BORD NA MÓNA
Naturally Driven

April 2021

Proposed Littleton Wind Farm

Introduction

Bord na Móna is an iconic commercial semi-state company that was established almost 90 years ago to develop Ireland's peat resources for the economic benefit of Ireland and to enhance security of energy supply. In recent times, the business has gone through radical change, announcing the new "Brown to Green" strategy, moving away from peat, and focusing on renewable energy, recycling, and peatland rehabilitation operations. A key objective of this strategy involves using the land to continue to underpin Ireland's energy independence by developing green, sustainable energy sources to assist with Ireland's commitment to achieve 70% renewable electricity by 2030.

Bord na Móna is committed to investing to deliver low carbon energy solutions in Ireland, thereby continuing its pivotal role in contributing to the State's energy security. To achieve this Bord na Móna will significantly increase its existing renewable energy asset base beyond the current installed capacity of almost 400 MW.

The company has been a leader in the Irish renewables sector for some time, having been involved in the development of Ireland's first ever commercial wind farm on its Bellacorick Bog in Co Mayo in 1992.

As part of the company's Brown to Green Strategy, Bord na Móna has identified Littleton Bog Group as having the potential for the development of a wind farm.

The Proposed Development - Littleton Wind Farm

The Development Study Area (as shown in Figure 1 below) for the proposed wind farm is part of the Littleton Bog Group located in County Tipperary. This Bog Group is close to the communities of Gortnahoe, Littleton, New Birmingham, Twomileborris and Urlingford.

As the project is at an early stage, the height and number of turbines has not yet been determined but it is envisaged that the development could be of similar scale to our existing Bruckana Wind Farm located in counties Kilkenny, Laois and Tipperary.

The development of a wind farm on this Bog would continue the long tradition of energy production in a new increasingly sustainable form and underpin Bord na Móna's move away from its traditional 'brown' generation to a more sustainable 'green' future. The electricity generated by the turbines would be transmitted directly onto Ireland's National Grid which is managed by EirGrid for distribution around the country.

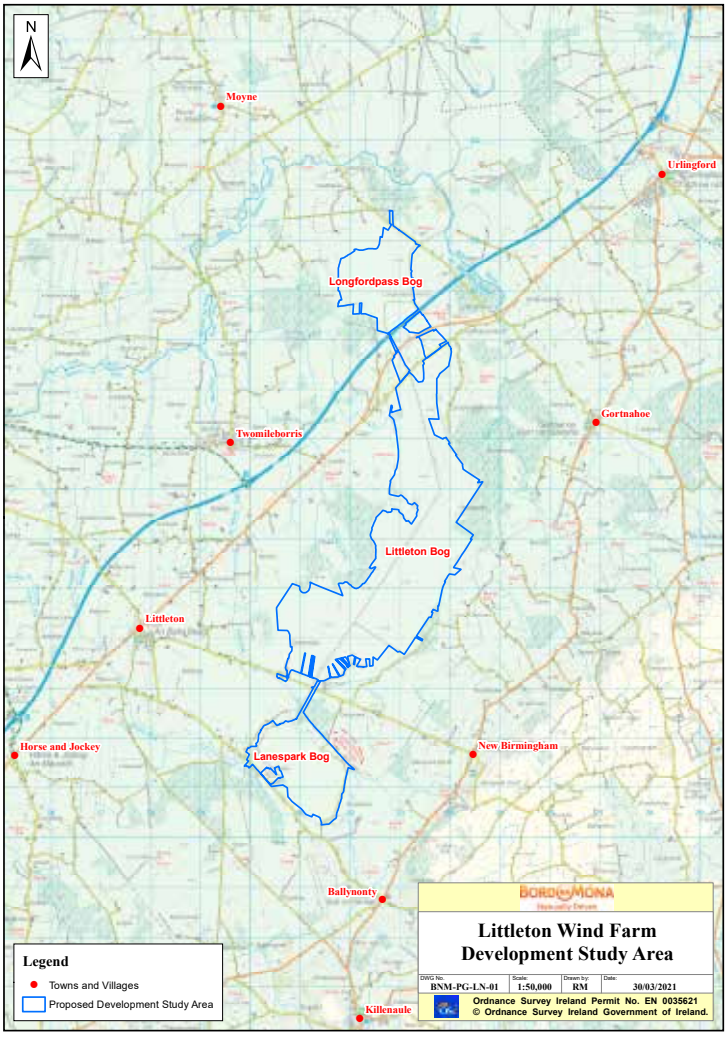


Figure 1: Study Area for proposed Littleton Wind Farm

Bord na Móna's peatlands offer a number of advantages for the development of onshore wind farms, which include:

- Significant scale, and are present in large blocks
- Industrial, brown-field sites, suitable for redevelopment
- Open, unenclosed landscapes with good wind characteristics
- Linked by rail or road passageways, suitable for cable connection
- Generally flat and well drained, with minimal dangers of land slippage
- Proven delivery of this type of development, as demonstrated by Bruckana, Mountlucas and Oweninny Wind Farms.

Irish Government Policy on Renewable Energy

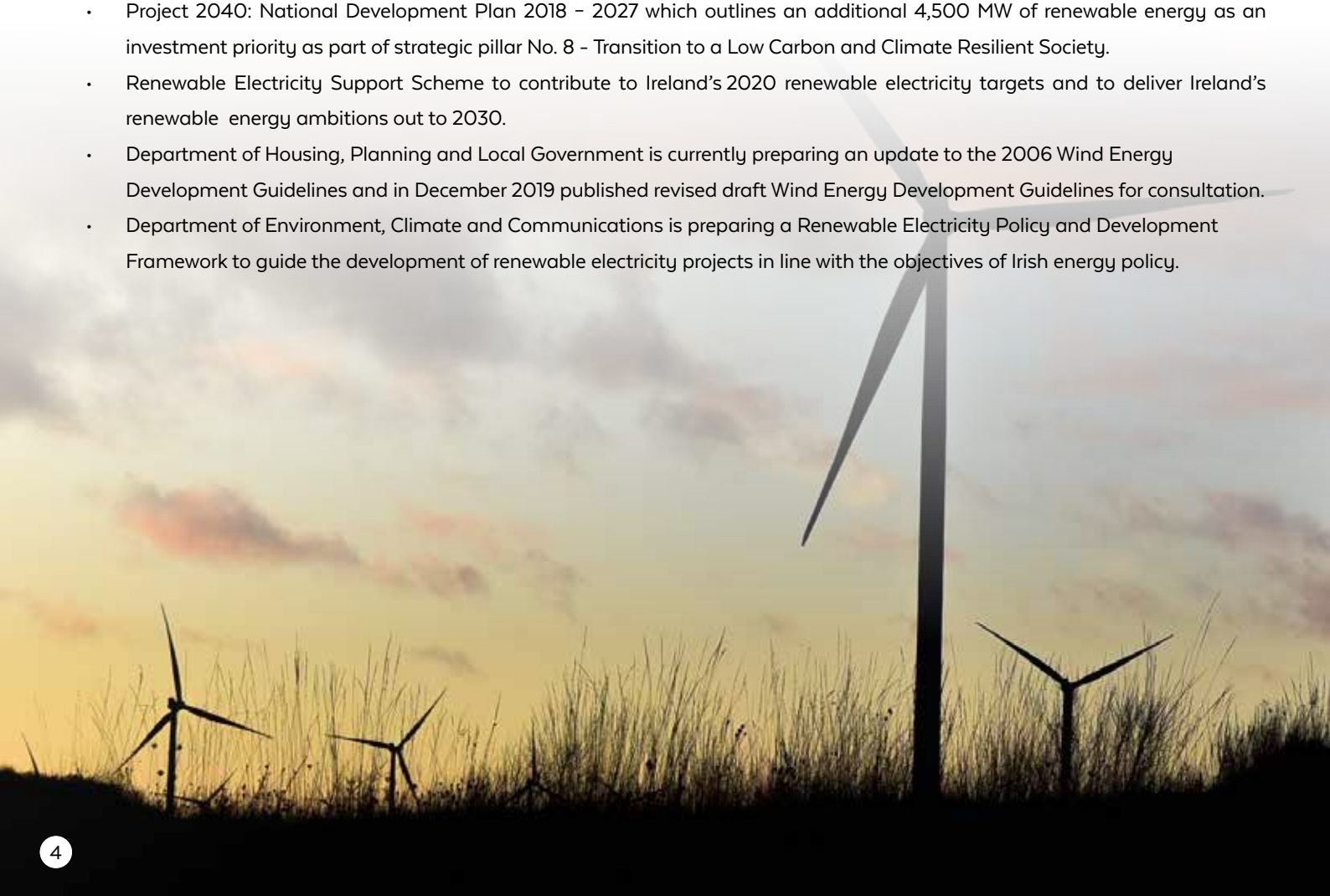
Successive Governments have been developing policy to chart a course towards ambitious decarbonisation targets for Electricity, Transport, Built Environment, Industry and Agriculture.

In March 2019, the Joint Oireachtas Committee on Climate Action published its cross-party report entitled, Climate Change: A Cross-Party Consensus for Action, which set out 42 priority recommendations in the area of climate action, including a target for 70 percent renewable electricity.

The Programme for Government 2020 details how energy will play a central role in the creation of a strong and sustainable economy over the next decade. The reliable supply of safe, secure and clean energy is essential in order to deliver a phase-out of fossil fuels. We need to facilitate the increased electrification of heat and transport. This will create rapid growth in demand for electricity which must be planned and delivered in a cost-effective way.

The Irish Government supports the use of Ireland's wind resources to meet our renewable energy targets. Outlined below is some of the most recent relevant Irish Government Policy:

- Energy White Paper entitled Ireland's Transition to a Low Carbon Energy Future 2015-2030.
- Climate Action and Low Carbon Development Act 2015 as a landmark national milestone in the evolution of climate change policy in Ireland. The purpose of the act is pursuing the transition to a low carbon, climate resilient and environmentally sustainable economy.
- The Climate Action Plan 2019: This plan identifies how Ireland will achieve its 2030 targets for carbon emissions, and puts the country on a trajectory to achieve net zero carbon emissions by 2050. The plan outlines that Ireland will move to 70% renewable electricity by 2030. The Government will be bringing forward the Climate Action (Amendment) Bill, this will ensure the Climate Action Plan is made into law.
- Project 2040: National Development Plan 2018 – 2027 which outlines an additional 4,500 MW of renewable energy as an investment priority as part of strategic pillar No. 8 - Transition to a Low Carbon and Climate Resilient Society.
- Renewable Electricity Support Scheme to contribute to Ireland's 2020 renewable electricity targets and to deliver Ireland's renewable energy ambitions out to 2030.
- Department of Housing, Planning and Local Government is currently preparing an update to the 2006 Wind Energy Development Guidelines and in December 2019 published revised draft Wind Energy Development Guidelines for consultation.
- Department of Environment, Climate and Communications is preparing a Renewable Electricity Policy and Development Framework to guide the development of renewable electricity projects in line with the objectives of Irish energy policy.



Need for Wind Energy

Wind farms produce renewable electricity and assist in the offset of carbon emissions including those arising from other sectors, such as agriculture. The proposed project will contribute to both Ireland's and the European Union's renewable energy targets. It will also contribute to increasing the security of Ireland's energy supply and will facilitate a higher level of energy generation and self-sufficiency.

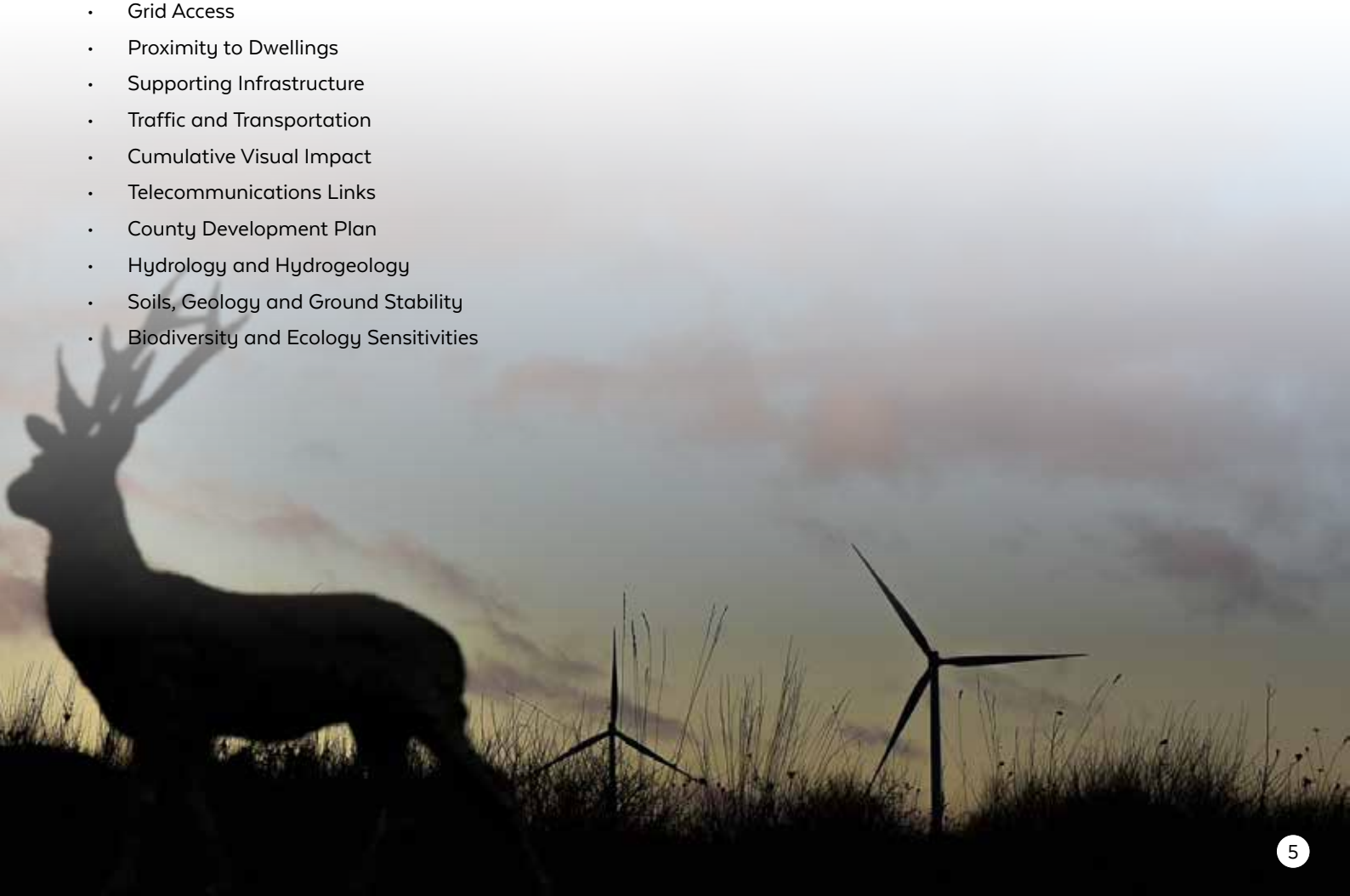
In March 2019, the Government announced a renewable electricity target of 70% by 2030. It is acknowledged that wind energy will provide the main component of Ireland's renewable electricity at that time. The proposed development is likely to be operational before 2030 and would therefore contribute to this 2030 target.

The Climate Action Plan 2019 (CAP) was published on the 1st of August 2019 by the Department of Environment, Climate and Communications. The CAP sets out an ambitious course of action over the coming years to address the impacts which climate may have on Ireland's environment, society, economic and natural resources. This Plan clearly recognises that Ireland must significantly step up its commitments to tackle climate disruption. The CAP identifies a need for 8.2GW of onshore wind generation. The CAP presents clear and unequivocal support for the provision of additional renewable energy generation and presents yet further policy support for increased wind energy.

Site Selection

In selecting a site for a wind farm development there are a number of criteria that must be considered. Based on these criteria some sites are more suitable for wind farms than others. The main criteria that we consider include:

- Noise
- Aviation
- Grid Access
- Proximity to Dwellings
- Supporting Infrastructure
- Traffic and Transportation
- Cumulative Visual Impact
- Telecommunications Links
- County Development Plan
- Hydrology and Hydrogeology
- Soils, Geology and Ground Stability
- Biodiversity and Ecology Sensitivities



Wind Stats - Did you know?

16%

In 2020, wind energy covered 16% of the EU's electricity demand.

Installed Wind Energy Capacity in Republic of Ireland

4,255 MW

36.3%

In Europe, Ireland had the second highest share of wind in its electricity demand in 2020 - 36.3% (according to Wind Energy Ireland)

1992

Year Ireland's first commercial wind farm was commissioned at Bellacorick, Co. Mayo.

10,729,500 MWh

Total amount of electricity generated by wind in Ireland in 2020.

220,000 MW

At the end of 2020, Europe had 220,000 MW of wind energy capacity installed

169 MW

Installed capacity of Ireland's largest wind farm in Co. Galway

4,471 MW

New All Ireland Wind Record was set on 12th February 2021.

€37bn

Wind contributes €37bn to EU GDP. Each GW of onshore wind that Europe builds supports around 5,000 jobs in planning, manufacturing and installation.

Source: Wind Energy Ireland Annual Report 2020 / Wind Energy in Europe - 2020 Statistics and the outlook for 2021-2025 / Eirgrid Smart Dashboard 2021

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 in turn is connected to a generator by means of a gearbox or direct drive mechanism, which are located inside a protective container called a nacelle. This is where the electricity is made. As the blades are turning, they spin the generator to create electricity. A generator is a machine that produces electrical energy from mechanical energy, whereas an electric motor does the reverse.

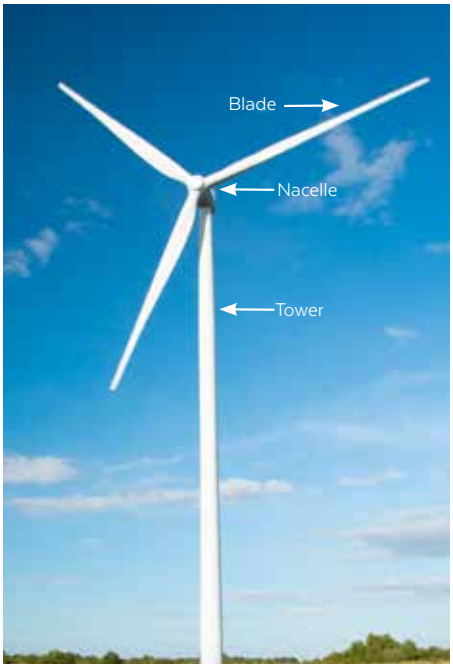


Figure 2 – Image of a Typical Wind Turbine

The nacelle is the large box at the top of the tower where all the main electrical components are located. Figure 2 shows an image which depicts the main elements of 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 and their enclosure within the nacelle reduces noise from the turbine. A schematic of a wind turbine nacelle is shown in Figure 3, with the key components labelled for easy reference.

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.

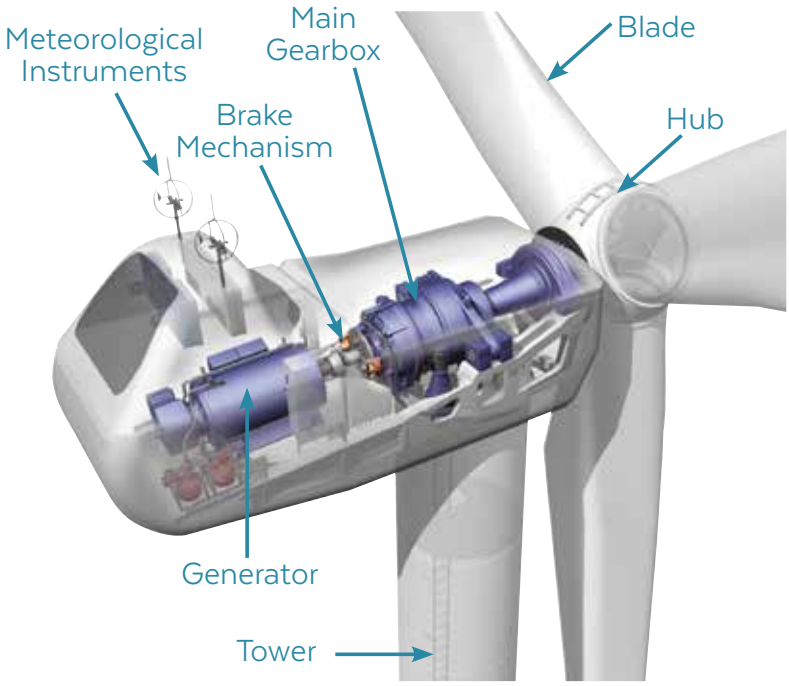


Figure 3 - Schematic of a typical Wind Turbine nacelle

Draft Revised Wind Energy Development Guidelines in Ireland

In 2019, Revised Wind Energy Development Draft Guidelines were issued for public consultation. Key aspects of these Draft Guidelines included:

1. Noise Limits

Noise restriction limits consistent with World Health Organisation standards are proposed. The noise limits will apply to outdoor locations at any residential or noise sensitive properties.

2. Visual Amenity Setback

A visual amenity setback distance, of 4 times the tip height, between a wind turbine and the nearest residential property is proposed, subject to a mandatory minimum setback of 500 metres.

3. Shadow Flicker

It is proposed that technology and appropriate modelling at design stage is adopted to eradicate the occurrence of shadow flicker and must be confirmed in all planning applications for wind energy development.

4. Consultation Obligations

Planning applications must contain a 'Community Report' prepared by the applicant which will specify how the final proposal reflects community consultation and the steps taken to ensure that the proposed development will be of enduring economic benefit to the communities concerned and demonstrate adherence to community engagement codes of practice.

5. Grid Connection

From a visual amenity aspect, undergrounding of cable connections from wind farms to the transmission and distribution system is the most appropriate solution, except where specific ground conditions or technical considerations make this impractical.

6. Community Dividend

Wind farm developers will also be required to take steps to ensure that the proposed development will be of enduring economic benefit to the communities concerned.

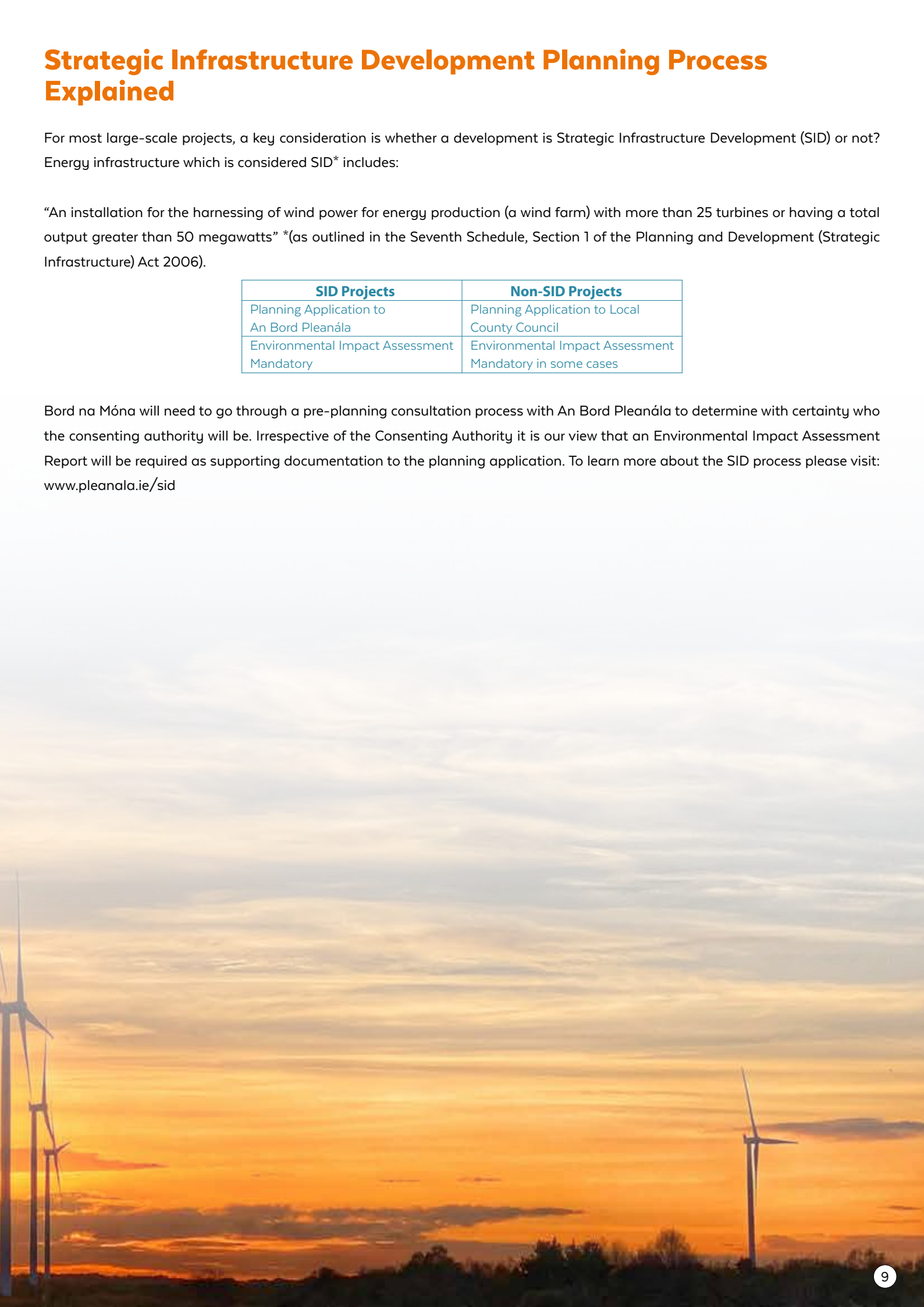
Strategic Infrastructure Development Planning Process Explained

For most large-scale projects, a key consideration is whether a development is Strategic Infrastructure Development (SID) or not? Energy infrastructure which is considered SID* includes:

"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 megawatts" *(as outlined in the Seventh Schedule, Section 1 of the Planning and Development (Strategic Infrastructure) Act 2006).

SID Projects	Non-SID Projects
Planning Application to An Bord Pleanála	Planning Application to Local County Council
Environmental Impact Assessment Mandatory	Environmental Impact Assessment Mandatory in some cases

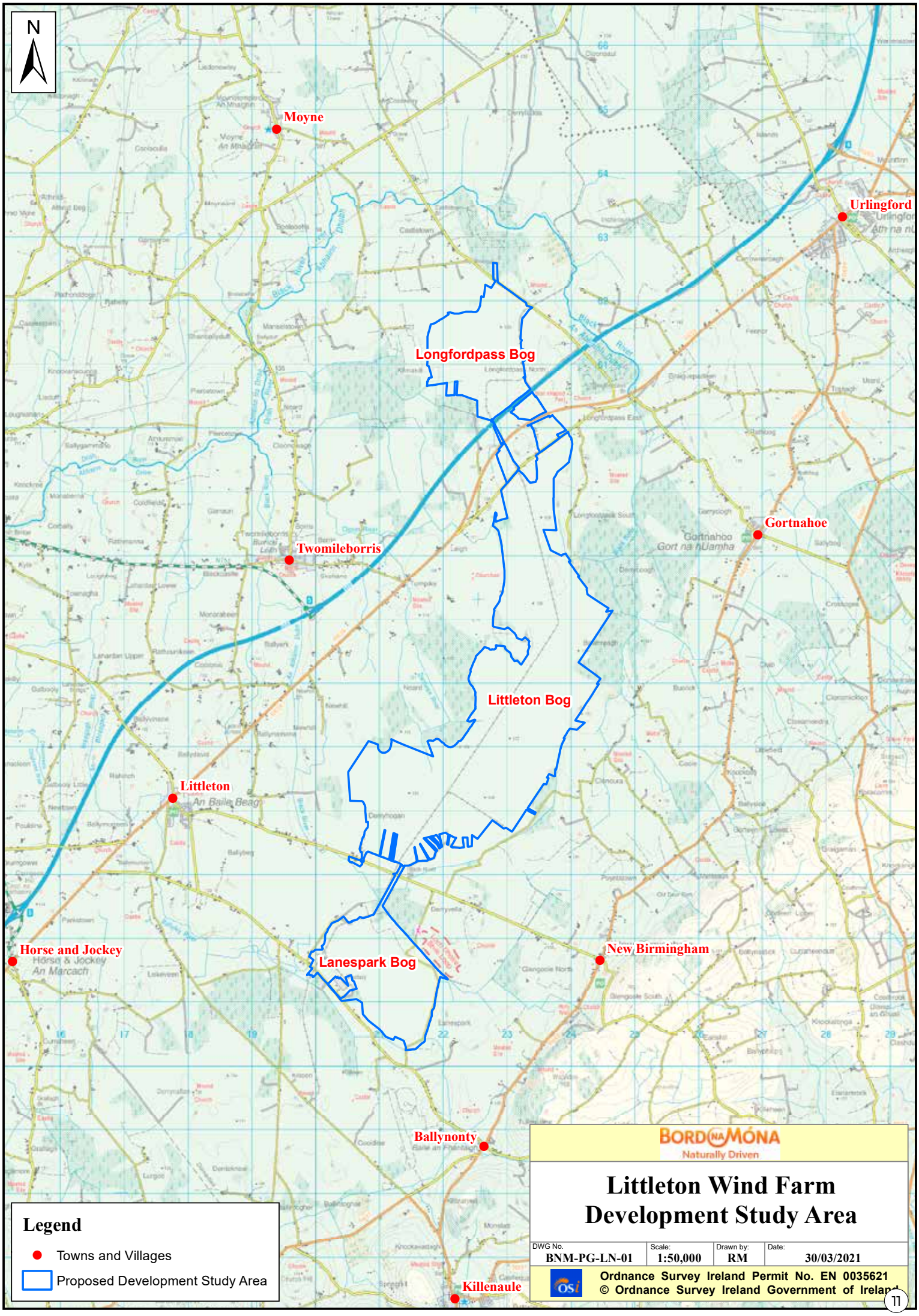
Bord na Móna will need to go through a pre-planning consultation process with An Bord Pleanála to determine with certainty who the consenting authority will be. Irrespective of the Consenting Authority it is our view that an Environmental Impact Assessment Report will be required as supporting documentation to the planning application. To learn more about the SID process please visit: www.pleanala.ie/sid



What is included in an Environmental Impact Assessment Report (EIAR)?

Due to the nature and scale of the proposed development an Environmental Impact Assessment (EIA) of the proposed development will need to be carried out. As part of this process, an environmental baseline for the proposed development site will be established through fieldwork and other baseline surveys.

All of this information will be described and documented in an Environmental Impact Assessment Report (EIAR) (formerly known as an Environmental Impact Statement (EIS)) which will accompany the planning application documentation submitted to the appropriate Consenting Authority for consideration. The EIAR will comprise the following chapters as a minimum:


N
Moyne
Urlingford
Longfordpass Bog
Gortnahoe
Twomileborris
Littleton Bog
Littleton
An Baile Beag
Horse and Jockey
An Marcach
Lanespark Bog
New Birmingham
Ballynonty
Killenaule
Legend
Towns and Villages
Proposed Development Study Area
BORD NA MÓNA
Naturally Driven
Littleton Wind Farm
Development Study Area
DWG No. BNM-PG-LN-01
Scale: 1:50,000
Drawn by: RM
Date: 30/03/2021
Ordnance Survey Ireland Permit No. EN 0035621
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Landscape and Visual Impact Assessment

A typical tool utilised in the assessment of the visual impact of a wind farm is a Photomontage. Photomontages are visualisations that superimpose an image of a proposed development upon a photograph or series of photographs and are used to illustrate the potential impact of a development on the existing landscape. A number of photomontages will be created as part of the Landscape and Visual Impact Assessment (LVIA) for the proposed wind farm.

Photomontages were produced as part of the LVIA for Mountlucas Wind Farm during the planning application process. A comparison of one of the photomontages generated for the LVIA, and a photograph taken from the same location post construction, is shown below. It illustrates the effectiveness and accuracy of this tool when applied to this type of development. Samples of the photomontages which will form part of the LVIA for this proposed development will be provided at the next round of Community Information Sessions.

Figure 4 - Comparison of Mountlucas Wind Farm photomontage and real photograph taken at same location

Benefits of the Development

The proposed development will give rise to a range of benefits at different levels:

At a Local Level, benefits arising from the construction and operation of the proposed wind farm will include:

- Community Benefit Fund.
- 80 to 100 jobs at peak construction.
- Substantial rates paid to the relevant Local Authority.
- Upgrading of the road infrastructure in the vicinity of the wind farm (as required).
- Payment of taxes from the project, and dividends from Bord na Móna to the State.
- Supporting a number of long term, high quality technical jobs in operations and maintenance.
- Indirect employment created through the sub-supply of a wide range of products and services.

At a Regional Level, the new development will help to supply the rising demand for electricity, resulting from renewed economic growth in the Mid-West region. During construction, additional employment will be created in the region through the supply of services and materials to the wind farm.

At a National Level, the new development will play a significant role in contributing to the country's national renewable electricity production and carbon emissions reduction targets by 2030, while also supporting a growing economy and population. During operation, the wind farm will eliminate 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, help improve our energy security of supply and make a major contribution to Ireland's Climate Action Plan 2019, which has set a target of 8.2GW of onshore wind capacity by 2030.

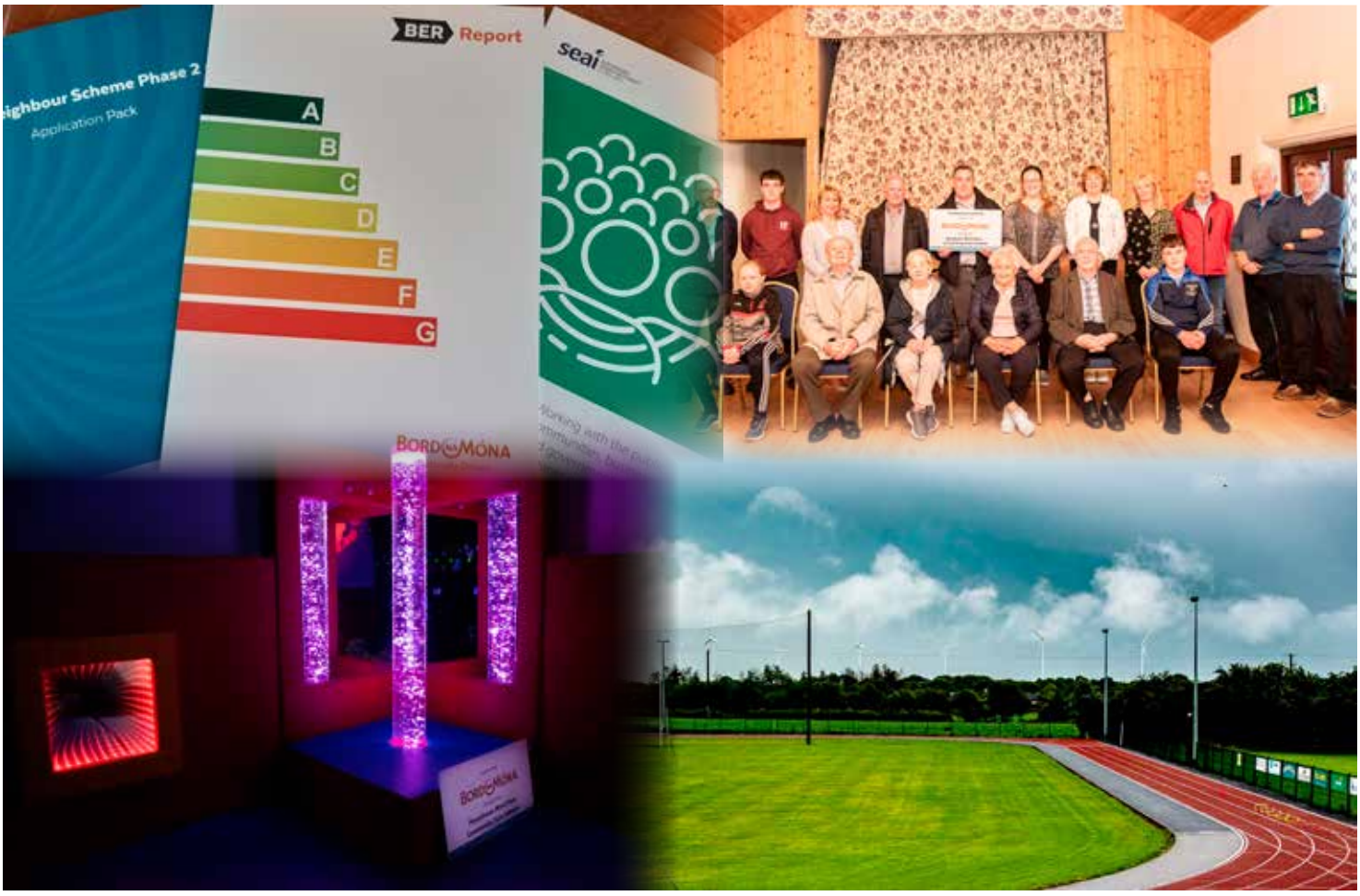

Figure 5 - Various examples of community benefit projects supported by Bord na Móna Wind Farms

Potential Wind Farm Recreational Facilities

Public Walkway - Cycleway

Bord na Móna began commercial operation of its Mountlucas Wind Farm in 2013. The site consists of a 10km walkway / cycleway around the wind farm in addition to interpretative signage, outdoor exercise equipment and a learning hub which is utilised by various school & college groups for educational purposes and day trips.

The wind farm is generally accessible all year round – free of charge with onsite parking facilities at both the Northern and Eastern access points.

In 2020 the wind farm had over 45,000 visits to its amenity facilities and it is hoped to incorporate similar amenities as part of the proposed Littleton Wind Farm.

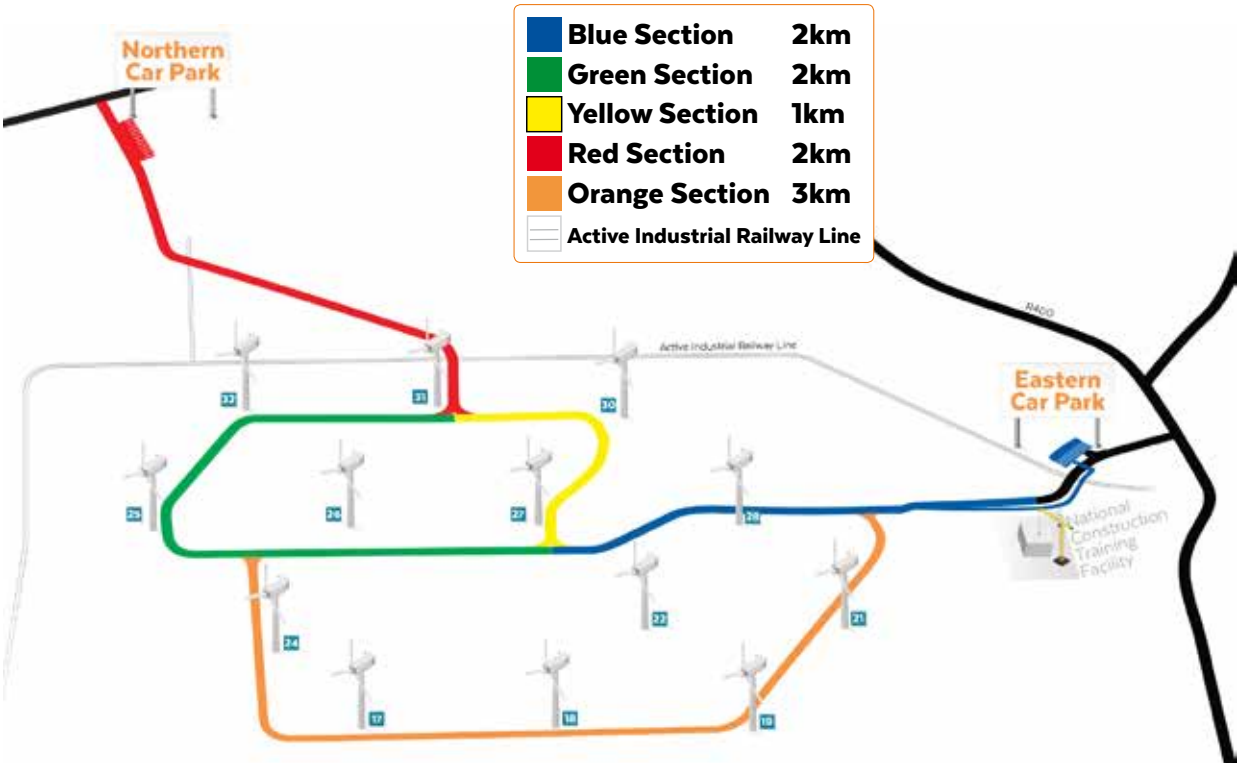

Figure 6 - Map of Mountlucas Wind Farm highlighting the 10km walkway/cycleway routes

Community Engagement

1st Public Consultation: Spring/Summer 2021 – Consultation Sessions
2nd Public Consultation: Autumn/Winter 2021 – Draft Layout Consultation Sessions

Bord na Móna understand the importance of community engagement at every stage of the proposed Littleton Wind Farm development process. We are constantly updating and adapting our communications channels to ensure the public are informed about the proposed development. This means continuing to use our traditional methods of communication in addition to a number of interactive online tools to ensure we engage on an ongoing basis through:

- A Virtual Consultation Room
- Online Feedback Questionnaires
- Virtual Meetings via Zoom or Teams
- Community Engagement Clinics (by appointment)
- Community Liaison Officer - House to House visits*
- Dedicated project website – **www.littletonwindfarm.ie.**

***Subject to Covid-19 restrictions.**

Virtual Consultation Room

As part of our Community Engagement activities, we have launched a 'Virtual Consultation Room'. The Virtual Room is set-up in a similar style to our traditional public consultation events which we are currently unable to hold due to Covid-19. The Room contains information about the proposed Littleton Wind Farm in an interactive format. Please feel free to visit the Virtual Consultation Room which can be accessed via our website **www.littletonwindfarm.ie.**

Community Engagement Clinics

Subject to Covid-19 restrictions, Bord na Móna intend to hold Community Engagement Clinics in the locality in the coming months. In order to ensure the safety of both our employees and members of the public due to Covid-19, and that all social distancing requirements and Government health guidelines are adhered to, these Community Engagement Clinics will be held in by appointment only. If we are not in a position to hold these Clinics in person, we will endeavor to hold them virtually via Zoom or Teams.

If you would like to find out more about the Clinics and provisionally book an appointment, please contact the projects Community Liaison Officer Colm on 087-4143305. Alternatively, you can visit the dedicated project website: **www.littletonwindfarm.ie.** and complete the expression of interest form on the website.

Frequently Asked Questions

1. How many turbines are proposed for the development?

As the project is at an early stage the number and location of turbines has not yet been determined.

2. What is the size of the proposed development study area?

The development study area totals approximately 1,020 hectares and it is envisaged the wind farm may be of similar scale to our Bruckana Wind Farm located in counties Kilkenny, Laois and Tipperary.

3. Where will the power from the proposed wind farm go?

The electricity generated by the turbines would be transmitted directly onto Ireland's National Grid which is managed by EirGrid for distribution around the country. The proposed development will also make a significant contribution to Irelands Climate Action Plan 2019, which has a set a target of 8.2GW of onshore wind capacity by 2030.

4. What works are the project team currently undertaking?

Over the coming months, in order to determine the extent of the proposed development Bord na Móna will undertake a number of on-site surveys on Littleton Bog Group, such as ecology surveys, ornithology surveys, aquatic surveys, heritage surveys and site investigation works. Additionally, the company will also commence a series of off-site surveys, such as noise monitoring at sensitive receptors around the site and topographical surveys of the proposed grid connection and proposed haul routes.

5. What Information will be provided at the next stage of public consultation which is planned for Late 2021?

The draft wind turbine layout will be available at the second round of public consultations and will provide detail on the setback distance, location, height and number of proposed turbines. Information will also be provided on the proposed substation location for the development. The project team will also have a subset of Photomontages available that will show what the proposed development may look like from the area. For more information on Photomontages please refer to page 12.

How you can Get in Touch


Colm

Call our Community Liason Officer - Colm:

Colm is available to discuss residents' queries or concerns in relation to the proposed development. Please feel free to contact him by phone or email to enquire about any aspect of the project or request a call back.

Call Colm on: 087 4143305 (9 a.m. to 5 p.m. Monday to Friday) or email: **littletonwindfarm@bnm.ie**

Join our Mailing List:

Keep informed of all project updates by signing up to our project mailing list. Please visit our dedicated project website to complete the sign-up form: **www.littletonwindfarm.ie**

Request a Call Back:

Visit our project website **www.littletonwindfarm.ie** to request a call back

Email us:

Email: **littletonwindfarm@bnm.ie**

Write to us:

Littleton Wind Farm Communications Team, Bord na Móna, Main Street, Newbridge, Co. Kildare

About Bord na Móna

Bord na Móna is an iconic Irish company operating five business units – Renewable Energy, Resource Recovery, Land & Habitats, Consumer Products and New Business. Over 80 years ago, Bord na Móna was established to develop Ireland's peat resources for the economic benefit of Ireland. Ireland's urgent need to support positive climate action measures means the company is now managing its land in a very different way.

As part of its Brown to Green Strategy, Bord na Móna is implementing an extensive peatland rehabilitation programme and expanding its low carbon operations as well as its Resource Recovery and recycling business. A key objective of this strategy involves using the land to continue to underpin Ireland's energy independence by developing green, sustainable energy sources to assist with Ireland's commitment to achieve 70% renewable electricity by 2030.

The company is rapidly decarbonising and as it does it is building a new, more sustainable business and rural economy. Bord na Móna has a strong record of siting, designing and delivering wind farms within its cutaway peat lands, such as Bellacorick, Bruckana, Mountlucas and Oweninny Wind Farms.

Overview of Bord na Móna Renewable Energy Projects*

*correct as of time of print, 1st April 2021.

Overview of Bord na Móna Renewable Energy Projects*

*correct as of time of print, 1st April 2021.

1 Project Name: Oweninny Wind Farm Phase 1 (Joint Venture with ESB)
Location: County Mayo
Project Stage: Operational (2019)
Installed Capacity: 93 MW
No. Turbines: 29
Overall Blade Tip Height: 176 metres
website: www.oweninnywindfarm.ie

2 Project Name: Oweninny Wind Farm Phase 2 (Joint Venture with ESB)
Location: County Mayo
Project Stage: Construction
Proposed Maximum Export Capacity: 83MW
Proposed No. Turbines: 31
Proposed Overall Blade Tip Height: 176 metres
website: www.oweninnywindfarm.ie

3 Project Name: Cloncreen Wind Farm
Location: County Offaly
Project Stage: Construction
Proposed Maximum Export Capacity: 100MW
Proposed No. Turbines: 21
Proposed Overall Blade Tip Height: 170 metres
website: www.cloncreenwindfarm.ie

4 Project Name: Proposed Derryadd Wind Farm
Location: County Longford
Project Stage: Consented
Proposed Maximum Export Capacity: 96 MW
Proposed No. Turbines: 24
Proposed Overall Blade Tip Height: 185 metres
website: www.derryaddwindfarm.ie

5 Project Name: Proposed Derrinlough Wind Farm
Location: County Offaly
Project Stage: Planning
Proposed Maximum Export Capacity: 85 MW
Proposed No. Turbines: 21
Proposed Overall Blade Tip Height: 185 metres
website: www.derrinloughwindfarm.ie

6 Project Name: Proposed Ballivor Wind Farm
Location: Counties Meath and Westmeath
Project Stage: Pre-Planning
Proposed Maximum Export Capacity: 100MW
Proposed No. Turbines (draft layout): 26
Proposed Overall Blade Tip Height (draft layout): 200 metres
website: www.ballivorwindfarm.ie

7 Project Name: Timahoe North Solar Farm (Co-Development Agreement with ESB)
Location: County Kildare
Project Stage: Consented
Proposed Installed Generating Capacity: 70 MW

8 Project Name: Proposed Cuil na Móna Renewable Gas Facility
Location: County Laois
Project Stage: Consented

9 Project Name: Bruckana Wind Farm
Location: Counties Tipperary/Laois/Kilkenny
Project Stage: Operational (2014)
Installed Capacity: 42 MW
No. Turbines: 14
Overall Blade Tip Height: 150 metres
website: www.bruckanawindfarm.ie

10 Project Name: Mountlucas Wind Farm
Location: County Offaly
Project Stage: Operational (2014)
Installed Capacity: 84 MW
No. Turbines: 28
Overall Blade Tip Height: 150 metres
website: www.mountlucaswindfarm.ie

11 Project Name: Sliabh Bawn Wind Farm (Joint Venture with Coillte and Greencoat Renewables)
Location: County Roscommon
Project Stage: Operational (2017)
Installed Capacity: 64 MW
No. Turbines: 20
Overall Blade Tip Height: 130 metres
website: www.sliabhbawnwindfarm.ie

12 Project Name: Bellacorick Wind Farm
Location: County Mayo
Project Stage: Operational (1992)
Installed Capacity: 6.45 MW
No. Turbines: 21

13 Project Name: Proposed Oweninny Wind Farm Phase 3
Location: County Mayo
Project Stage: Pre-Planning
Proposed Maximum Export Capacity: 90MW
Proposed No. Turbines (draft layout): 18
Proposed Overall Blade Tip Height (draft layout): 200 metres
website: www.oweninnywindfarmphasethree.ie

14 Project Name: Proposed Ballydermot Wind Farm
Location: Counties Kildare and Offaly
Project Stage: Pre-Planning
website: www.ballydermotwindfarm.ie
** At this stage, the scale of the proposed development has not been determined.*

15 Project Name: Proposed Lemanaghan Wind Farm
Location: County Offaly
Project Stage: Pre-Planning
website: www.lemanaghanwindfarm.ie
**At this stage, the scale of the proposed development has not been determined*

16 Project Name: Proposed Cloncreen Battery Storage Project
Location: County Offaly
Project Stage: Planning

17 Project Name: Proposed Littleton Wind Farm
Location: County Tipperary
Project Stage: Pre-Planning
website: www.littletonwindfarm.ie
**At this stage, the scale of the proposed development has not been determined*