Environmental Considerations

Overview

ABO Energy NI is currently undertaking an Environmental Impact Assessment (EIA), and an Environmental Statement (ES) will be submitted alongside the planning application for the Meenakeeran wind farm and battery energy storage project.
The information in the ES will then be considered by officials and statutory consultees (technical experts) to assess the potential impact of the proposal. Examples of the topics they will consider include:

- Socio-Economic Impact Assessment
- Landscape and Visual Impact Assessment
- Flora and Fauna Assessment
- Fisheries Assessment
- Avian Assessment
- Water, Geology and Peat Slide Hazard
- Archaeology and Cultural Heritage
- Transport, Access and Haulage
- Noise Assessment
- Shadow Flicker Assessment
- Tourism Assessment
- Telecommunications and Aviation Assessment
- Grid Connection Assessment
- Assessment of Significance of Impact Interactions

All considerations are site specific and are informed by detailed surveys and assessments. Whilst the ES for the Meenakeeran project may include the range of topics above, for the purposes of this pre-application community consultation process we have selected key topics to provide further information on below. If you are unsure about any aspect of the EIA process or want more information, please speak to a member of our project team.

Shadow Flicker

Shadow flicker is a flickering effect caused when rotating wind turbines periodically cast shadows – it is subject to strict guidelines based on best practice standards.

A specialist computer modelling programme will be used to calculate the incidence of shadow flicker based on the positioning of the turbines and the worst-case dimensions within the proposed range of turbines.

Planning Policy Statement 18 Renewable Energy and accompanying Best Practice Guidance (BPG) acknowledge that proposals for wind energy projects need to demonstrate that they will not cause significant harm to the amenity of any sensitive receptors by way of shadow flicker. The proposed turbines are to the north / north-east / north-west of existing dwellings on Tullycar Rd and due to the path of the sun these areas will be least impacted by Shadow Flicker. Shadow flicker limits will be strictly adhered to at the Meenakeeran wind farm and will be controlled by planning conditions where necessary.

Socio-economic Impact

Based on assessments carried out to date, from a socio-economic perspective it is anticipated the project will:

- Achieve a high wind capacity factor of 36.8% - 42.7%, which is higher than the UK average of 35.5%, resulting in higher energy production and therefore a greater contribution to policy objectives than developing a wind farm of a comparable size on an alternative site;
- Assist with security of supply in Northern Ireland;
- £57m - £63.5m of total expenditure will be retained in the NI economy;
- Create 96.6 FTE job years of employment in Northern Ireland across the 35-year project life;
- Over 35 years, £8.5m - £11.8m of business rates generated for the Council and NI Executive;
- Deliver a Community Benefit Fund of approximately £1.6m - £2.2m over a 35-year period.

The co-location of an energy storage facility will ensure generation from the turbines is captured in times of excess generation and low demand. Similarly, when demand outstrips supply, this can be operated to export back to the grid and reduce price volatility for customers during peak periods when electricity is traditionally more expensive.

Further details of the benefits of the proposed wind farm and energy storage, both economic and community-related, will be articulated within the 'Socio-Economic Impact Assessment' section of the Environmental Statement to accompany the formal planning application.

Ecology

An assessment of the existing ecology at Meenakeeran is currently being undertaken by Blackstaff Ecology Ltd; this assessment covers existing flora and fauna, with a focus on protected species and habitats.

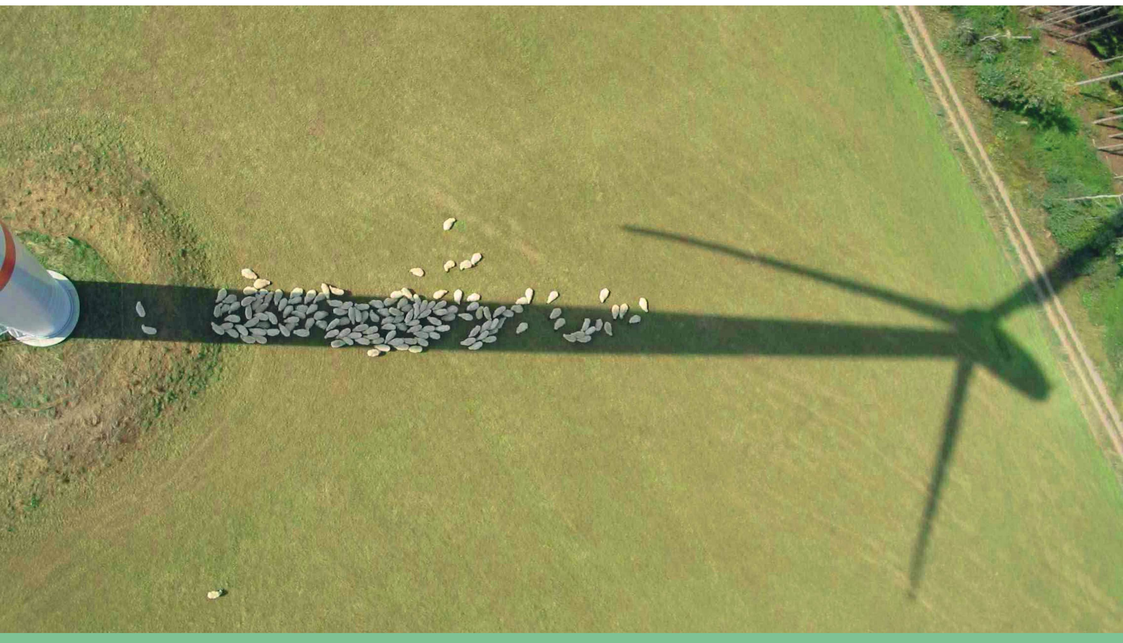
A 'Phase One Habitat Survey' has been completed across the entirety of the site, noting the relative abundance of key plant species; this information has then been cross-referenced with available satellite imagery, which displays the various habitats present in relation to a layout of 5 turbines. See above map for reference.

Systematic field surveys have also been undertaken to establish baseline activity across the site for protected species including bats, badgers, otters and lizards. All surveys have been completed in accordance with Northern Ireland Environment Agency (NIEA) and recommended best practice guidelines. These surveys conclude that the proposed Meenakeeran wind farm will have a negligible impact on protected species identified within the site.

More detailed habitat surveys have been completed during September 2024 across the footprint of the proposed wind farm alongside searches for the foodplant of the Marsh Fritillary butterfly, a species receiving protection under European legislation.

The results of surveys carried out to date have shaped the proposed development and ensure that there will not be any unacceptable or significant impacts to important habitats, flora and/or fauna as a result of the proposed wind farm.

A series of mitigation measures and enhancement of existing habitats have also been proposed within and around the footprint of the proposed wind farm which will be included in the final application, to include a detailed Habitat Management Plan which aims to conserve and enhance NI Priority Habitats and NI Priority Species for the lifetime of the operational phase of the project.



ABO ENERGY

Environmental Considerations

Climate Change

The urgency to combat climate change is well known and has been enshrined within the Climate Change Act (Northern Ireland) 2022, which commits Northern Ireland to achieving a target of 80% renewable electricity generation by 2030.

The Draft Derry City and Strabane District Council Plan Strategy 2032 (dDCSPS), when adopted will be the key document for planning policy in the area. Section 7 'General Development Principles and Policies' includes a section related to climate change and states the following:

'The Council has produced a Green Infrastructure Plan 2019-2032 (GIP 2032) which outlines the the impacts of climate change facing the district, and the role green infrastructure can play in addressing the issue. More recently, in June 2019, the Council declared a 'climate emergency', which reinforces the need for urgency and underpins the requirement for these development principles within the Council's Local Development Plan (LDP).'

'The Council has a critical role in mitigating and preventing the effects of climate change as well as adapting to them, particularly through its Planning function. The LDP seeks to contribute to this by setting strategies and policies that promote sustainable forms of development, avoid and / or mitigate against flooding, reduce the impact of heatwaves...'

Based on industry-standard figures it is calculated that the proposed Meenakeeran wind farm and battery energy storage project will:

- Provide enough energy to power 25,008 - 39,300 homes (or 41% - 64% of the households in the Council area).
- Reduce CO2 emissions by 25,357 to 40,865 tonnes per year.

Noise Assessment

Noise impacts from Meenakeeran wind farm and battery energy storage project will be assessed against the most up-to-date noise standards and in line with the Institute of Acoustics - Good Practice Guide.

The measurement and prediction methodologies were agreed with the Environmental Health Department of Derry City and Strabane District Council, prior to setting up noise monitoring equipment. Background noise level measurements were undertaken in the Meenakeeran locality, at 3 residential properties representative of the rural dwellings along the Tullycar Road.

Noise modelling is currently ongoing with respect to finalising the layout and candidate wind turbine selection, to ensure that noise limits are not exceeded at all dwellings. The candidate wind turbines will have the ability to operate in a variety of noise 'modes' and therefore noise levels can be reduced (if deemed appropriate) post construction.

Avian Ecology

An assessment of effects on bird populations has been undertaken by APEM Ltd, an ecological consultancy which specialises in bird surveys and monitoring.

Bird surveys at the site have been undertaken since 2021 through to 2024, which exceeds the requirement of two year's minimum of surveys. Surveys have been undertaken in both breeding and non-breeding seasons and consist of flight activity studies and site walkover surveys. Surveys followed established guidelines recommended by DAERA.

The data gathered during the flight activity study enables collision risk modelling to be undertaken for any target species which regularly use the site. The walkover surveys involve recording all species seen or heard along a transect route.

Breeding bird surveys focus on identifying breeding species including birds of prey or breeding waders so that appropriate mitigation measures can be applied if necessary.

Geology, Fisheries and Water Environment

An assessment of the likely effects of the proposed wind farm development on the hydrological and geological environment and Fisheries has been undertaken by McCloy Consulting Ltd.

The impact assessment undertaken involved a combination of desktop investigations, field surveys, and consultation with various stakeholders. Where constraints were identified during the assessment, they were reported to the design team at the early stage of design development and avoided as far as possible within the proposed layout.

The proposed development is in the upper sections of the Glendergan River catchment (a tributary of the River Derg) which drains in a south-easterly direction. These rivers are part of the environmentally designed 'River Foyle and Tributaries' Special Area of Conservation (SAC) and Area of Special Scientific Interest (ASSI).

The main watercourses at the proposed development (tributaries of the Glendergan River) are fed by a number of smaller channels and field drains. The significance of both the Glendergan River, the River Derg, and their tributaries to fisheries on and downstream of the site has been noted.

The soils on site largely comprise areas of peat. The bedrock beneath the site is comprised psammite. The underlying bedrock is indicated to have limited water productivity potential. A detailed assessment of peat slide risk has been undertaken to ensure that proposals are not sited in areas where they could cause land instability. An assessment of the potential effects of the proposed development on fisheries and aquatic ecology in local watercourses is being undertaken by Paul Johnston Associates Ltd. Field surveys have been carried out to assess stream quality in line with Water Framework Directive (WFD) procedures, and to assess fish habitats and fish stocks in line with Loughs Agency procedures. The potential effects on fisheries and aquatic ecology will be assessed for the construction, operational and decommissioning phases of the project, and any mitigation measures required to address significant effects will be proposed and included in the ES.

Aspects of the design, construction, operation, and decommissioning of the proposed development that may impact on the receiving geological and water environment have been identified and the pathways of potential effects assessed. Mitigation measures integrated as part of the design of the proposed development, and others to be implemented throughout its lifetime to minimise potential adverse effects include:

- Design of site elements to minimise impact on the geological and water environment (e.g. careful consideration of the positioning of wind turbines, foundations, and areas of hard standing);
- Avoidance of significant water features (i.e. establishing zones around watercourses where construction works are to be avoided);
- Careful management of minor water features where they come into contact with wind farm infrastructure;
- Implementation of a comprehensive surface water management plan comprising the use of Sustainable Drainage Systems (SuDS) and silt management to prevent pathways for pollution reaching the wider environment as well as reducing any increased risk of flash flooding downstream; and
- Establishing pollution prevention procedures to minimise the potential risk to the wider environment posed by construction, operation and decommissioning-phase activities (e.g., accidental spillage).

With the proposed application site layout and mitigation measures, and in particular measures to protect water quality in the Glendergan River / River Derg downstream of the site, no significant risks to the water and geology environment are likely.

Grid Connection

ABO Energy NI has assessed the local NIE Networks infrastructure to inform an indicative grid connection route for the proposed Meenakeeran wind farm and battery energy storage project. The assessment has considered the impact of a grid connection alone, as well as cumulatively, and as part of the wider wind farm development. This assessment has also considered the impact of the complete project and is based on our professional experience.

A grid connection application will be submitted to NIE Networks for the proposed wind farm in due course. NIE Networks will then define the final grid connection route and method in a grid connection offer. For this reason, the proposed grid connection that will be assessed by ABO Energy, should best represent the most feasible and likely route NIE Networks would pursue, in our professional judgment.

The indicative route consists solely of underground cable from the Meenakeeran wind farm substation to the existing Magherakeel 110kV substation location. The total route length is approximately 13.3km and all works will be conducted within the public road in line with NIE Networks' best practice requirements.

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