



Balgray Wind Farm

EXHIBITION BROCHURE

November 2024



Welcome

Welcome to our second set of public exhibitions about our proposals to develop Balgray Wind Farm, located approximately 6km north-east of Lockerbie in Dumfries and Galloway.

We are keen to continue our conversation with the community about how we can develop a project that will:

- Deliver local and regional supply chain opportunities
- Make a positive contribution to the local economy
- Provide around £200,000 a year in community benefit to support local projects (index linked)
- Actively support Scotland's net zero ambitions

Your feedback and opinions are very important. Please complete a feedback form or speak to the team to discuss the plans further.

 communities@fredolsen.com

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 www.balgraywindfarm.co.uk

About Fred. Olsen Renewables

Fred. Olsen Renewables is one of the longest standing renewable energy developers in Scotland.



Developing



Constructing



Operating

Our portfolio consists of 258 operational turbines, alongside a further 76 consented.

This, combined with our projects in Norway and Sweden, brings our total operational capacity to 804.9 MW – providing enough power for 698,344 homes.

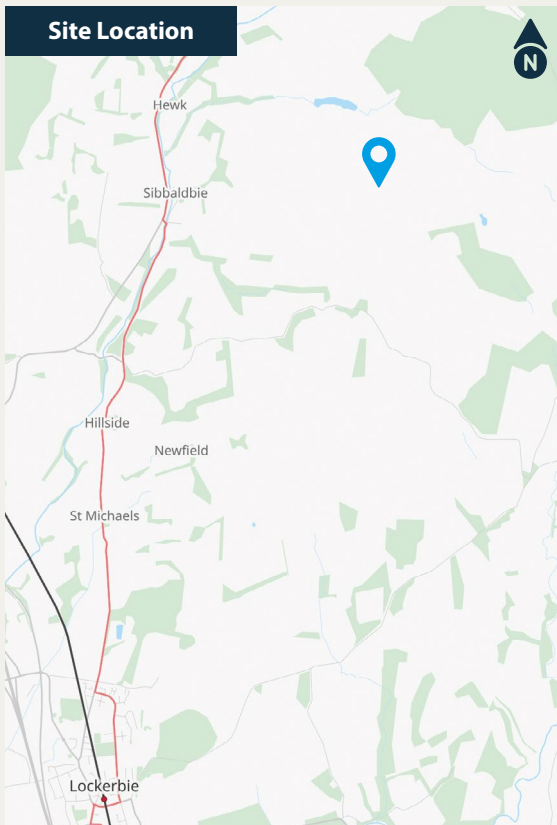
We are excited about the future. With a pipeline of more than 1GW, central to our success will be collaboration with communities, committing to local businesses and contributing towards Scotland's sustainable future.

Our Proposal

The proposed Balgray Wind Farm is located approximately 6km north-east of Lockerbie in Dumfries and Galloway.

We have undertaken a range of consultation and have been gathering feedback from statutory consultees and the local community. We hope that these exhibitions will help to provide an update on how this feedback, alongside the findings of our technical assessments, have influenced the design.

Site Location



The plans for Balgray Wind Farm now consist of:

- Six wind turbines, with a tip height of up to 200m
- 43MW of battery storage
- Turbine foundations and hardstandings
- External transformer housing
- Onsite substation and control building
- Underground electricity cables between the turbines
- Access tracks
- Crane pads
- Anemometry mast

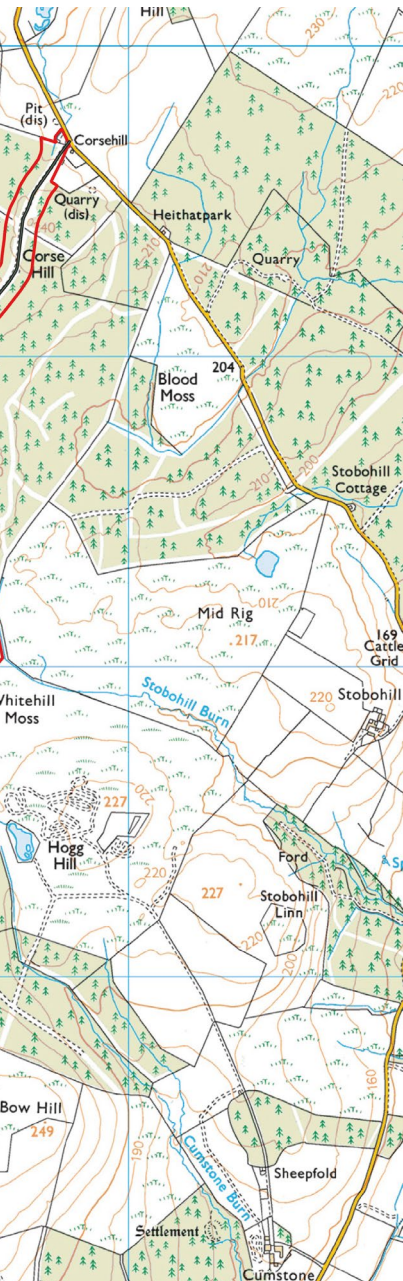
© OpenStreetMap contributors

Layout and Design Process

To determine the final location of the wind turbines many factors have been considered. These include:

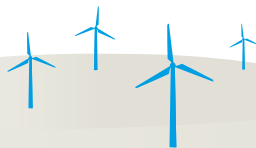
- Wind resource
- Engineering constraints
- Visual impact
- Impact on sensitive habitats
- Proximity to areas of ecological interest
- Location of heritage assets
- Telecommunication infrastructure

Following our first round of exhibitions we have removed one turbine and reduced the proposed turbine height. The layout in the plan shown details the location of the proposed six wind turbines.



Key

- Turbine Locations
- Battery Energy Storage System (BESS)
- Substation
- Control Room
- Hardstandings
- Track Layout
- Balgray Red Line Boundary



Development Process

Having submitted a Scoping Report to the Scottish Government Energy Consents Unit (ECU) in December 2023 we have received a range of feedback from consultees.

Some of the stakeholders included:

- Dumfries and Galloway Council
- NatureScot
- RSPB
- Scottish Environment Protection Agency (SEPA)
- Historic Environment Scotland (HES)
- Community Councils

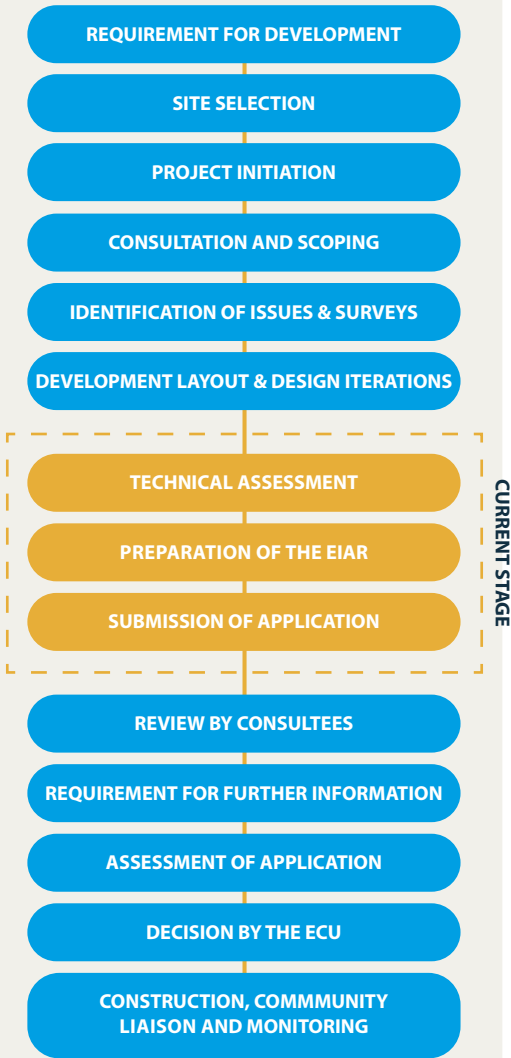
This feedback has determined the scope of the EIA and informed the extent of our surveys and assessments. These have helped to inform the layout of the site and helped to ensure that it minimises effects on the local environment.

We have evaluated any potential significant effects of the proposed development, and these will be presented within the EIA Report. The EIA Report will accompany the application for consent to the Scottish Government.

The EIA Report will consider:

- Ornithology
- Ecology
- Cultural Heritage
- Hydrology, Hydrogeology and Peat
- Aviation and Telecommunications
- Socioeconomics and Tourism
- Noise and Vibration
- Traffic and Transport
- Landscape and Visual
- Shadow Flicker

Our Development Timeline



Environmental Impact Assessment

An Environmental Impact Assessment (EIA) is being finalised. This identifies and assesses the potential significant environmental effects of the proposed development. The information gathered through the EIA process helps to shape the design and layout of the proposed development and required mitigation measures. This includes, amongst others:

Ornithology

A desk-based study was conducted in November 2020. This was prior to the commencement of baseline surveys. It provided background information on protected sites designated for their ornithological interest and protected species either known or likely to be present within the site and its surrounding area. The desk-study findings were used to advise on the ornithological field survey programme.

The site has undergone a suite of baseline ornithology surveys between March 2021 and February 2023 (inclusive). A range of surveys have been undertaken, including:

- Vantage Point surveys in two breeding seasons and two non-breeding seasons
- Goose Feeding Distribution Surveys
- Breeding Bird Surveys
- Black Grouse Surveys
- Raptor and Owl Surveys

All surveys have been undertaken in line with the latest guidance from NatureScot.

Four high value species were recorded breeding within the core breeding bird survey area during 2021 and 2022, red kite, goshawk, barn owl and common crossbill (all were breeding outside the site boundary, and outside the area where they would be likely to be affected by the wind farm).

Several migrant flocks of pink-footed geese and whooper swans were noted in 2022. None of either of these species had been seen in the previous year. Numbers recorded overall, were low in the context of the regional populations, adding further evidence that the site does not lie on any important spring migration route for these species.



Ecology

A desk-based study was undertaken in Autumn 2021 prior to the commencement of baseline surveys. This provided background information on protected sites designated for their ecological interest and protected species either known or likely to be present within the site and its surrounding area. These findings were used to inform the ecological field survey programme.

The site has undergone a suite of baseline ecology surveys between August 2023 – October 2024 (inclusive). The following surveys were undertaken:

- Phase 1 Habitat Survey
- National Vegetation Classification (NVC) Survey
- Badger Survey
- Otter Survey
- Water Vole Survey
- Bat Roost Assessment
- Static Bat Detector (bat activity) Surveys
- Freshwater Habitat Assessment Survey
- Great Crested Newt eDNA Survey
- Marsh Fritillary Butterfly Surveys

All surveys were undertaken in line with the latest guidance from NatureScot and the extent of the baseline surveys were agreed in consultation with NatureScot.



The dominant habitat types within the development area include improved neutral grassland and marshy grassland. There are several areas of wet modified bog within the site, alongside small parcels of fen habitat.

Habitats on site will be of value for badger, offering both opportunities for sett establishment and foraging.

The site supports populations of marsh fritillary butterfly. Suitable habitat is limited within the site and is generally restricted to marshy grassland along the north and eastern boundary. Extensive survey effort has been undertaken to determine the range and population density within the site, this has included habitat surveys and larval web searches.



Cultural Heritage

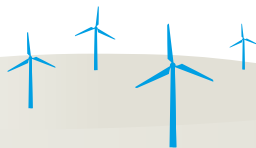
The cultural heritage assessment considers the archaeological and cultural heritage assets within the proposed development site, and in the wider area according to potential impacts.

A desk-based assessment was carried out which comprised a review of data sources including the Dumfries and Galloway Council Historic Environment Record (DGHER). Consultation with the Council Archaeology team is currently ongoing. Historic Environment Scotland (HES) holds the statutory datasets and information for assets including Listed Buildings, Scheduled Monuments and Gardens and Designed Landscapes which will be used to inform the EIA chapter. Secondary sources of historical and modern mapping and any available LiDAR data will be used to complement the reporting and provide wider historical context of the region.

In addition, a detailed walkover survey across the footprint of the proposed development has been undertaken. Assessment of key heritage assets in the wider area is ongoing and designated assets within 10km of the proposed development site are being visited to assess potential impacts on their settings.

Within the proposed development site, there are an identified 40 heritage assets which have been identified through HES, DGHER, historic mapping and walkover surveys. These assets consist of a Scheduled Monument, recorded as SM2265 'Firtree Hill, fort' by HES and five assets associated with prehistoric settlement which are of National Significance as identified by the DGHER. The remainder of the assets are broadly associated with agricultural activities dated from the prehistoric to modern periods, including the active Balgray Farm.

Throughout the design process close consideration is given to any potential impacts upon cultural heritage assets: turbines and associated infrastructure elements have been located away from known cultural heritage assets within the site, and data from the walkover survey and desk-based assessment has fed into the on-going design process. Consultation is ongoing with stakeholders to discuss the potential effects of the proposed development on the settings of heritage assets both within and outwith the proposed development site; care will be taken to identify and assess the potential to avoid adversely affecting an asset's setting and thereby the ability to understand, appreciate and experience the asset in its wider context.





Hydrology, Hydrogeology and Peat

This assessment considers the hydrological, geological and hydrogeological characteristics of the proposed development site, and helps to inform appropriate mitigation proposals. Areas of deep peat have been identified and are limited across the site. This has been concluded by phase 1 and phase 2 peat surveys which have been undertaken across the development boundary.

The turbine layout has taken into consideration the habitats and watercourse across the site and looked to keep outwith any areas of deep peat and away from watercourses.

Local settlements and residential properties within the Drfye Water Valley currently experience high levels of flooding. Plans to prevent additional run off during construction and operation of the wind farm will be outlined with the Construction Environmental Management Plan (CEMP) which will form part of the final application.

Biodiversity Net Gain

Our EIA will consider how we can deliver biodiversity net gain. Making sure that we leave the natural environment in a measurably better state than pre-development.

We hope to improve the biodiversity in and around the site. This can involve:

- Taking steps to mitigate potential negative impacts
- Enhancing, creating and restoring habitats in and around the site

We are aware of the rare Marsh Fritillary Butterfly being present within the development area. Extensive surveys have been undertaken to understand more about this species. We are currently exploring opportunities to protect and enhance the habitats that are currently on site.

Compensating for impacts on the site

Aviation and Telecommunications

Assessments and consultation have been undertaken to assess whether the turbines could adversely affect the operation of commercial and military aviation interests and infrastructure.

Due to the relatively close proximity (19.55 km) of the Balgray Wind Farm to the Eskdalemuir seismic array, assessments are ongoing to fully understand the impacts the project may have on the array and whether a specific turbine with low seismic emission values or seismic mitigation will be required.

The turbines will be equipped with aviation lighting attached to the hub, due to the structures standing taller than 150m in height and proximity to an MoD low flying area. We are currently consulting on a reduced lighting scheme for this project.

Socioeconomics and Tourism

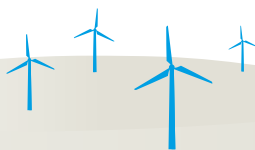
Predicted socioeconomic benefits of the proposed development will be outlined within the EIA Report. This will include the potential benefits on local, regional and national levels during the construction and operational periods of the proposed development. The tourism assessment will consider the drivers of tourism in the locality and whether there is any potential for effects associated with the proposed development that could lead to changes in tourist behaviour and so the tourism economy.

A Socio-Economic Benefit and Community Wealth Building Report will also be provided alongside the final application.

Noise and Vibration

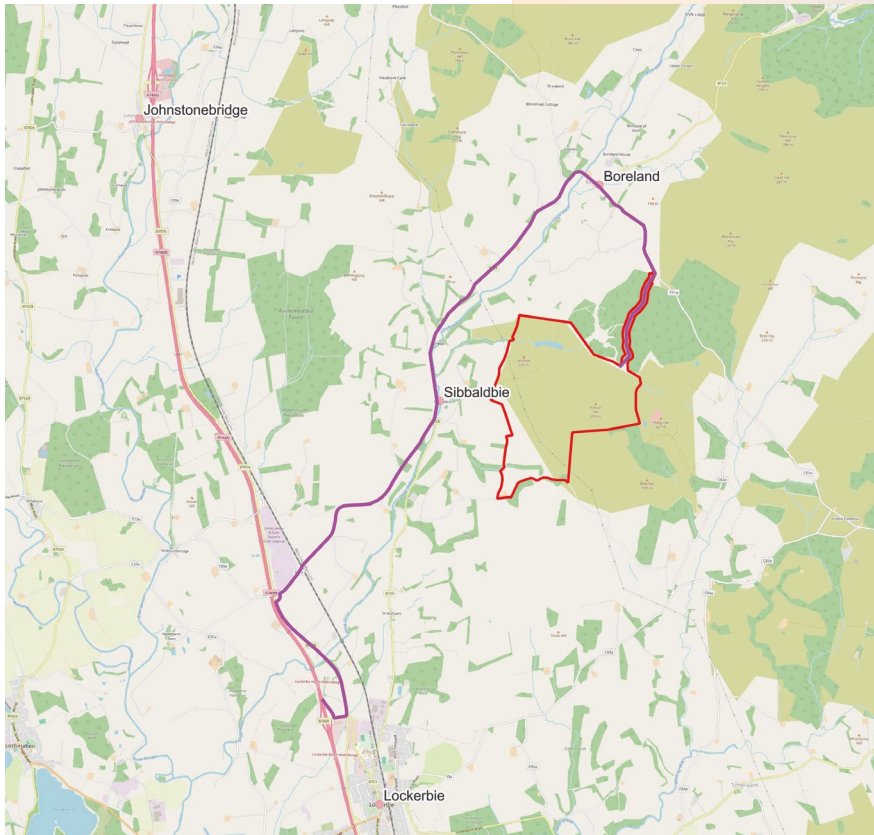
This assessment will consider the potential effects of operational noise from wind turbines and any other items of fixed plant (such as batteries and substations) on nearby sensitive receptors. The noise levels from operation of the wind turbines and associated plant will be predicted and compared against the adopted noise limits. The noise limits for wind turbines will be set in accordance with appropriate standards and guidance, taking account of noise limits set for cumulative developments.

Noise from the construction phase will be addressed through production of the Construction Environmental Management Plan (CEMP). Appropriate noise limits for the construction phase will be identified in accordance with the appropriate standards and guidance and reported within the EIAR.



Traffic and Transport

This assessment considers the impact on traffic volumes and the transport network during the construction period, operational phase and decommissioning phase of the proposed development. The initial route review and the site visit has identified that blades and towers will be delivered to the King George V Dock in Glasgow and be transported to site via the A74(M).



Landscape and Visual Amenity

A full Landscape and Visual Impact Assessment (LVIA) of the proposed development is being carried out to consider effects on:

- **Landscape fabric** - changes to individual landscape features and elements
- **Landscape character** - changes in the key characteristics and qualities of the landscape as a result of the development
- **Visual amenity** - changes to views experienced by people

The study area for the LVIA has been defined with reference to a Zone of Theoretical Visibility (ZTV) map. This has been produced to understand the geographical area where views of the proposed development are theoretically possible. This was modelled to the blade tip height of the proposed turbines and to a 45 km radius.

The LVIA will include an assessment of the sensitivity of landscape character and assess the potential for the proposed development to result in significant effects to landscape character.

The LVIA will assess the potential effects of the proposed development on different visual receptors comprising settlements, footpath users, recognised tourist routes, long distance walking routes, cycle routes, centres for tourism and road and rail routes.

The LVIA will include an assessment of the cumulative effects of the proposed development when considered along with other operational, approved or in planning wind energy schemes.

Under Civil Aviation Authority (CAA) Regulations structures over 150m in height are required to be lit with visible aviation lighting. The LVIA will also assess the additional visual effects of the proposed aviation lighting.

Since the Scoping Opinion for the proposed development was published in May 2024, we have analysed the feedback received and are looking at including several additional LVIA viewpoints that have been requested. We continue to work with Dumfries and Galloway Council to agree the scope of the LVIA and the final list of LVIA viewpoints.



Community Benefit

If consented, Balgray Wind Farm could provide over £7m in community benefit throughout the lifespan of the project (index linked).

We are eager to hear the views of the local community on how they would like to utilise the community benefit fund. This could include:

- Local Energy Discount Scheme
- Local Energy Efficiency Programme
- Local or Regional Community Benefit Fund
- Supporting large scale local improvement projects, such as flood defences

We want to hear your feedback on these suggestions and your ideas, if there are any more opportunities, you would like us to explore.

Get in touch by emailing
communities@fredolsen.com



CASE STUDY - Carsphairn Local Energy Discount Scheme

Carsphairn Local Energy Discount Scheme (LEDS) has been operational since 2018. One of the first LEDS in Scotland, it is administered by Carsphairn Community Council and fully funded by Windy Standard Wind Farm.

The initiative supports local residents to pay for their energy related bills and addresses the challenge of rising energy costs, helping the fuel poor and minimising fuel poverty.

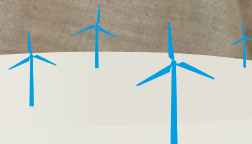
The scheme is open to all properties that are lived in full time (excluding holiday homes and second homes). Local residents are encouraged to apply into the scheme annually. Since its inception the LEDS has provided over £127,000 in direct payments. In 2022 alone, 101 houses were provided with £400 towards their energy costs.

Liz Holmes, Chair, Carsphairn Community Council, commented:

"The scheme has been very well received by the community and has helped residents to meet their energy costs, which has become increasingly important with the huge increase in these over the last few years.

"As a remote rural community, it is very important that this is an energy, rather than electricity scheme, allowing those who use oil, solid fuel or LPG for heating and those who are not connected to the electricity grid to continue to benefit.

"The LEDS helps to demonstrate the positive impact that wind farms can bring to the area, reaching residents who might not benefit from funding otherwise."





Supply Chain

We are pleased that our projects have managed to employ a range of local services – helping to maximise the local economic opportunities of our projects.

If our application is successful we will look to local businesses to provide services to the proposed development. Services that we have previously employed include:

- Local accommodation
- Plant hire
- Caterers
- Groundworks
- Fencers
- Concrete and aggregate

If you, or your company, are able to provide any of these services, and more, please get in touch by emailing suppliers@fredolsen.com

Wind Farms and Climate Change

What is Climate Change?

Climate is the average weather we experience over many years, climate change is the change we are seeing in these averages conditions. The rapid climate change we are now seeing is caused by humans using oil, gas and coal for their homes, factories and transport.

Average global temperatures have risen by more than 1°C since the 1850s. 2015, 2016, 2017, 2018, 2019 and 2020 were the hottest years ever recorded. Scotland, and the rest of the world is in the midst of a global climate emergency.

We are already seeing the negative impact of climate change. Unless action is taken, temperatures will continue to rise and we will experience catastrophic impacts such, with worsening droughts, greater sea level rise and mass extinction of species. We all have a role to play.



The impact of Climate Change?

Environment

We are already witnessing changes to our environment such as the melting of ice caps and glaciers with low lying and coastal cities at particular risk of flooding.

Climate change is expected to worsen the frequency, intensity, and impacts of some types of extreme weather events. For example, increases in temperatures have resulted in a greater risk of wildfires like those recently seen in the USA and Australia.

People

Climate change is affecting people in far-reaching ways. Things that we all depend upon and value – water, energy, wildlife, agriculture, ecosystems, and human health – are experiencing the effects of a changing climate.

These extreme weather events (floods, storms and wild fires) will become more common and intense, threatening lives and livelihoods.

Nature

There is already evidence that animals, birds and plants are being affected by climate change in both their distribution and behaviour.

Changes are happening so fast that many species do not have time to adapt to the loss of habitats or food and will soon become extinct.

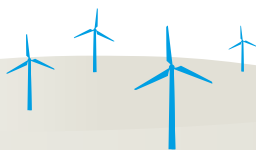
For example, the loss of sea ice has already seen large reductions in the numbers of Polar Bear species whilst increasing sea temperatures has dramatically impacted coral reefs – a vital habitat for many sea creatures.

Impact in the UK

Changes to the climate are also being felt in the UK.

Our winters are becoming warmer and wetter resulting in increased flooding. Whilst our summers will become hotter and drier meaning the likelihood of droughts will increase.

People, nature, and infrastructure are already vulnerable to a range of climate impacts today and these will only increase in the coming years as the climate continues to change.



Why Wind Farms?

A substantial amount of carbon emissions come from energy used across power, heating and transport.

Renewable energy such as wind power, does not emit greenhouse gases into the atmosphere.

Therefore, by using renewable energy technologies like wind turbines, solar panels and hydro we are reducing carbon emissions created by traditional energy consumption.

Wind power, as the most advanced renewable technology available at a large scale, has a vital role to play in achieving our zero-carbon electricity system.

By bringing more wind turbines forward in Scotland, we are:



Reducing our reliance on fossil fuels



Improving energy security by reducing imports



Meeting government targets



Tackling climate change

IN 2018

RENEWABLES DISPLACED

11.9 MILLION TONNES

OF CO²

THE EQUIVALENT OF



TAKING EVERY VEHICLE OFF SCOTLAND'S ROADS

Wind power has a carbon footprint:



99% less
that coal-fired power
plans

98% less
than natural gas

75% less
than solar

Proposed Timeline

We want to apply to the Scottish Government for consent by late 2024.

Ahead of then we will continue to undertake a range of public consultation and seek to gather as much feedback as possible.

The application will be supported by an Environmental Impact Assessment Report (EIA-R) that will show the results of all studies undertaken. The EIA-R will be publicly available. Interested parties can formally comment on the application to Scottish Government.

We will make all of this information available on our website.



Next Steps

We hope to continue our consultation prior to submitting an application. The full suite of application documents will be made publicly available at this time.

We would welcome your comments on our proposals. Please take a moment to complete a feedback form or get in touch.



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