in **Volume 1 - Planning**.

Appropriate methodologies have been used to assess the effects relating to each of the environmental topics that have been investigated as part of the EIA. These methodologies are based on recognised good practice and guidelines specific to each subject area, details of which are provided within each individual technical section.

The Regulations require a description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development.

Within the EIS, significance is generally determined through combining the sensitivity of a receptor to an effect and the magnitude of the predicted change. This is generally undertaken through:

- Identifying baseline conditions of the site and its environs.
- Identifying the sensitivity of receptors that may be affected by changes in the baseline conditions.
- Predicting the magnitude of likely changes to the baselines.
- Assessing the significance of effect taking into account sensitivity of receptors and magnitude of effect.
- Identifying of appropriate mitigation measures.
- Assessing the significance of residual effects, taking account of any mitigation measures.

Mitigation is defined within the Regulations as measures designed “to prevent, reduce or where possible offset any significant adverse effects on the environment”. Within this EIS the following approach has been taken to mitigation:

- So far as possible mitigation measures are embedded within the development by design, for example through the locations of wind turbines, maintaining appropriate separation distances between environmental receptors and wind turbines, and through incorporation of best practice approaches and construction techniques.

- Where mitigation measures are identified to prevent, reduce or offset likely significant adverse environmental effects, the mechanism through which such mitigation measures can be secured is identified.

Every effort has been made in the preparation of the document to keep it as concise as possible while also ensuring that relevant material is adequately covered. The method of presentation can be summarised as follows:

- Section 1 provides an introduction to the project.
- Section 2 provides a description of the proposed development.
- Section 3 provides a description of the project implementation.
- Section 4 sets out the planning and policy context.
- Section 5 describes the alternatives that have been considered.
- Sections 6 – 18 consider the environmental impacts of the proposed development with detailed focus on the issues considered to be of potential significance.
- Section 19 considers the possible interaction of impacts outlined in Sections 6 – 18.

In an effort to minimise repetition and to keep the EIS as concise as possible, mitigation measures that are applicable to a number of topics may or may not be repeated in the document. In general, only mitigation that is associated with the primary impacts is described. While every effort is made to present together all details relating to individual topics, these should not be considered in isolation of others and without reference to context.

## 8.3 Main Findings of the EIS

The main findings of the EIS as presented in the Non Technical Summary are summarised in this section. The full suite of EIS documentation should be read for a full understanding of environmental issues associated with the project.

### 8.3.1 Human Beings

The site is in a remote rural area with relatively low housing density.

The development will lead to local employment during the construction stage.

Grousemount Wind Farm will be a large construction project, representing a very significant financial investment. The project will involve a capital investment of about €180M and positive impacts are expected as regards input to the local economy. This will particularly arise during the construction phase when there will be requirements for plant and machinery and for construction materials. In the longer term there will be an on-going requirement for maintenance support, services and equipment.

A feature of wind farm developments is their low site occupancy. In this instance less than 3% of the available lands will be incorporated in the completed development with the remainder being available for existing or alternative future uses.

The payment of local authority rates to Kerry County Council will provide indirect long-term benefit for the broader community.

Safety is a core value in ESB and in its subsidiary companies. Its management and continual improvement are an integral part of company activities. All relevant health and safety legislation will be adhered to during all stages of the project from construction through to decommissioning. Extensive operational experience has shown that the health and safety record of wind turbines is exceptionally high, being better in most instances than other forms of electricity production. The basic technology to be employed in the project is well understood and is in an advanced state of development. It has been used successfully in many equivalent projects both nationally and internationally. There are no implications for health and safety.

Neither Coomatagart 110 kV substation nor the grid connection from it to ESB Networks' Ballyvouskill Substation near Millstreet, County Cork have potential for cumulative impacts regarding human beings.

### 8.3.2 Noise and Vibration

Construction works that could give rise to off-site noise will effectively be limited to earth moving, excavating and concreting. Noise levels resulting from construction of the wind farm were calculated for various distances from the site and it was concluded that noise levels will be well below the limits commonly imposed for construction sites. In general potential noise receptors are at a significant distance from the locations of most of the construction activities.

There are no existing significant noise sources at the site. Independent continuous noise monitoring comprising unattended sound level meters at six positions, which were identified as being representative of noise sensitive locations, was undertaken over a 15 day period in February 2015 to establish the typical noise environment in the environs of the development.

Following review of relevant local and international guidance, appropriate noise criteria for the development were identified, with separate limit values applying during daytime and night-time, in accordance with recommendations.

Noise resulting from the operation of the wind turbines was predicted and assessed for a range of wind speeds using computerised modelling in the context of the derived noise limits. The calculations included a factor of safety applied to the turbine noise outputs used. In addition to the turbines at Grousemount, the modelling took account of the existing wind farms in the area. It also considered permitted but as yet undeveloped projects.

Marginal exceedances of limit values were predicted at a number of locations at certain wind speeds. However, these exceedances were all less than 3 dB, which is

commonly recognised as the minimum perceptible increase in noise levels under normal conditions, and at all but one dwelling were less than the factor of safety built into the calculations. Nonetheless, a turbine curtailment strategy was devised, whereby turbine power output and hence noise emissions will be controlled.

The DoEHLG Windfarm Planning Guidelines note that, in general, noise is unlikely to be a significant problem where the distance from the nearest turbine to any noise sensitive property is more than 500 m, as is the case at Grousemount. In reality, discernible breaches of limit values will be unlikely to occur, even without the curtailment strategy. Following implementation of the strategy, any potential impacts on nearby houses from turbine noise will effectively be eliminated. The potential impacts from turbine noise from the Grousemount Wind Farm are considered to be negligible. There are no existing significant noise sources at the site. Continuous noise monitoring comprising unattended sound level meters at six positions identified as being representative of noise sensitive locations was undertaken over a 15 day period in February 2015 to establish the typical noise environment in the environs of the development. Noise resulting from the operation of the wind turbines was predicted and assessed for a range of wind speeds using computerised modelling in the context of recognised target noise levels. These were derived from the measurements of ambient conditions. It was calculated that noise levels attributable to the turbines will be below target noise levels and there will be no discernible impact.

There is an increase in turbine noise level as wind speed increases. However, ambient noise, the noise from wind in nearby trees and hedgerows, around buildings and over local topography, also increases with wind speed, but at a faster rate. Thus, at the nearest residences, noise from the turbines will be completely masked by ambient noise, particularly at high wind speeds. Ambient noise is low in calm conditions with wind speeds of 0 – 4 m/s and turbine noise could be more discernible. However, the turbines are not in operation in these conditions.

Distances from the turbines to the nearest dwellings outside the site ensure that noise impacts of significance will not arise from the construction or operation of the wind farm. The DoEHLG Windfarm Planning Guidelines note that, in general, noise is unlikely to be a significant problem where the distance from the nearest turbine to any noise sensitive property is more than 500 m, as is the case at Grousemount.

Neither Coomataggart 110 kV Substation nor the grid connection from it to ESB Networks' Ballyvouskill Substation near Millstreet, County Cork have potential for cumulative impacts regarding noise.

### 8.3.3 Shadow Flicker

Wind turbines, as with trees or any other tall structure, can cast long shadows when the sun is shining and is low in the sky. However, wind turbines differ from most other tall structures, such as chimneys. If the sun is behind its rotor, for an observer in an enclosed room in a nearby house the turbine has the potential to create a shadow that apparently flicks on and off as the blades rotate and the shadow passes the window.

This phenomenon, which is known as the shadow flicker effect, is generally only observed in the period after dawn and before sunset, when long shadows are created. It lasts for just a short period and depends for its occurrence on a combination of many circumstances, including there being a suitable window to be affected and the absence of any screening.

Shadow flicker analysis was undertaken using computer software and examined potential occurrence at 44 residences. It was based on the combined operation of the wind turbines at Grousemount and all of those that are already in place or planned in the surrounding area. The results showed a potential for shadow flicker effects at four residences only. The worst case predicted annual hours of occurrence is only slightly in excess of 50% of the recommended limit value.

Furthermore, the probability of the actual simultaneous occurrence of all the multiple circumstances needed for shadow flicker is very low and it is considered highly unlikely that shadow flicker could cause a nuisance. However, in the event of validated records indicating a significant shadow flicker impact, the developer will consider suitable mitigation, which would include pre-programming turbines to prevent their operation on the dates and times when shadow flicker could cause a nuisance.

Neither Coomataggart 110 kV Substation nor the grid connection from it to ESB Networks' Ballyvouskill Substation near Millstreet, County Cork have potential for cumulative impacts regarding noise.

### 8.3.4 Terrestrial Ecology

#### 8.3.4.1 Wind Farm Site

The wind farm site is dominated by wet heath vegetation, which has developed on sloping terrain with a relatively shallow peat cover and which is generally in good condition, reflecting relatively low levels of livestock grazing in recent times. This is a common habitat in the upland regions of County Cork and County Kerry. Other important habitats such as dry heath and scrub woodland also occur, but have a relatively restricted distribution. Areas of blanket bog occur on deeper peat at higher altitudes and especially on plateau areas to a limited extent. Although these areas support a typical flora, the habitat has generally been affected in past times by drainage, peat-cutting and possibly overgrazing, which have impacted on their hydrology. Much better and more representative areas of blanket bog occur in a regional context, especially in sites designated for nature conservation.

The vast majority of the route of the underground cable and its associated joint bays is along or adjacent to public roads. The main exception to this occurs in six instances along the route where watercourse crossings will be by means of horizontal directional drilling (HDD) requiring localised access off the public road.

The principal ecological impact of the wind farm will be loss and disturbance of habitats, some of which are of conservation value. However, the extent of the permanent loss of habitat is a low proportion of the total development land (less than 3%). The loss of this habitat is considered an impact of moderate significance.



Mitigation measures are proposed that will keep disturbance of habitats to a minimum.

#### 8.3.4.2 Cable

With the underground cable being within the public road, the loss of habitat arising from trenching works and construction of joint bays will be limited to the marginal strips along the road carriageway. Limited disturbance will also result from the work zone around the joint bays. The overall effect is rated as an imperceptible impact.

The open and exposed character of the wind farm site results in few mammal species being present. The fauna recorded during the surveys or expected on site is fairly typical of the habitats present and the geographical location, with a limited number of species adapted to the open and exposed environment. The loss of relatively small amounts of habitat will have no measurable impacts on the terrestrial mammal, amphibian and reptile populations that inhabit the site and all should continue to retain a presence in the vicinity after the turbines are constructed. As the construction works for the underground cable will be confined almost entirely to roads and tracks, with local off-road incursions for stream crossings, habitats suitable for supporting mammal species will be largely unaffected.

Although it is still very widespread in Ireland and is present on most river systems, otter is a species of high conservation value. It is the most important mammal species present on the wind farm site and is expected to be resident on all the main rivers and streams along the cable route having fish populations. A pre-construction survey for otters will be carried out, focussing on search for holts and regular otter activity, and mitigation, which will include measures to be taken at river and stream crossings to maintain water quality, will be recommended as considered necessary and in compliance with the Wildlife Acts.

Red Grouse, a species confined to peatland habitats and of conservation importance, is the most significant bird species associated with the Grousemount site, where it is resident, although sparsely distributed. Red grouse could be disturbed during construction works, although this would be of temporary duration and at any one time limited to only part of the site. While not considered to be at risk from collision with wind turbines, they could also show some displacement behaviour when the turbines are operational. However, it is likely that they would habituate to the presence of turbines, as observed elsewhere.

While White-Tailed Eagle has been recorded on site and in the wider area, the site does not offer potential nesting sites for eagles or stands of trees suitable as night roost sites. At most, as with any other location in the wider area, feeding birds could be attracted to the site should carrion or carcasses be present, or they may pass through the site in transit to large lakes or other locations in the region. It is considered that the wind farm will not introduce a significant risk to white-tailed eagles. While the cable route passes through and alongside the Mullaghanish to Musheramore Mountains Special Protection Area (SPA), it is not expected that the

works would have adverse impacts on the local hen harrier population. This reflects the scale and nature of the works.

While habitats and fauna species of conservation interest are present within the wind farm site, it is considered that the overall ecological impact of the development will be of low significance in the medium to long term, due to the sensitive project design and the mitigation measures that will be implemented to minimise identified adverse impacts. In particular, the proposed development will not affect adversely the qualifying interests of any site designated for nature conservation in the vicinity of the wind farm.

The potential for impacts on European Natura 2000 sites in the vicinity of the project was evaluated by considering three principal sites (St. Gobnet's Wood SAC, Mullaghanish Mountain SAC, Mullaghanish to Musheramore Mountains SPA) and it concluded that the project would not have significant adverse impacts on these sites.

### 8.3.5 Aquatic Ecology

#### 8.3.5.1 Windfarm Site

There are no Natura 2000 sites within 15 km of any part of the site that have a hydrological connection to the wind farm. The nearest site is the Kenmare River SAC and it will not be adversely impacted by the development.

Watercourses at the site, all of which are part of the Roughty River system, which drains to the Atlantic at Kenmare c. 20 km downstream of the wind farm site, that are marked on 1:50,000 OS Discovery Series mapping were assessed.

Twenty three sampling sites were established for biological water quality assessment and timed electrofishing was carried out at nine sites, where chemical assessments were also carried out.

A habitat assessment, which addressed salmonid habitat quality, lamprey habitat quality and freshwater pearl mussel habitat quality, was undertaken for the Roughty River's Main Channel, the Red Trench South River, Roughty Eastern Tributaries, Roughty Western Tributaries, Roughty Southern Tributaries and Roughty Northern Tributaries. In addition, barriers to upstream movement of salmonid fish were identified and the Biological Water Quality, Fishery Value and Ecological Value of each catchment area were assessed.

Most tributaries were classified as being of high local importance with some being of a lower moderate importance and the main channel of the Roughty River being classified as of regional importance. Most tributaries were classified as being of high local importance with some being of a lower moderate importance and the main channel of the Roughty River being classified as of regional importance. Whereas the previously known furthest upstream record for Freshwater Pearl Mussel was at Morley's Bridge, survey results extended the known range of the population in the Roughty upstream to a closer to the proposed development

Potential impacts during construction were evaluated in terms of pollution of streams with suspended solids and potential significant long-term aquatic effects (permanent loss of habitat due to track construction and obstruction to upstream movement of aquatic fauna due to culverting).

Detailed mitigation measures are outlined to prevent suspended solids pollution during construction of turbines, trenches and tracks. Other mitigation will involve the contractor drawing up a Construction Environmental Management Plan (CEMP), which will include all of the avoidance and detailed mitigation measures as outlined, and detail how the effectiveness of these mitigation measures will be monitored. There will be ongoing consultation with National Parks & Wildlife Service (NPWS) and Inland Fisheries Ireland (IFI) throughout all phases of the works and a mechanism for reporting of pollution incidents will be agreed in advance. The Contractor will be required to consult with the NPWS and IFI in relation to the final detail of the CEMP and will include their requirements in this regard.

Before earthworks commence on site, erosion control and sediment control measures will be in place and functioning. They will be inspected and approved by the Ecological Clerk of Works (EcOW), who will be part of the site management team and will be supported by an independent Project Ecologist providing advice as necessary on all matters relating to ecology.

Span structure or fauna passable culvert and span structures that do not interfere with the bed or immediate bank of the river/stream are recommended for watercourse crossings.

Following implementation of mitigation measures, where they do arise, residual impacts will be minor.

#### 8.3.5.2 Aquatic Ecology – Cable

The route of the underground cable traverses two main river catchments, namely the Roughty River to the west containing about 25% of the route, although the main channel is not crossed, and the Sullane to the east containing the remaining 75%.

A series of detailed field investigations was undertaken in late-2014 at all the main river and stream crossings along the cable route to assess water quality and fisheries habitats.

At each of the 147 crossings encountered, an assessment was made about the likelihood that fish were utilising the habitat present. Of these, the majority (92) are thought likely to have no fish life, a smaller number (31), all being small or very small streams, are thought very unlikely to have fish present, and a further smaller number (16) of small to moderately sized streams are thought to have a higher probability of fish being present. Finally, there are eight larger streams and river sections that will definitely have fish present and contain moderate to good fisheries habitat downstream of each crossing point. Only in the case of one crossing is it possible that salmon might be present.

Where there is insufficient overburden above the bridge or culvert to allow the cable be laid over the structure without a need for in-stream works, the method of

watercourse crossing will be either open-cut or trenchless (horizontal directional drilling (HDD) where the cable is installed below the bed of the watercourse without in-stream works). Open-cut will only be undertaken in the period May - September at streams likely to contain fish, i.e. outside of the salmonid spawning and early fry development period. The choice of open-cut method, either damming with pump-over or damming with flume, will depend mainly on the flow in the channel being crossed. HDD will be employed at six river crossings, all of which are significant watercourses and all of which contain fish.

Fish bearing watercourses crossed by the open-cut method will exhibit localised temporary reductions in habitat quality due to residual sedimentation below the crossing points. However, these impacts will be minor and temporary in nature in the context of each of the river systems affected.

Two Annex II aquatic species are present within the Roughty and Sullane catchments, namely the Freshwater Pearl Mussel, which require a very high standard of water quality to maintain sustainable populations, and the Atlantic salmon, whose fertilised eggs laid in redds require adequate clean water flowing through the redds to allow them to hatch and develop. Based on the assessment undertaken, it was concluded that there will be no significant adverse impacts caused to the Annex II aquatic species freshwater pearl mussels or salmon downstream of any of the crossings.

## 8.4 Landscape

The site is situated in the uplands enclosing the Upper Roughty River Valley, an area that comprises a deep and steep-sided valley, enclosed by a roughly U-shaped range of mountains. It 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.

The mountains around the upper valley are predominantly covered in moorland that is free of divisions such as hedgerows, 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 sparsely vegetated hedgerows. In Co. Cork to the east and south of the Upper Roughty River 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 is also characterised by a high degree of visual enclosure.

Grousemount Wind Farm will result in a more complete occupation of the Upper Roughty River Valley landscape by wind energy development. However, because of the Valley's topography, which generates an unusually high degree of visual enclosure for the site, and of the location of the turbines below the ridgeline of the mountains enclosing the valley, less than 25% of the area within 30 km of the site would afford views of the turbines.

A total of 24 locations considered to be typical of the development's receiving environment were selected for detailed assessment of the potential effects on views and visual amenity by way of photomontage and wireframe analysis.

The assessment found that in all areas outside of the Upper Roughty River Valley, including important recreation and tourist routes for walking, cycling and driving, passing through the receiving environment, 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.

For the vast majority of the receiving environment and potential visual receptors, it was concluded that the effects of the development on visual amenity would be of low significance and neutral. The composition, character and quality of views would not be significantly affected. However, it was found that in two small areas of the receiving environment, adverse effects on visual amenity would be experienced.

Other than from the most elevated locations, no wind turbines are currently visible in the landscape in the scenic area around Ballingearry and Lough Allua, Co. Cork. 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 and the area is very sparsely populated, limiting the number of affected visual receptors.

Visual amenity would also be adversely affected in the Upper Roughty River 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.

There being one-off houses 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.

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 siting, spatial extent and arrangement of the turbines would respond appreciably to the landform. 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.

Neither Coomataggart 110 kV Substation nor the grid connection from it to ESB Networks' Ballyvouskill Substation near Millstreet, County Cork have potential for cumulative impacts regarding landscape.

## 8.5 Atmospheric Emissions and Air Quality

Air pollution is a local, regional and global problem, and the impacts of air pollutants are wide and varied, affecting both the environment and human health.

Having no environmental emissions to atmosphere, Grousemount Wind Farm will have no direct impact on air quality in the area.

Electricity generated by Grousemount Wind Farm will not lead to additional emissions of sulphur dioxide (SO<sub>2</sub>) or nitrogen oxides (NO<sub>x</sub>), long-range atmospheric transport of which can contribute to regional problems of acidification and eutrophication of soils and waters and to air pollution over a wide area. The Government has international obligations regarding reduction of carbon dioxide (CO<sub>2</sub>) emissions, which is the primary greenhouse gas associated with global warming and whose emissions will also be avoided by this development. In its overview of Ireland's greenhouse gas emission projections the EPA has reported that there continues to a significant risk that Ireland will not meet its 2020 EU targets even under the most ambitious emission reduction scenario.

The development of renewable energy and, particularly in Ireland, wind energy with zero emissions is seen as an essential element in achieving reductions in emissions, while allowing continuing economic expansion.

Whereas emissions from road traffic are now considered the primary threat to air quality in Ireland, the primary air quality issue related to construction is dust. However, all residences are at a significant distance and it is considered that they will be affected by dust from the site construction works, if any is created.

A loss of forestry of approximately 1.5 ha will result from completion of the wind turbine delivery route from the N22 at Clonkeen with an associated loss of carbon sequestration. However, the equivalent environmental benefit in avoided annual air emissions that Grousemount Wind Farm will confer greatly exceeds the extent of lost carbon sequestration, which is inconsequential.

Neither Coomataggart 110 kV Substation nor the grid connection from it to ESB Networks' Ballyvouskill Substation near Millstreet, County Cork have potential for cumulative impacts on air and climate.

## 8.6 Geology and Soils

Geological mapping indicates the underlying bedrock at the turbine locations comprises purple siltstone and fine sandstone from the Bird Hill Formation. A small section of the northern end of the site comprises cross bedded sandstone and siltstone of the Slaney Sandstone Formation. The ground conditions across the wind farm site generally consist of peat overlying glacial till over sandstone and siltstone bedrock.

There are no records of historical peat slips within the site and walkover reconnaissance surveys have indicated no topographical features indicative of peat instability. It has been confirmed that there are no proposed geological heritage sites within the boundary of the development.

A geotechnical site investigation comprising a total of 256 trial pits along the access tracks, at turbine locations and at other infrastructure locations, together with rotary boreholes at the locations of the turbines, the borrow pits and the permitted Coomataggart Substation, commenced in Spring 2015. Results have indicated peat depths of less than 1 m at just over 80% of the turbine locations and along almost 80% of the proposed access tracks. Peat depths are in the range 0.4-2.5 m at Coomataggart Substation and at all but two borrow pits are less than 1 m.

Spoil will be created from excavated access tracks, which will have an excavated width of 7 m, the wind turbine foundations, which will be approximately 18 m diameter, and associated hardstandings, and Coomataggart Substation. Other minor sources of spoil will be the foundation for the anemometer masts and cable trenches for power and control cabling. As a worst case scenario, a total volume of excavation of approximately 450,000 m<sup>3</sup> has been calculated.

The primary considerations in the management of earthworks at the site will be ensuring the geotechnical safety of the site and protecting the aquatic environment by preventing sediment laden surface water runoff to watercourses. Detailed design stage and construction stage mitigation measures have been specified for the project. A spoil management strategy has been developed to securely store the vast majority of surplus excavated material within excavated borrow pits and banded peat repositories on the site so that the risk of a peat slide from uncontrolled peat storage is negligible. In addition some excavated material will be sidecast at suitable locations.

A Peat Stability Risk Assessment (PSRA) was carried out using information on the ground conditions, topography, hydrology, ecology, land use and other factors. The impact of a potential peat slide was also considered. The likelihood and impact of a peat failure at different areas of the site were combined to derive the risk ratings. The peat risk has been minimised by optimising the design of the wind farm and will be mitigated by choosing a safe and controlled construction methodology; having a rigorous documentation and quality control system during construction and by controlling construction activities carefully.

The primary risk mitigation measures that reduce the likelihood of a peat slip include constructing the tracks and hardstandings by excavate / replace down onto the underlying glacial till or weathered rock below the peat, and the implementation of specific spoil handling procedures to control on-site storage of excavated peat and mineral soil.

The results of the PSRA show that, taking mitigation measures into account, Grousemount Wind Farm can be constructed safely from a geotechnical perspective and that the proposed development will not result in significant long-term adverse environmental impacts.

The grid connection to ESB Networks' Ballyvouskill Substation near Millstreet, County Cork has no potential for cumulative impacts regarding geology and soils.

## 8.7 Hydrology, Hydrogeology and Water Quality

The site is located within the South West River Basin District (SWRBD) with surface water from the site forming the upper reaches of the Roughty River, which flows through Kilgarvan to enter the sea at Kenmare Bay, approximately 20 km downriver of the site

An increase in run-off following rainfall will occur, but the extent of the lands at the site that will be impacted by the development is small relative to the total land area, representing less than 3% of the site. The increase in surface water runoff over the baseline condition is calculated as approximately 0.23%, which is not considered significant.

There is a low potential for groundwater dispersion and movement within the underlying aquifer, thereby making surface waters more vulnerable than groundwater at this site. Impacts on local groundwater levels are anticipated to be negligible. There is no potential to impact on groundwater quality or quantity supplying any wells that may be a source of domestic water supply to private dwellings in the vicinity

Consideration of surface water hydrology of the development and other aspects of the receiving environment indicates that there is potential for local impacts during the construction phase at isolated locations within the site, notably the potential for elevated suspended solids in natural drainage discharges. Mitigation drainage designs are required so that no residual significant impacts will occur.

Runoff control and drainage management are key elements in terms of mitigation against impacts. The rationale underlying drainage water management is to keep clean water clean by avoiding disturbance to natural drainage features and diverting clean surface water flows and to collect any drainage waters from works areas within the site that might carry silt or sediment and nutrients and route them towards stilling ponds prior to controlled diffuse release over vegetated surfaces. There will be no direct discharges to surface waters. During the construction phase, all runoff from works areas, i.e. dirty water, will be attenuated and treated to a high quality prior to being released.

No wind farm development infrastructure is located either up-gradient or down-gradient of Sillahertane Bog or Ballagh Bog and there will be no impact on the surface water hydrology of these sites.

Detailed mitigation measures are specified to control potential pollution and these include deployment of mobile silt traps that can remove fine particles from water using a proven technology and hydraulic design in a rugged unit, and specifically designed for use on construction sites

FWPM are known to be particularly sensitive to the presence of fine sediments. Earthworks such as those proposed have the potential to impact on FWPM sites from runoff, if the appropriate stringent mitigation measures are not put in place. While settlement ponds will form an important element of the drainage proposals for the site, they will not be stand alone measures but will be part of a treatment train of



systems that will be applied in series to ensure protection of downstream watercourses.

The measures that have been prescribed and the approach taken follow best practice and have been successfully employed on similar schemes in similar sites.

An inspection and maintenance plan for the on-site drainage system will be prepared in advance of commencement of any works. Surface water quality monitoring, which will be completed in consultation with IFI, will be undertaken during the construction phase.

No significant cumulative hydrological impacts are anticipated from the construction of Grousemount Wind Farm, including Coomataggart 110 kV Substation, the permitted grid connection from it to ESB Networks' Ballyvouskill Substation near Millstreet, County Cork and other wind energy developments in the region.

## 8.8 Roads and Traffic

The site is accessed from the L3021 (County Kerry designation) / L3400 (County Cork designation) Third Class Road, which is part of a network of country roads that serves a rural community that is reliant mainly on agriculture. Short-term effects on traffic will arise during the construction period, but there will be no effects thereafter.

On the basis of a worst case scenario of some stone fill material being imported to the site, the total number of materials deliveries involving heavy commercial vehicles (HCVs) is estimated as being approximately 6,025, or a total of 12,050 traffic movements on and off the site when allowance is made for the return of empty vehicles. This includes traffic associated with the construction of Coomataggart 110 kV Substation. Over an 18-month construction period the additional average daily traffic movements is about 30 HCVs. There will also be private car movements at the beginning and end of the day as the workforce arrives at and departs from the site.

For wind farm developments the most significant source of construction traffic is usually trucks carrying stone fill and the above worst case calculated daily traffic includes an allowance for some import of this material. However, in this instance it is anticipated that most stone will be sourced from up to nine borrow pits within the site and there will be less traffic on the public road than would otherwise be the case.

Rather than occurring uniformly throughout the construction period, traffic movements will peak on the 38 non-consecutive days on which concrete for turbine foundations will be delivered. Each foundation will involve up to 55 deliveries or 110 vehicle movements. For most of the construction period the additional traffic will be lower than this.

Short-period traffic counts were carried out in June 2015 on the L3021 / L3400 at the bridge adjacent to the N22 at Ballyvourney, Co Cork to ascertain the traffic patterns in the area. There are no particularly notable sources of traffic in the area,

and cars and light vans accounted for virtually all the traffic occurring, with only one heavy goods vehicle (HGV) being recorded in four hours of measurement. The road is currently operating well below capacity, with users experiencing no significant delays. Whereas the increase in HCV traffic will be discernible due to the low level of existing use, correspondingly the number of motorists using the route that will be temporarily affected by increased traffic will be low.

Local roads will be affected by construction traffic and to that end independent surveys undertaken at the start and end of the construction phase will form the basis for assessing the extent of any repairs that may subsequently be necessary. In the interim it will be the Developer's intent to maintain the roads in a suitable condition for wind farm related and other traffic. Any road improvements that are undertaken will ultimately benefit the local population.

Delivery of wind turbine components will use special transporter vehicles and, although they are relatively light, it is the turbine blade deliveries that typically defines both vertical and horizontal alignment requirements.

Traffic arising during operation will be limited to occasional visits by light vehicles used during routine inspection and preventive maintenance. This will be indistinguishable from other traffic and there will be no significant impact in the long term.

The roads in which the underground cable will be installed are the L11187 and the L3021 / L3400 from Coomataggart 110 kV Substation within the wind farm to site to Ballyvourney. From here it follows to N22 for approximately 40 m before turning to follow a series of minor roads to ESB Networks' Ballyvouskill Substation near Millstreet, County Cork.

A slight increase in traffic will arise due to construction vehicles, all of which will be regular road going vehicles. It can be estimated that approximately 20 HGV movements will occur daily at each cable work location. The necessary traffic control measures to be employed over the cable will include single lane and full road closures. In the latter case, an all-stop system may be required for local residents where no suitable diversion route available.

## 8.9 Material Assets

**Tourism & Amenity:** The site location is not a significant tourism area in its own right and the wind farm is not anticipated to have any negative impacts on tourism. There is no potential to impact on the flagship tourism attractions in Co. Kerry. Independent research has shown that the presence of wind farms makes little difference to holidaymakers' enjoyment of their holiday and wind farms were not seen as having a detrimental effect on tourist visits.

While the wind farm will be visible over a short length of the Kerry Way in the area north of Kenmare, at a distance of 15 km the wind turbines will not be prominent features and they will not negatively affect the character or quality of the view.

**Energy Supply:** The electricity generated by the proposal will make a significant contribution to national availability of electricity supplies, being equivalent to the annual consumption of approximately 70,000 homes during the lifetime of the project. The project will contribute to ensuring that adequate electricity supplies are available to support economic activity and growth in a manner fully compatible with Government energy and environmental policies.

Amongst the benefits of electricity generation from wind are considered to be its contribution to environmental sustainability and displacement of imported fossil fuels.

**Air Navigation:** There are no implications for air navigation and there will be no impact on the safety of air traffic.

**Electromagnetic Interference:** While no impacts are predicted, in the event that the wind farm development leads to interference with television reception, all necessary measures will be undertaken by the developers to fully eliminate any negative impact. This will be in accordance with a protocol agreement that has been established specifically to cover such situations and that will be entered into with RTÉ by the developer.

A total of 46 companies were contacted in a desktop assessment of possible interference impacts on telecommunications and radar infrastructure in the vicinity of the wind farm. No company expressed any serious concerns about the development, this being largely attributed to the area being rather unpopulated, remote and not having a significant existing telecommunications infrastructure.

## 8.10 Cultural Heritage

A detailed field survey of the development areas was undertaken in July 2015 and this complimented previous surface reconnaissance surveys undertaken in 2003, 2008, 2010 and 2014. In addition, a wade and metal detecting survey of proposed watercourse crossings, during which nothing of archaeological potential was noted, was undertaken in 2015. The lands in the Barnastooka area were previously subjected to a surface reconnaissance survey and archaeological testing in 2010, while additional inspections throughout the site were undertaken in 2015 during geotechnical investigation works. A 100m wide corridor centred on the cable route was assessed for the presence of archaeological monuments.

There are seven sites/complexes of archaeological interest/potential and listed in the Sites and Monuments Record (SMR) of the Archaeological Survey of Ireland (ASI) located in the wind farm area, although not all of these are in the development area. A further 36 sites of archaeological potential have been identified during the various fieldwork. None of the four sites of archaeological interest/potential within the overall underground cable study area is located immediately adjacent the road network and all are located at sufficient distances that they do not have the potential to be impacted by the works

All but one of the Recorded Monuments are located outside the boundaries of the wind farm site and at distances which do not allow for any impacts to occur. All of

the remaining monuments are generally located a minimum of 100 m from the various elements of the development. However, five sites are located at closer distances and consequently, without appropriate mitigation measures, have the potential to be disturbed by construction works/construction traffic. Potential impacts will be mitigated by establishing a marked 20 m buffer from the outermost identifiable edge of the monument.

There are no protected structures within the meaning of the Planning and Development Act, 2000 situated within the study area at the wind farm. However, there are a number of habitable, abandoned or ruinous structures, which by their general nature and construction dates are considered to be of local interest from the perspective of architectural heritage. There are two protected structures situated within the study area for the underground cable and ten further structures of architectural heritage interest were noted as result of research and field survey undertaken.

It is not considered that any of the sites/structures at the wind farm site or along the route of the underground cable will be directly impacted upon by the proposed development, and consequently it is considered that no predicted direct impacts will occur.

## 8.11 Interaction of Impacts

Interaction of impacts does occur to some extent, but the level of such interaction does not significantly magnify the primary impacts as described.

## 9 Planning Assessment

### 9.1 Introduction

This section provides the applicant's assessment of the proposed development in relation to national, regional and local planning policies and objectives, in order to ascertain whether it is consistent with the proper planning and development of the area.

As the application represents a revised and amalgamated layout to the previously permitted wind farms, the principle of wind farm development at this location has already been established and is currently permitted as a result of two extant permissions on the site for 24 turbines. The key issues for assessment therefore relate to the potential for impacts on the local environment and how potential impacts can be mitigated. In this regard, the EIS identifies potential impacts and describes how these can be mitigated.

### 9.2 National

The relevant sections of national policies with regard to the development of sustainable energy sources and the National Guidelines for Wind Farm Development have been outlined in Chapter 5 of this report.

Whilst the proposed development is not specifically identified in national policies and objectives, it is apparent that planning policies and objectives at the national level generally support the development of the proposed wind farm, as it is a key project relating to the delivery of renewable energy, and it will contribute to Ireland meeting its renewable energy targets.

The proposed Grousemount Wind Farm is therefore consistent with national policies and objectives.

### 9.3 Regional

The relevant sections of the Regional Planning Guidelines for the South-West Region 2010 – 2022 have been outlined in Chapter 5 of this report.

Whilst the proposed development is not specifically identified in regional policies and objectives, it is apparent that planning policies and objectives at the regional level generally support the development of the proposed wind farm, as it is a key project relating to the delivery of renewable energy, and it will contribute to Ireland meeting its renewable energy targets.

The proposed Grousemount Wind Farm is therefore consistent with regional policies and objectives.

## 9.4 Local

County Development Plans (CDP) are the most relevant plans in terms of assessing whether the proposed development is consistent with the proper planning and sustainable development of the area. The proposed development will be located in the County Kerry administrative area, with some temporary elements located in County Cork.

In November 2012, Kerry County Council adopted an 8th variation to the Kerry County Development Plan 2009 – 2015, in that the Draft Renewable Energy (RES) Strategy 2012 - 2015 was adopted. The RES puts in place a framework within which objectives and policies will maximise the harvesting of renewable energy resources in a manner which is consistent with proper planning and sustainable development, in order to strike a balance between the provision of renewable energy developments and the preservation and conservation of the natural and built environment.

The adopted RES remains part of the Kerry County Development Plan 2015 – 2021, and it is a stated objective of the Council, specifically at page 124, **EP-11 Implement the Renewable Energy Strategy for County Kerry (KCC 2012)**.

The Grousemount site lies with the area categorised in the RES as Open-to-Consideration, which is described as follows:

*Site searches within these areas will identify sites with wind energy capacity and the environmental and infrastructural capacity to support wind development. They differ from Strategic Areas in that there are fewer suitable sites. It is recommended that during the site search process, developers consult with the planning authority. Again the capacity of these areas has limits and the cumulative impact of wind development in these areas will be monitored.*

The Strategic Objectives for the Open-to-Consideration area are as follows:

### Objective

*WE 6 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.*

### Objective

*WE 7 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. Any proposed development of on-shore wind adjacent to Natura 2000 sites will have to ensure a suitable buffer zone exists between the development and the Natura 2000 boundary. The Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (Site Code 004161) will require a buffer zone of at least 250 m between the SPA boundary and operating wind turbines.*

### Objective

*WE 8 Applications shall be accompanied by a Natura Impact Statement under Article 6 of the Habitats Directive if the site is located in close proximity to a (candidate) Special Area of Conservation or Special Protection Area or if the site is within the catchment*

*of a (candidate) Special Area of Conservation. Only proposals where a Habitats Directive Article 6 Assessment concludes that there will be no adverse effects on the integrity of Natura 2000 sites shall be permitted.*

### **Objective**

*WE 9 All applications must comply with the objectives and development standards of this strategy and the provisions of the Kerry county Development Plan 2009-2015. This will include requirements and considerations in relation to: landscape; cultural heritage; Natura 2000 sites and the Habitats & Birds Directive; the objectives of the Water Framework Directive; Flood Directive; electricity infrastructure; settlement patterns; and wind energy potential.*

### **Objective**

*WE 10 Applications for wind development shall be accompanied by a technical assessment in relation to the slope stability, landslide susceptibility of the development site and the proposed project. This assessment shall incorporate slope stability mapping and groundcover assessment in the context of potential cumulative effects arising from multiple developments and consider potential impacts on slope stability in relation to climate change impacts, particularly flash floods and changing weather conditions.*

The proposal for Grousemount Wind Farm is fully in compliance with the above Objectives, particularly given the existence of the two extant permissions on the site.

The proposed development is therefore in accordance with the relevant policies and objectives contained in the Kerry County Development Plan 2015 – 2021.

## **9.5 Rationale for the Project and Alternatives**

### **9.5.1 Need**

The rationale supporting this project has been outlined in the Chapter 2 and the contribution of this project to the delivery of national renewable energy targets has been outlined in Chapter 5.

### **9.5.2 Alternatives**

The application is primarily for a revision and amalgamation of the two extant planning permissions. Whilst the consideration of alternatives in **Chapter 5 of the EIS** has considered strategic alternatives (i.e. alternative generation methods and alternative sites), the main focus of alternatives has been in relation to the configuration and layout of the wind turbines.

The layout is significantly influenced by the extant permissions which and it remains largely unchanged. It is considered that the layout which is being proposed in this planning application is the optimal layout having regard the requirements of the project at this location.

## 9.6 Environmental Impact Statement (EIS)

A comprehensive EIS has been prepared. The main findings of the EIS are set out in Chapter 8 of this report. It is concluded that with the application of various mitigation measures, there are no impacts that are considered unacceptable within the context of the planning policy framework for assessing wind energy projects and also that the proposed wind farm is supported by Government policy regarding the promotion of renewable energy and is consistent with planning guidance for the development of wind energy.

## 9.7 Appropriate Assessment (AA) Screening Report

The AA screening report prepared as a separate document which can be found in **Planning Document and AA Screening Report – Volume 1 Statutory Particulars** concluded the following:

*Appropriate Assessment screening has been undertaken on the proposed Grousemount Wind Farm development, which includes a 110 kV underground Cable Circuit between the existing Ballyvouskill substation in County Cork and the permitted but as yet unbuilt Coomataggart 110 kV substation in County Kerry. The potential effects that may arise from construction and operation of the development on the Natura 2000 network have been examined by considering the Grousemount Wind Farm Appropriate Assessment Screening potential for significant effects, alone or in-combination with other projects, on eleven designated European sites that occur in the surroundings.*

*On the basis of the findings of this Screening for Appropriate Assessment, it is concluded that the project:*

- (i) is not directly connected with or necessary to the management of a Natura 2000 site, and*
- (ii) significant impacts on the Natura 2000 network are not foreseen.*

*Therefore, in accordance with Article 6(3) of the Habitats Directive, it is considered that a Stage 2 Appropriate Assessment is not required.*



## 10 Conclusions

Having regard to the following:

- a) national policy with regard to the development of sustainable energy sources;
- b) the Wind Energy Development Guidelines – Guidelines for Planning Authorities issued by the Department of the Environment, Heritage and Local Government in June, 2006;
- c) the character of the landscape in the area;
- d) the policies of the planning authority as set out in the Kerry County Development Plan 2015 - 2021 and the County Kerry Wind Strategy 2012;
- e) the policies of adjoining planning authority – Cork County Council;
- f) the distance to dwellings and other sensitive receptors from the proposed development;
- g) the Environmental Impact Statement and the Appropriate Assessment Screening Report;
- h) the general suitability of the site for a wind power electricity generating facility due to the wind resource available; and
- i) the planning history of the site including the permitted 38 wind turbines.

It is submitted that the need for the proposed development has been demonstrated and that, subject to compliance with the mitigation measures set out in the EIS and any conditions attached by An Bord Pleanála, the proposed development would not seriously injure the amenities of the area or of property in the vicinity, would not be prejudicial to public health or safety, would be acceptable in terms of traffic safety and convenience, would be acceptable in terms of visual amenity and would not be detrimental to the setting of any recorded archaeological monuments. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.