

Partners in Natural Energy

# Proposed Blackwater Solar Farm

## **Frequently Asked Questions**

#### What is a solar farm?

A solar farm is a large-scale renewable energy facility where large numbers of solar photovoltaic (PV) panels are used to generate renewable electricity from the sun. In this case it is proposed to mount the panels on the ground.

#### What are solar PV panels?

Solar PV panels are made from semi-conducting materials which generate direct current (DC) electricity when there is sunlight/daylight. Even on cloudy days there is enough light for the panels to produce electricity. Solar panels are already in use on the rooftops of both commercial and domestic buildings around the country.

#### What size will the Blackwater solar farm be?

The size of the solar farm will depend on a number of different criteria which are currently being assessed, for example: spacing between the panels, the slope of the landscape, proposed height of the arrays, and the rating (in watts) of each panel. As a general guide, 1 megawatt (MW) of Solar PV panels will typically require a net area of 2 hectares but this can vary between 1.6 and 2.2 ha.

#### What Height will the solar farm be?

The solar photovoltaic (PV) panels will be mounted on metal frames, to a maximum height typically 3m above ground level.

#### What is 'Glint and Glare' in relation to a solar farm?

Glint is a momentary flash of bright light, while Glare is a continuous source of bright light. Solar cells are designed to absorb light, not reflect it and therefore the potential for significant glint and glare will not arise as a result of the proposed development.

#### Will there be any noise from the solar farm?

There will be some daytime noise during the construction phase; however, given the remoteness of the site and the short duration of construction (approx. 24 months), it is considered that noise emissions will not be an issue. When operational, the solar panels themselves will not produce noise as they operate silently. The inverter/transformer stations and main substation will emit only a very low level of noise and will be fully assessed as part of the application.

#### Will there be any visual impact to the local area?

The proposed development will be screened from the local area, as the ground levels within the site are below those of the surrounding area as a result of the historic peat extraction activities at the site. In addition, there is extensive perimeter screening which will be retained, further mitigating the potential for any visual effect.

#### How will the solar farm be constructed?

The construction will be broken into a number of phases including ground preparation, sub-station development and panel and inverter installation; this will be followed by testing and commissioning.

#### What is the lifespan of the solar farm?

The solar farm will have a projected lifespan of 30 years and when a solar farm reaches the end of its operating lifespan, they can be removed and recycled.

#### When will the planning application for the Blackwater solar farm be submitted?

We plan to submit the planning application for the solar farm to the Local Authority by early 2023.



Ground Mounted Solar PV

### Introduction

In April 2017, Bord na Móna and ESB announced a co-development agreement to develop solar power in four locations in Roscommon, Offaly and Kildare, which will provide renewable energy to power the equivalent of 150,000 homes per annum. As part of this agreement we have already secured consent for the first project, Timahoe North Solar Farm to be constructed in Co. Kildare.

Bord na Móna and ESB have a long track record of developing energy projects together, dating back to the development of the first generation of peat fired power stations. Renewable energy is a strategic growth area for both companies and is aligned with both corporate strategies that include reducing carbon emissions.

The co-development agreement assessed part of Bord na Móna's land bank in strategic locations across the Midlands which is suitable for large scale solar energy projects and brings together the expertise of two leading commercial semistate companies in renewable energy with significant projects that support Ireland's energy transition. Arising from the site selection process Blackwater Bog has been choosen for the proposed development of a solar farm in the area. The proposed development of Blackwater Solar Farm 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.



# The Proposed Development - Blackwater Solar Farm

The site for the proposed solar farm (as shown in Figure 1) is known as Blackwater Bog and is located in north-west Offaly. The site is located less than 1km south of Clonmacnoise, less than 1km north east of Shannonbridge, 6km southwest of Ballynahown and approximately 6.5km west of Ferbane.



Figure 1: Study Area for proposed Blackwater Solar Farm

The Blackwater Bog is approximately 2,338 hectares (5,777 acres) in size and was formerly used for the production of milled peat for power generation. The 'blackline area' (as shown in Figure 1) is the study area for the proposed development of Blackwater Solar Farm and consists of approximately 1,079 hectares (2,666 acres).

The proposed development at Blackwater Bog would see the installation of rows (arrays) of solar PV panels on mounted frames across a portion of the site. The arrays would be angled and would run typically east to west across the site and will be installed at an appropriate distance. The arrays would be anchored into the ground using engineered piles. In addition to the arrays, the development would also include the following associated infrastructure:

- Grid connection;
- Drainage system;
- Electricity substation;
- Amenity and landscaping;
- Underground cabling and ducting;
- Inverter/transformer station modules;
- Site access, internal roads and parking;
- Operational management facilities such as perimeter fencing, CCTV cameras etc.



## 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 solar energy to meet our renewable energy targets. Outlined below is some of the most recent relevant Irish Government Policy:

#### National legislation

- 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.
- Department of Communication, Climate Action and Environment 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.
- Climate Action and Low Carbon Development (Amendment) Bill 2021. Legislation designed to put Ireland on a path to net zero emissions, no later than 2050 and a 51% reduction in emissions by the end of the decade.

#### Project 2040/National Development Plans

- National Development Plan 2018 2027 outlined 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.
- The National Development Plan 2021 2030 includes commitments to increase the share of renewable electricity up to 80% by 2030. Regular Renewable Electricity Support Scheme (RESS) auctions will deliver competitive levels of onshore wind and solar electricity generation.

## Solar Energy Explained

Solar energy is the solar radiation emitted by the sun that reaches the earth. It is a renewable energy source that converts

sunlight into heat or electricity.



- Photons from the sun beam down to earth
- Solar panels featuring semi-conductive material collect the photons.
- Free electrons form in the solar cells and power is now available for you to use in your home.

## How Does A Solar Farm Work?

Each solar PV panel is made up of a number of solar cells which have an upper and lower layer of silicone. When sunlight shines on the cells an electrical current starts to flow between the two layers of silicone and creates energy. The more intense the light that shines on the solar cells is, the more energy is produced.

Solar cells are wired together to form modules and a number of modules combine to form a solar panel. In the case of solar farms a number of these panels are connected together to form rows, also known as arrays.

The arrays of solar PV panels are ultimately connected to inverters which are used to convert the direct current (DC) generated by the PV panels into an alternating current (AC) which is compatible with the national grid. These are in turn connected to transformers which step up the voltage of the electricity generated to transfer/transmit the output from the proposed development to the national grid.

Underground cabling is buried underground around the arrays to connect the panels with the inverter/transformer units within the solar farm.





# Site Selection/Constraints

The main site selection criteria considered when selecting the site and designing the layout for the proposed Blackwater Solar Farm are as follows:



Once the site has been selected then the following additional constraints are established for the specific site:

- Landscape character;
- Archaeological heritage;
- Surface water management;
- Proximity to existing grid infrastructure; •
- Site specific access and local road network;
- Wildlife habitats/species and designated sites;
- Site specific grid connection and electrical infrastructure;
- Buildable area, site topography and ground conditions.

## Benefits of the Development

The proposed solar farm 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 Blackwater Solar Farm will include:

- A Community Benefit Fund.
- A number of jobs created during construction.
- Substantial rates paid to the relevant Local Authority.
- Payment of taxes from the project, and dividends from Bord na Móna and ESB to the State.
- Supporting a number of long-term jobs in security 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 demand for electricity in the Midlands region, resulting from renewed economic growth. During construction, additional employment will be created in the region through the supply of services and construction materials (concrete, stone, and fencing) to the solar 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 solar farm will replace the equivalent generation of electricity from fossil fuels and will therefore, contribute to reducing greenhouse gas emissions. It will also assist with reducing our dependence on external energy sources and help to improve energy security of supply.

# **Potential Solar Farm Amenity Facilities**

Although the solar farm itself will not be accessible to the public, it is proposed that the development will provide amenity access which can be enjoyed by the local community through the provision of access trail(s).

## **Biodiversity**

In general, solar farms are considered to be very positive for biodiversity, as they can be incorporated into the landscape with relatively little intervention, require very little maintenance and have minimal impact on bird and animal species living on site or migrating through the site.

In the case of Blackwater Bog, it is envisaged that a solar farm would be integrated into the habitat rehabilitation plan for the site.

# **Community Engagement:**

#### Public Consultation: Spring 2022 – Community Engagement Sessions

Bord na Móna & ESB will engage on an ongoing basis with the local communities regarding the development of the proposed Blackwater Solar Farm through:

- Community Liaison Officer House to House visits
- Community Engagement Sessions (Spring 2022)
- Dedicated project website www.blackwatersolarfarm.ie
- Online Feedback Questionnaire
- Postal Feedback Questionnaire

Please note that all activities with be carried out with regard to the latest Covid-19 restrictions in place.

# **Community Engagement Sessions**

Subject to Covid-19 restrictions, we intend to hold a series of Community Engagement Sessions in Spring 2022 in the locality of the proposed development.

Details of these sessions will be advertised via local media or alternatively, if you sign up to our project mailing list you will receive a letter via post with these details. If you would like to find out more about the Sessions and/or register your interest in attending, please contact the Project's Community Liaison Officer James (contact details on next page) or, visit the project website (www.blackwatersolarfarm.ie) where you can join our mailing list.

The Blackwater Solar Farm project will benefit from participation by residents and communities during each stage of the development. If you wish to be updated or require information about the proposed development, please contact us via one of the channels below:



\*9 a.m. to 5 p.m. Monday to Friday excluding bank holidays





Keep informed of all project updates by signing up to our project mailing list.

Please visit the project website to complete the sign-up form:

## Bord na Móna About Bord na Móna

Bord na Móna is an Irish, semi-state climate solutions company helping lead Ireland towards a climate neutral future.

Bord na Móna has been serving communities for over 90 years, always rising to meet the needs of the day. It was founded in 1934 as The Turf Development Board to enhance national energy security through peat harvesting and became Bord na Móna in 1946.

Today, we have radically changed our approach to face an even greater challenge: climate change. We have ended peat harvesting and now focus on developing climate solutions in renewable energy, sustainable waste management, carbon storage, and biodiversity conservation.

Ireland has committed to ambitious climate goals and Bord na Móna's climate solutions are helping to achieve them. Our vision is to help Ireland reach net zero greenhouse gas emissions by 2050. This means helping to remove the same amount of greenhouse gases from the atmosphere that are released.

To power a net zero future, we are expanding our renewable energy infrastructure. We have been constructing and maintaining large-scale infrastructure for decades. Today, we are using that experience to build renewable energy developments across the country. These developments are transforming the way we generate and consume energy.

Ireland has committed to generating 80% of electricity from renewable sources by 2030. We are working across wind, solar, biomass and biogas to help achieve this target and to provide energy security for future generations.



## About ESB

Electricity Supply Board (ESB) was established in 1927 as a statutory corporation in the Republic of Ireland under the Electricity (Supply) Act 1927. With a holding of 95%, ESB is majority owned by the Irish Government with the remaining 5% held by the trustees of an Employee Share Ownership Plan.

As a strong, diversified, vertically integrated utility, ESB operates right across the electricity market: from generation, through transmission and distribution to supply. In addition, ESB extracts further value at certain points along this chain: supplying gas, using our networks to carry fibre for telecommunications, developing electric vehicle public charging infrastructure and more.

ESB is Ireland's foremost energy company and the largest supplier of renewable electricity in Ireland. Through innovation, expertise and investment, ESB is leading the transition to a low-carbon future in developing a modern, efficient electricity system, capable of delivering sustainable and competitive energy supplies to our customers.