



Figure 4. View from approximately 2 km North of the proposed development.

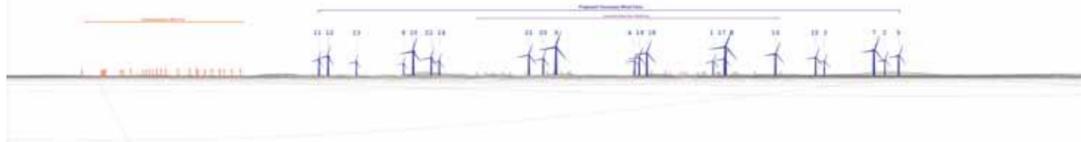


Figure 5. View adjacent to Clonbullogue Village – approximately 1.5 km from proposed development..



Figure 6. View adjacent to Croghan Hill – approximately 7 km from proposed development.

**Shadow Flicker:** At certain times of the year, when the sun is low on the horizon, wind turbine blades can cast moving shadows on the windows of houses in close proximity to the turbines. Generally residences further than 2 km away from a turbine are not affected by this. Shadow flicker will not be a problem with the Cloncreen Wind Farm, as periods of predicted occurrence are short and turbine controls will be used to eliminate any flicker impacts. This has been successfully demonstrated at the Mountlucas Wind Farm site.

**Telecommunications:** The wind farm has been designed to avoid interference with signals from the equipment used by mobile telecommunications operators. Any remedial measures for local television reception are likely to be relatively minor and will be agreed with signal suppliers prior to construction of the wind farm.

**Soils, Geology & Hydrogeology:** The potential impacts of the project on the geology and hydrogeology of the site are likely to be low. A detailed assessment of the construction process and the materials utilised, on both the surface waters draining from the site and the underlying groundwater, will be carried out. The operational phase of the project will have no impacts.

**Ecology:** The wind farm will take up only approximately 2% of the land area of the Cloncreen site. Its construction will not have any long term negative impacts on the habitats or locally occurring wildlife on the site. The wind farm will be managed to ensure that residual impacts post-construction will be negligible. Areas between the turbines and access trackways will be left to re-vegetate naturally, creating an integrated development that serves both renewable energy and biodiversity, wildlife and amenity objectives.

**Local Benefits**

Like any large scale development, the proposed Cloncreen Wind Farm will also provide a range of benefits to the local community. As part of the development, Bord na Móna is proposing three potential types of community benefit:

- Community Gain Scheme
- Near Neighbour Scheme
- Community Ownership Scheme

The detailed design of these community benefits, and how they might operate, will be discussed with members of the Cloncreen Community Engagement Forum.

**Further Information**

The Cloncreen Wind Farm will benefit from participation by all interested parties during each stage of the development. If you wish to make a comment, would like to visit Mountlucas Wind Farm or require further information about the Cloncreen Wind Farm please contact:

**Cloncreen Wind Farm Communications Team**

**Address:** Bord na Móna PowerGen  
Main Street,  
Newbridge,  
Co. Kildare.

**Tel:** (045) 439800

**E-mail:** Cloncreenwindfarm@bnm.ie

**Web:** www.bordnamona.ie

## Introduction

Bord na Móna plc is a 95% state – owned company, originally established in 1946 to develop on an industrial scale and manage on a commercial basis some of Ireland's extensive peat resources, in accordance with government policy at the time. Bord na Móna's lands extend to approximately 80,000 hectares in total and are located mainly in the Irish midlands. In 2011, Bord na Móna published a 'Strategic Framework for the Future Use of Peatlands', which reviews and assesses the land bank resource, identifies key issues and considers options for future land-use. The Strategy recognises that cutaway peatlands have significant potential for the development of wind energy as an integrated after-use.

## The Proposed Location

The proposed site for the wind farm is shown in Figure 1 below.



Figure 1 – Site Location Map

The proposed site, known as Cloncreen bog, is located to the north west of Clonbullogue, south of Ballyfore and south west of Edenderry. Bord na Móna has been involved in peat production operations at the site since the 1960s and parts of the bog are still in active peat production. Those areas of the site that are still in milled peat production today are expected to cease operations prior to the construction of the proposed wind farm.

Bord na Móna has conducted a detailed site selection exercise to identify the optimal site for the development of a large-scale wind energy project. The study examined a number of cutaway sites within the Bord na Móna land bank and found that Cloncreen Bog, located in east Offaly, was the optimal site for the proposed development. The company selected the site at Cloncreen for the following reasons:

- It has a wind regime that will support a commercially viable wind farm;
- There is close access to the national electricity grid;
- There is relatively good road access to the site;
- It is a brown field site, the majority of which is already at the end of peat production;
- It presents a clear expanse of land with no dwellings, and is a reasonable distance from existing houses around the periphery of the site;
- It is located in an area in which wind farm development is deemed by Offaly County Council to be 'Suitable for Wind Farms'.
- Wind farms are considered an appropriate after-use of cutaway peatland.

## The Proposed Project

The environmental assessment work at the site has shown that it is capable of accommodating approximately 75 Megawatts (MW) of installed generating capacity. The project will essentially comprise of 22 wind turbines. Apart from the turbines themselves, the other principal components of the wind farm are the foundations to support the turbine towers, access, crane hard-standings, underground cables between the turbines, an on-site electricity substation and an electrical connection to the appropriate node on the National Grid.

The exact type of turbine that will be used has not yet been finalised. However, in order not to underestimate any potential impacts, the largest physical dimensions of all of the wind turbines under consideration have been used to assess the visual impact of the project. The maximum turbine envelope has a blade tip height of 170m.

Only approximately 2% of the area of the site will be used for turbine bases, crane hard-standings and access tracks, so the vast majority of Cloncreen Bog will not be required by the development. This means that it can be utilised for other purposes, such as biodiversity, wildlife and amenity.

A grid connection application was made to Eirgrid for the Cloncreen site on the 27th May 2014. This application is for a potential installed capacity of 75 MW. The status of this application is currently 'on hold', pending clarification by the Regulator of the next round of connection offers. As part of the EIS, connection to the grid will be assessed within the overall planning application for the proposed wind farm.

When operational, the wind farm will generate enough electricity to supply the needs of approximately 43,000 homes. It is intended to submit the planning permission application directly to An Bord Pleanála, under the provisions of the Planning and Development (Strategic Infrastructure) Act 2006. An initial approach is therefore being made to An Bord Pleanála seeking a determination in relation to the SID status, or otherwise, of the proposed wind farm development.

## The Need for Wind Farm Capacity

Government policy has set a target for 40% of the electricity consumed in 2020 to be generated from renewable resources, within an overall renewable energy target of 16%. It is acknowledged that wind energy will provide the main component of Ireland's renewable electricity at that time. Looking beyond 2020, Ireland will have to meet even more demanding climate change and renewable energy supply obligations in order to play its part in achieving the European climate and energy ambitions. In addition, Ireland has one of the highest external dependencies on imported sources of energy, such as coal, oil and natural gas. The development of additional indigenous wind capacity will not only help to reduce carbon emissions but will also improve Ireland's security of energy supply.

## How Wind Turbines Operate

Almost all wind turbines producing electricity consist of vertical blades which rotate around a horizontal axis. Most modern wind turbines have three blades which face into the wind when extracting the energy needed to generate electricity. The blades are attached to a hub which is connected to a gearbox and generator, which are located inside a protective container which is known as a nacelle, where the electricity is made. A generator is a machine that produces electrical energy from mechanical energy, whereas an electric motor does the reverse.



Figure 2 – Image of a Typical Wind Turbine

An image of a typical wind turbine is included above in Figure 2, which shows the main elements that comprise a modern wind turbine. Many of the key working parts of a wind turbine are located in the nacelle at the top of the tower. A schematic of a wind turbine nacelle is shown below in Figure 3, with the key components labelled for easy reference.

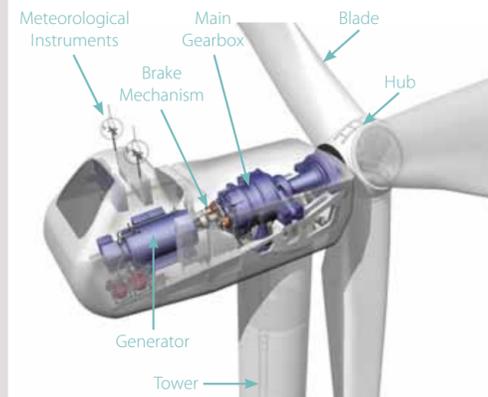


Figure 3 – Schematic of a Wind Turbine Nacelle

Tubular towers, which support the nacelle and rotor, are usually made of steel and taper from their base to the top. The entire nacelle and rotor are designed to swing around, or 'yaw', in order to face the prevailing wind and extract the maximum amount of energy.

A modern wind turbine is designed to produce high quality electricity whenever enough wind is available. Wind turbines can operate continuously, unattended, and with low maintenance, with a design life of over 20 years. They are highly reliable, with operating availabilities (the proportion of the time in which they could generate if wind conditions were suitable) of up to 98%. Few other electricity generating technologies offer a higher availability.

## Safety

Bord na Móna is fully committed to the health and safety of both its employees and its neighbours. The highest safety standards will be maintained during the construction and operation of the wind farm.

## Environment

Wind turbines cause virtually no emissions during their operation and very little during their manufacture, installation, maintenance and removal. Because the energy source is clean, indigenous, renewable and free, it is Government policy that wind generated electricity should be used to the maximum extent possible in the electricity system.

## Benefits of the development

The proposed Cloncreen Wind Farm will give rise to a range of benefits at different levels:

**At a National Level**, the new development will contribute to the generation capacity required to meet Ireland's commitment to increasing its renewable energy sources in the post-2020 period and in particular the production of renewable electricity. During operation the farm will obviate the need to generate the equivalent amount of electricity from fossil fuels, and it will therefore help to reduce total national greenhouse gas emissions. In doing so, it will reduce our dependence on external energy sources and help to improve our energy security of supply.

**At a Regional Level**, the new development will help to supply the rising demand for electricity, resulting from renewed economic growth in the Midlands region. During construction, additional employment will be created in the region through the supply of services and materials to the wind farm. In combination with other potential Bord na Móna enterprises, such as solar energy, it will help to secure the company's future as a sustainable energy supplier.

**At a Local Level**, it will ensure the continuity of enterprise and employment on the Cloncreen site well beyond the peat harvesting phase. It is expected that between 100 -120 jobs will be created during peak construction of the wind farm. Once in operation, the wind farm will support 6 – 8 long term, high quality technical jobs in operation and maintenance. Rates paid by the wind farm to Offaly County Council will support the provision of local services. In addition, a range of other benefits associated with the development of large-scale projects, will be provided to the community.



## Local Impacts

Extensive studies are underway to assess the impact of the proposed development on the local environment. The main topics being addressed include:

- Human beings and material assets
- Ecology
- Noise levels
- Traffic
- Landscape and visual impact
- Soils, geology and hydrogeology
- Hydrology
- Cultural heritage and archaeology
- Air quality and climate

The impacts on the local environment, and the proposed mitigation measures, will be included in an Environmental Impact Statement (EIS) which will form part of the planning application for the project. Whilst wind energy is a clean technology, there are a number of environmental impacts that need to be assessed. The main issues include:

### Human Beings and Material Assets – including property:

The construction phase of the development will have a positive impact on local businesses in surrounding towns and villages, due to increased demand for goods and services. A large proportion of the stone required for construction of the access trackways, and concrete required for turbine foundations and other structures, will be sourced within the local economy, increasing demand and economic activity. There will be increased traffic during construction, but traffic levels due to operation and maintenance will not be distinguishable from existing normal levels. The residual impact of wind farms on property values has been the subject of many peer reviewed studies internationally. None of these studies have shown any sustained negative impact on property prices.

**Noise:** The Department of the Environment, Heritage and Local Government in 2006 published "Wind Farm Planning Guidelines" which set noise limits detectable at dwellings adjacent to wind energy developments. The limits were 45 dB (A), or a maximum increase of 5 dB (A) above background noise during the day; and 43 dB (A) at night-time. The recently published draft revision of the guidelines indicates that the noise limit is going to be reduced to 40 dB (A). Our noise monitoring work carried out as part of the EIS will demonstrate that the proposed turbine layout will be within the new draft guidelines 40 dB (A) limit value. All houses are greater than 700 metres from any of the proposed wind turbine locations.

**Visual:** An indication of the scale of the development can be obtained from the photomontages shown in Figures 4, 5 and 6. Estimation of the visual impact of a wind farm on the landscape is generally based on the visual presence of the farm, the aesthetic impact of the wind farm on its landscape context and the significance of the impact. For some local residents, both the proposed Cloncreen development and the existing Mountlucas Wind Farm will be visible. Landscape specialists will assess the cumulative impact of the proposed wind farm in conjunction with other existing and proposed wind farms in the area.