

RESPONSIBLE ENERGY FOR A SUSTAINABLE CLIMATE

DROMLEENA WINDFARM PROJECT



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PROJECT OVERVIEW



The proposed €10.3 million capital cost wind power project at Dromleena is composed of two clusters, covering the following townlands:

Cluster 1; 5 turbines, Dromleena

Cluster 2; 4 turbines, Derrynasafagh

The proposed location of the project is in two townlands to the west of Dunmanway, Co. Cork, specifically the townlands of Dromleena and Derrynasafagh. The project area consists mainly of heath. The total land take required for the proposed project is less than 2.25% of the study area, which is defined as the site boundaries of the properties involved in the project. Land use for all turbine bases will be 1290m², and approximately 2.9km of new tracks will be required and approximately 500m of upgraded track to provide access to the turbines.

The proposed wind farm is being developed by Organic Power Ltd., a new renewable energy company based in Skibbereen, Co. Cork. Organic Power intend to develop a minimum of 125MW of carbon-free reliable electricity supply from a variety of renewable energy sources for 2012. This power will be sold to end customers at a competitive rate.

PROJECT DETAILS

Power

- 9 Enercon wind turbines, each with a maximum generating capacity of 0.9MW totalling 8.1MW installed capacity
- Operating efficiency is projected at 37.5% of installed capacity, or minimum average output of 3.04MW
- Enough energy to power the equivalent of 3,325 households
- Will result in the avoidance of 18,000 tonnes of Carbon emissions annually
- Will contribute 0.675% of the Government's target of 15% of energy coming from renewable source by 2015 (1200MW).

Construction

- Work is planned to commence around early 2011 subject to permits, and will be completed in a work period around 9 to 12 months spread over 2 years.
- The wind farm has an operational life of 30 years. At the end of its life, the turbines will be dismantled and removed from the site or an application will be submitted to retain or replace the existing wind turbines

Site Selection

The wind farm site is regarded as a prime solution due to a combination of the following factors:

- High wind speed
- Close proximity to available grid capacity
- Turbines can be sited in compliance with Wind Industry recommendations and Planning requirements with respect to noise and other environmental factors
- Location of turbines near the existing roads minimises the impact of construction traffic
- Impact on internationally and nationally designated sites or landscapes are avoided

Grid Connection

Grid capacity is already available and the wind farm will be connected to the national grid at a location to be determined in consultation with Eirgrid. Organic Power will undertake to bury all cables required between this location and the turbines. This significantly reduces the potential environmental impacts associated with installation of the grid connection cabling. Organic Power are committed to locating connection cables underground.

The design strategy for the Wind Farm is based on the Best Practise Guidelines produced from the Irish Wind Industry, Sustainable Energy Ireland, and the Department of the Environment.

Wind Farm Design

The design of the wind farm takes into account the profile and form of the land when viewed from the surrounding area. The layout incorporates the relocation or removal of turbines and access tracks as well as other components to:

- reduce visual impacts from key viewpoints
- reduce noise impacts on residential properties
- increase distances from watercourse
- avoid key habitats of nature conservation interest and areas of archaeological interest
- increase distances from bird breeding locations
- minimise transport impacts

Consent Process

Cork County Council Planning Department will grant or refuse approval for the development once a planning application has been lodged.

An Environmental Impact Statement (EIS) accompanies the Planning Application. This document will be available for public viewing or purchase at Cork County Council and summaries of reports will be posted on www.organicpower.ie. It will outline the results of a series of studies that have assessed the potential environmental impacts of the project and where possible, have suggested measures to avoid, reduce or minimise these impacts.

Economic Benefits

The project will, at its peak, provide in excess of 40 jobs during the construction phase. The construction phase will be nine-twelve months spread over two years. At least 1 full time job will be created for the operation of the wind farm, and a further 2 full time or equivalent jobs to undertake the maintenance.

Landowners leasing land to the project will receive approximately €60,000 per year from the project. This is equivalent to the creation of 1 full time job in the locality for the duration of the wind project. The project will cost up to €10,530,000 to construct, of which, approximately €2,340,000 will be spent on infrastructure including foundations, roads, underground cabling and general building works.

It is Organic Power's policy to encourage local companies to tender for such work, and it proposes to hold a register of local companies wishing to tender. Organic Power will liaise with the local community associations and Business Associations in relation to this. During the operational phase approximately €117,000 will be spent each year on the general upkeep of the wind farm, which will include local employees.

Organic Power is setting up a Community Fund to enable the local community to benefit from the operation of the Wind Farm. Approximately €16,000 will be made available each year for five years for community projects.



Climate Change

Global climate change is widely recognised as being one of the greatest environmental challenges facing the world today. Jean Pascal Van Ypersele of the Intergovernmental Panel of Climate Change, the globally recognised authority on climate change has stated the following in May 2007:

- Climate Change is happening now, mostly as a result of human activities.
- Impacts will be felt everywhere, including cities, with most damages in developing countries.
- Together with lifestyle and behaviour changes, known technologies and policies can reduce Greenhouse Gas emissions.
- All sectors and regions have the potential to contribute to reductions

Some current examples of negative consequences of global warming are:

There is good evidence that the European heat wave of 2003, which resulted in 26,000 premature deaths, was influenced by global warming.

The numbers of people affected by floods worldwide has risen from seven million in the 1960's to 150 million today. Sea levels are predicted to rise as a result of global warming, increasing the suffering caused by local floods. If carbon emissions are stabilised, sea level will rise by 0.8m over the next two centuries, if not it could rise by 7m, (23 feet) due to melting of polar and Greenland ice sheets.

Long term drought in the Sahel, the land to the south of the Sahara in Africa, has resulted in the displacement of farmers from Chad, who are colonising land in Darfur, causing the current humanitarian crisis there.

Tropical storms, cyclones, typhoons, and hurricanes are increasing in frequency, speed of formation, and destructive power, due to increases in sea-surface temperature.

Global warming is real, deadly serious, man-made, and the greatest threat to common well being of our time.

Why reduce carbon emissions?

Climate change due to global warming is, and will be largely related to the atmospheric content of Carbon Dioxide and Methane, both of which are emitted at higher than natural levels by human activities. The scale of the consequences of warming is related directly to the levels of carbon in the atmosphere.

WHY DO WE NEED RENEWABLE ENERGY?

Why reduce carbon emissions cont.?

The following table shows some examples of the relative consequences of stabilising the carbon levels by reducing emissions now in order to stabilise levels at 450ppm, leading to an IPCC estimated 2.1 degree (range 1.9 to 4.4) temperature increase compared to continuing to increase emissions 750 ppm leading to an IPCC estimated 4.3 degree (range 2.8-6.4) temperature increase:

	REDUCED EMISSIONS	CONTINUED EMISSIONS
Sea Level 2300	+0.8m	+7m Irish coastal cities drowned
Summer temperature high Ireland 2100	30 degrees C	45 degrees C Cattle cannot survive in Ireland
Winter temperature low Ireland 2100	No change	Long cold spells below zero
Mediterranean holiday spots 2100	Forests burn in summer	Desert, no water
Gulf Stream 2100	Much reduced, Seawater temperature 10-15 degrees C	Stopped, Seawater temperature below 6 degrees C
Storms Ireland 2100	15% Increase in number and intensity	Regular severe hurricane style storms and floods
Food 2100	Droughts India, China, Africa	Worldwide food shortages
Climate Stability 2100	Stable	Self-reinforcing increase in temperature

Examples from 'Six Degrees' by George Lynas 2007

ENERGY

Energy is vital to the modern economy. Ireland is over 90% dependent on imported energy and is heavily reliant on imported oil, gas, and coal. Our small indigenous energy supplies continue to decline. A reliance on imported energy may make us more vulnerable to price fluctuations and interruptions of supply caused by political instability and conflict in other parts of the world.

In the first quarter of 2008 crude oil was trading at over \$120/barrel, and is forecast by the Association for the Study of Peak Oil to trade at €175 in one year's time. Currently world oil supplies are contracting by 3% per year, while demand is increasing by 3% (Mr. Eamonn Ryan TD, Minister for Energy, Communications and Natural Resources, Ireland, Dublin, 24th, July 2007). This means ever less quantity, and ever more expensive oil, our main source of energy in Ireland.

Nuclear energy, like oil burning, is also suffering contracting fuel supply due to an impending shortage of uranium due to the slow pace of uranium extraction, according to nuclear physicist Michael Dittmar of ETH Zurich (September 2007). This means that expanding energy production from nuclear sources will be extremely difficult and costly. Wave power is still, unfortunately, more than ten years away from commercialisation, so wind power remains Ireland's most likely solution for both energy-supply and global warming problems.

Renewable energy is playing an essential role in reducing our fossil fuel consumption, thereby reducing the emission of greenhouse gasses.

Ireland has a strong wind power resource, relative to other European countries, generally above 8.5m/s here, as compared to below 7 for most of the continent. The cost of generating electricity from wind has fallen dramatically over the past few years. At present, wind energy is the most cost effective renewable energy technology available. A mix of wind power with other renewable energy sources, such as biomass and Pumped Hydro Energy Storage (PHES), will be needed to meet Ireland's challenging targets on sustainable energy and climate change.

"Climate change and rising oil prices mean we have to reform the way we consider energy services. We can look at these challenges in a negative light or we can realise the potential that exists for sustainable economic growth that exists. Our aim now is to encourage the energy industry in Ireland in order to create the jobs of tomorrow. We have industry ready and waiting in the wings to take advantage of this new opportunity. Assisting them in this process will be a key priority of this Government." – Eamonn Ryan, Minister for Energy Communications and Natural Resources, Ireland, Dublin, 13th July 2007

Ireland's emissions are currently 80 million tonnes CO₂ (MTCO₂) per annum. To reduce this to meet agreed targets, we must reduce this by 17 MTCO₂. The target for renewables contribution to this reduction is 1.47 MTCO₂.

"Electricity generation from Renewable Sources provides the most effective way of reducing the contribution of power generation to Ireland's Greenhouse gas emissions. The government has therefore established ambitious targets for the contribution of renewables to power generation; 15% of electricity consumed will be from renewables in 2010 and 33% by 2020. Annual emissions savings of 1.47 MTCO₂ will be achieved on foot of the government's 15% target for 2010." – National Climate Change Strategy 2007.

The Dromleena wind project will mitigate approximately 18,000 tonnes of CO₂ per annum (based on actual aggregate emissions from the Irish Energy Sector for 2007) – the equivalent of 1.4% of the 2010 government target.

MEETING THE CHALLENGE

Public attitudes to wind energy

Dr Charles Warren of St Andrew's University School of Geography and Geosciences, Scotland published the findings of a study carried out in 2005 the perceptions and experiences of those with a wind farm in their 'backyard'. Several hundred people were interviewed at wind farm sites in the Scottish Borders and south west Ireland. Interviewees were asked about their reactions to the prospect of wind farms and how they actually reacted when they were put up. Respondents found no noise issues and regarded wind farms as attractive additions to the landscape.

The study uncovered similar attitudes in the Irish counties of Cork and Kerry, where 73% of respondents stated that their initial fears about wind farms were not realised. The survey revealed that people living near proposed wind farm sites were less supportive of the technology than those in close proximity to established wind farms. A large majority said their fears about wind farms had failed to transpire. Opponents tended to view the environment as locally conceived and about protecting their local surroundings.

Frequently asked questions

WHO ARE ORGANIC POWER? Organic Power is a company established in 2006 to develop non-polluting energy from a mix of renewable sources. The company favours local participation in shareholding where it has projects.

WHERE WILL THE POWER GO? The electricity generated from this project will be delivered underground from the turbines to a local substation and onto the national grid which passes through some of the townlands for the proposed erection of the turbines.

WILL THE TURBINES PRODUCE NUISANCE NOISE? The turbines are sited in such a way to result in a design noise level of at or below 40 decibels outside houses, which is a noise equivalent of agricultural tractor/excavator operating 400 metres away (Damian Brosnan, Noise Consultant 2007).

DO THE TURBINES DISTURB ANIMALS? Cattle, sheep, horses and wildlife, quickly become accustomed to wind-farms.

DO TURBINES KILL BIRDS? Except when located in migration paths of bird, bird kill from turbines is minimal, and is orders of magnitude less than bird kill arising from overhead cables and vehicles.

WILL THERE BE HEALTH IMPACTS FOR LOCAL RESIDENTS? To our knowledge, and that of Sustainable Energy Ireland, the Department of Health, and the Wind Energy Industry, there are no medically proven health hazards arising from properly designed and operated wind farms.

CAN I BUY ELECTRICITY FROM THE TURBINES? Yes, Organic Power will be selling the power at competitive prices, via the existing ESB network.

CAN I INVEST IN THE PROJECT? Yes, contact Sean Glasgow (+44 (0) 845 652 1789) for details.



Please circle one answer only

1. Do you agree that renewable energy projects can reduce global warming?

Strongly Agree Agree No Opinion Disagree Strongly Disagree

2. Do you think that a local renewable energy project is a good idea?

Strongly Agree Agree No Opinion Disagree Strongly Disagree

3. Do you think that a wind farm is compatible with this area?

Strongly Agree Agree No Opinion Disagree Strongly Disagree

4. Approximately €16,000 euro per year for a period of five years will be provided for a community fund from the earnings of the project in which of the following areas would you like to see this money invested? *(Please number in order of preference (1 best preferred, 5 least preferred))*

local playground facilities

broadband infrastructure

sports clubs

agricultural charity such as bóthar

(insert your own suggestion here).....

5. Other Comments

DROMLEENA QUESTIONNAIRE

*We appreciate your feedback. Please fill in the above survey and return to:
Organic Power, Old Station, Marsh Road, Skibbereen, Co. Cork. Thank you.*

CONTACT

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