

Contact Us

We welcome conversation, engagement and interaction with you on any aspect of how we propose to progress the Coumnagappul wind farm project and particularly on how we communicate project information to you. If you would like to chat about this proposed project further please contact us via any of the below means.

Website: www.coumnagappulwindfarm.ie

Email: coumnagappul@emp.group

Phone: 01 588 0178

Write: EMPower, 2 Dublin Landings, North Wall Quay, North Dock, Dublin 1

Project Webinar:

The project team will host the third Coumnagappul project specific design webinar on **Wednesday evening the 05th of October 2022 between 7pm and 8pm**. You can register for the event at www.coumnagappulwindfarm.ie/webinar.

The project design team will also facilitate the second in-person project information evening in the **Sliabh gCua Community Centre, Touraneena on the 12/10/2022**. between **4.00pm and 8.00pm**. Please drop in anytime between 4pm and 8pm to discuss the proposed Coumnagappul wind farm project and its associated design process with members of the project design team.

All project engagement events will be advertised in local newspapers, project newsletters and on the project website. Members of the project design team are available, at the contact details listed on this page, to talk through any aspect of the Coumnagappul wind farm design process which you would like to discuss further.

Coumnagappul Wind Farm

Project Newsletter – September 2022



Looking south from the center of the Coumnagappul Project Study Area

Introduction

EMPower are actively exploring the potential for a renewable energy project in the townlands of Coumragappul, Carrigbrack, Knockavannia mountain, Barricreemountain Upper and Glennaneanemountain, Skeehans, Lagg in Co. Waterford. The proposed Coumragappul project has undergone significant re-design over the course of 2022 in order to propose the most suitable project possible for the receiving environment. The proposed project is now at a stage where all the environmental assessment survey data has been gathered and collated in order to inform the final proposed project layout. This Newsletter sets out an overview of the ongoing project design work as well as the proposed project at the Design Iteration Three stage.

The project team will facilitate the project's second information evening in the Sliabh gCua Community Centre, Touraneena on the 12/10/2022. Please call in anytime between 4.00pm and 8.00pm to discuss the proposed Coumragappul project with members of the design team and view the most recent project design information.

The project team will also host the third Project Design Webinar on the 05/10/2022 between 7.00pm and 8.00pm. Please register for this online webinar at www.coumragappulwindfarm.ie/webinar.

Once you have had a chance to read through this project newsletter, and should you have any areas of the project you wish to discuss further, please contact the project team using the contact details on the back page of this Newsletter or on the project website (www.coumragappulwindfarm.ie).

How the Final Project Proposal Is Formulated

Wind farm design is governed by a series of legislative guidelines around set back distances, noise, visual and environmental constraints amongst others. Any proposed project which does not carry out its design by adhering to this legislation is unlikely to be granted a planning permission by the consenting authority.

The proposed Coumragappul wind farm project is being designed with the most up to date iteration of the guidelines for wind energy development in mind. This best in class, conservative approach seeks to future proof the proposed project for any new guidelines which may issue and ensures that the most suitable project design is selected and put forward for consideration in a planning submission.

The project's constraints mapping is continuously updated throughout the development's iterative design process. Design layout updates are based on the site investigations and assessments as they are completed. Some of the areas of this project's design process where we have had the most conversations with interested stakeholders and residents local to the proposed project's Study Area, are discussed in this Newsletter.

Who Are EMPower?

EMPower is an Irish renewable energy developer with over 700 MW in development in Europe and Africa. Our senior management team comprises five Irish professionals with a combined 95 years' experience delivering projects from conception to operation across five continents. EMPower's headquarters is in Dublin.

EMPower is owned by GGE Ireland Limited, Wind Power Invest A/S and EMP Holdings Limited.

Our vision is to provide low carbon, ecologically non-invasive, affordable energy to facilitate Ireland's expanding economy and sustainable energy targets.

Our Commitment

Our commitment is to engage meaningfully with our stakeholders on decisions that concern them. We aim to do this in a timely manner, and we commit to building relationships and starting a conversation on what aspects of this proposed renewable energy project could work best for this local area. We feel that designing any proposed project in this manner makes better social and business sense.

95 Years
Combined Experience of EMPower Management Team in Renewable Energy

700 MW+
Wind Energy Capacity Currently Under Development By EMPower

5 Continents
Combined Geographical Experience of EMPower Team in Renewable Energy



Why Onshore Wind

Onshore wind energy makes sense for Ireland for many reasons. It's a clean fuel source which does not pollute the air like power plants that rely on combustion of fossil fuels, such as coal or natural gas. Unlike conventional power plants, wind turbines don't produce atmospheric emissions that cause greenhouse gases when generating electricity and utilise a free domestic natural resource, produced in abundance in Ireland. An operating wind farm occupies a relatively small proportion of overall project area, approximately 3% footprint, so other land uses such as farming, recreation, commercial forestry, and biodiversity management can co-exist.

Climate change refers to the change in climate that is attributable to human activity arising from the release of greenhouse gases, in particular from the burning of fossil fuels (coal, oil, peat) for transport, electricity generation and agriculture.

The Government declared in May 2019 that Ireland was in the midst of a climate and biodiversity emergency. The Environmental Protection Agency (EPA) has stated that mean annual temperatures in Ireland have risen by 0.7° Celsius (C) over the past century and are likely to rise by 1.4°C to 1.8°C by the 2050's and by more than 2°C by the end of the century due to climate change.

EMPower can aid in the delivery of the Government's Climate Action Plan (June 2019) where a target of 70% of Ireland's electricity from renewable sources by 2030 was targeted. The Irish Government has recently increased this target to 80%. A firm commitment from the Irish Government on Climate Action is forming part of climate change legislation currently being publicised by our policy makers;

-  Halving our greenhouse gas emissions by 2030 and reaching net zero by 2050 at the latest
-  Increase renewable electricity – up to 80% by 2030
-  Provision for 5 year carbon budgets, consistent with emissions reduction pathway 2050.

Wind energy is currently the largest contributing resource of renewable energy in Ireland. It is both Ireland's largest and cheapest renewable electricity resource. At present the Republic of Ireland has over 300 operational onshore wind farms³ with a combined capacity of c.4,300MW and over 2,500 individual wind turbines. This represents an investment of over €7 billion, regularly powering 65% of Ireland's electricity needs. The wind energy industry also supports 5,000 jobs and annually pays more than €45 million in commercial rates to local authorities⁴.

Ireland is a country with enormous renewable energy resources and are world leaders at incorporating onshore wind into the national grid. Renewable energy provided 42% of Ireland's electricity in 2020, with over 86% of this coming from wind energy⁵. This is the highest share of electricity being provided by onshore wind in Europe⁶. In 2018 wind energy avoided 3.1 million tonnes of CO2 and cut €432 million off our fuel import bill⁷ demonstrating the huge contribution that onshore wind is making to climate action. This accounts for the second largest source of electricity generation in Ireland after natural gas. Ireland remains one of the leading countries in the deployment of wind energy and third place worldwide in 2018, after Denmark and Uruguay.



3 – Based on EirGrid generation reference numbers
4 – Economic impact of onshore wind in Ireland - KPMG April 2021
5 - <https://www.seai.ie/data-and-insights/seai-statistics/key-publications/energy-in-ireland/>
6 - <http://www.eirgridgroup.com/newsroom/electricity-consumption-f/index.xml>
7 - <https://www.seai.ie/publications/Energy-in-Ireland-2019-.pdf>

Project Design Process

In order to reach a final design proposal, we choose to undertake several separate design iterations. The design process for the proposed Coumnaagappul wind farm project started with a review of existing available baseline information. This helps to avoid or minimise potential impacts and includes a design process that limits the angle of slope of the ground where development can occur, including a setback distance from watercourses and residences, as well as a setback distance from any nearby European designated environmentally sensitive habitat sites. Following some ground truthing exercises this initial design step produces a potential "Buildable Area".

Following establishment of the project's "Buildable Area" an initial turbine layout is progressed which considers the separation distance required between each turbine position as well as the results of more detailed ground and habitat investigation surveys. The resulting layout is called Design Iteration 1. As further project studies evolve the location and alignment of the associated project's infrastructure, such as access roads and electrical infrastructure is then developed to produce Design Iteration 2. On completion of all the projects associated site investigations and surveys Design Iteration 3 is produced before a final design proposal is submitted to the consenting authority. After each stage of the above-mentioned iterative design process the project proposal is reassessed by our project specialists which leads to a robust final design. This evolving iterative design process establishes the proposed project infrastructure and is informed by rigorous Study Area assessments carried out over an extended period such as:

- Ecological and Aquatic Surveys
- Ornithological Surveys
- Geotechnical and Hydrological Ground Investigations
- Shadow Flicker Modelling
- Noise Modelling
- Archaeological Surveys
- Landscape and Visual Assessment



Also, in order to ensure that this project's Environmental Impact Assessment process is appropriately carried out, an information document detailing project particulars is prepared and circulated to a list of statutory and non-statutory consultees to ensure that the proposed project's Environmental Impact Assessment is addressing all relevant topics specific to the local area for this project.

The list of consultees can be individual for each project. For the proposed Coumnaagappul project this consultee list includes Waterford City & County Council, Fáilte Ireland, National Parks and Wildlife, Inland Fisheries Ireland, area telecommunication providers, Geological Survey Ireland, Transport Infrastructure Ireland, The National Monuments Service, The Aviation Authority, plus many more.

Why This Project?

Identifying a project Study Area suitable for a wind farm considers many different inputs. The suitability of the Study Area for the proposed Coumnaagappul project can be attributed, in part, to the following characteristics:

- Setback distances from houses can be achieved to align with the latest government guidance. The project team has already committed to a minimum setback of 740 meters between a dwelling and a proposed turbine location.
- There are very good annual average wind speeds in the Study Area.
- The Study Area is not within a Special Area of Conservation (SAC), a Special Protection Area (SPA) nor a Natural Heritage Area (NHA), although some of these areas do exist nearby.
- The Study Area is in an accessible location for connection to the National Electricity Grid via existing electrical substations and transmission lines in the local area.

Noise And Vibration

Noise is generated by wind turbines as they rotate to generate power. This only occurs above the 'cut-in' wind speed and below the 'cut-out' wind speed. Below the cut-in wind speed there is insufficient strength in the wind to rotate the blades and above the 'cut-out' wind speed the turbine is automatically shut down to prevent any malfunctions from occurring.

The 'cut-in' wind speed at the turbine hub-height is approximately 3 meters per second (11 kilometres per hour) and the 'cut-out' wind speed is approximately 25 meters per second (90 kilometres per hour).

The principal sources of wind turbine noise are from the blades rotating in the air (aerodynamic noise) and from internal machinery, normally the gearbox and, to a lesser extent, the generator (mechanical noise). The blades are carefully designed with a view to minimising noise whilst optimising power transfer from the wind.

If this project is consented vibration can potentially be generated by construction activities such as rock breaking and passing heavy goods vehicles. Construction noise can occur during excavation and earth moving, laying of roads and hard standings, transportation of materials and erection of the wind turbines. Construction activities will be phased and temporary. A full project life cycle noise and vibration assessment will be included as part of the planning submission.

Noise and vibration assessments are undertaken for the construction, the operational and decommission phases of the proposed development.

Baseline noise monitoring was undertaken at different receptor locations surrounding the Coumnaagappul wind farm's Study Area to establish the existing background noise levels in the vicinity of the proposed development.

These measurement locations were chosen as they represent some of the closest locations to the proposed project as well as representing different noise environments in the vicinity of the Study Area.



To inform the noise impact assessment, baseline noise monitoring of the existing noise environment for this proposed project was carried out over a four-week period. This process establishes the existing noise levels in the area prior to any potential development occurring and aids in the overall project design. Appropriate noise level limits are then determined in line with the latest Government policy and guidance.

The noise limits seek to strike a balance between the noise restrictions placed on a wind farm, the protection of local amenity and the national and global benefits of renewable energy development. The predicted noise emissions envisaged from the wind farm are then compared against these limits. The wind farm will be designed and operated in a manner that ensures the prescribed limits won't be exceeded. This will also be further validated with post construction noise monitoring surveys if the project is consented.

Land Soils And Geology

The geology of the project's Study Area consists predominantly of bog, with areas of otherwise upland pastures and mountain heath. Detailed investigations including site walkovers, peat stability assessments, trial pit excavations and bore holes were undertaken to better understand the geology of the Study Area. The subsoils present within the proposed project's Study Area comprise, blanket peat, sandstone till (Devonian) and surface bedrock.

If this project is consented, construction of the wind farm infrastructure will require the removal of subsoils and possibly rock to create solid foundations. Excavation of any bedrock and suitable off-site aggregate sources will provide appropriate construction material for access roads, turbine bases and general hard-standing foundations. Removal and reuse of subsoils and bedrock is not seen to represent a significant impact on the geology of the Study Area. No significant impacts or cumulative impacts on the soil and geological environment are anticipated as a result of the proposed wind farm and its associated grid connection route.

Biodiversity

In addition to desktop studies and assessments carried out as part of the project's Environmental Impact Assessment Report, extensive field surveys have also been carried out over several years. These surveys catalogued the different habitats, mammals, bats, birds as well as aquatic ecology throughout the project's Study Area and associated proposed grid connection and turbine delivery routes. The potential for adverse effects upon the local flora and fauna in these areas will be ascertained and documented.

The project's Study Area is not located within any European Designated sites. Some of the more sensitive Habitats located nearby are the River Blackwater (Cork/Waterford) Special Area of Conservation, the Nier Valley Woodlands Special Area of Conservation and the Comeragh Mountains Special Area of Conservation.

The proposed project's Study Area encompasses a mixture of habitat types generally dominated by areas of cutaway bog with wet heath vegetation and areas of exposed rock. There are smaller areas of conifer plantation and agricultural grassland within the Study Area. Grazing by sheep is widespread with grazing intensity varying within the overall Study Area.



Looking south from the center of the Coumnaagappul Project Study Area

Bird species found in the wider environs of the project's Study Area are typical of open bog, upland heath habitat and conifer plantation including species such as hen harrier, snipe, mallard, common gull, herring gull, merlin, cormorant, and kestrel. These species would also be some of the qualifying interests of some of the Special Protection Areas in the wider environs.



Looking west from Knockavannia mountain on the west side of the project Study Area

Hydrology And Hydrogeology

This chapter of the Environmental Impact Assessment Report will address the potential impacts on water quality in the receiving watercourses and the wider hydrological environment in general.

The proposed Coumnaagappul wind farm extends over the Southeastern River Basin District of Ireland (SERBD). The relevant waterbodies within the proposed Coumnaagappul wind farm area are the Colligan-Mahon water catchment areas. The Colligan River travels through the center of the proposed project's main Study Area and travels along the proposed project's southernmost boundary. Other tributaries join the Colligan which eventually drains into Dungarvan Harbour some 14km south of the proposed project's location. There are numerous man made and natural drains located within the Study Area. There are no larger waterbodies such as lakes or significant wetlands located within the project Study Area.

Drainage management will be employed to control drainage water during any proposed construction, ensuring that surface runoff from any developed areas of the proposed project will continue to be of good quality with no flood risk to the downgradient setting. A surface water monitoring programme will be put in place during the construction phase of this project if it is granted planning permission. Based on the proposed mitigation measures, there is no potential for significant impacts on the hydrology and groundwater as a result of the proposed Coumnaagappul wind farm project.



Population And Human Health

The Coumnaagappul project assessments examine the potential impacts of this proposed project (both beneficial and adverse) and also any potential wellbeing and nuisance effects which could be experienced by the local and regional community. The results of this assessment will be documented as part of the Environmental Impact Assessment Report which will accompany the planning submission. The key issues examined from a population and human health perspective include:

- Population Trends;
- Socio-Economics, Employment and Economic Activity;
- Existing land Use;
- Recreation, Amenity and Tourism;
- Human Health and Safety;
- Dust emissions from construction activities;
- Noise emissions during construction and operation;
- Public safety;
- Visual impacts during operation;
- Shadow flicker during operation;
- Traffic nuisance during construction;
- Tourism and recreational impacts.

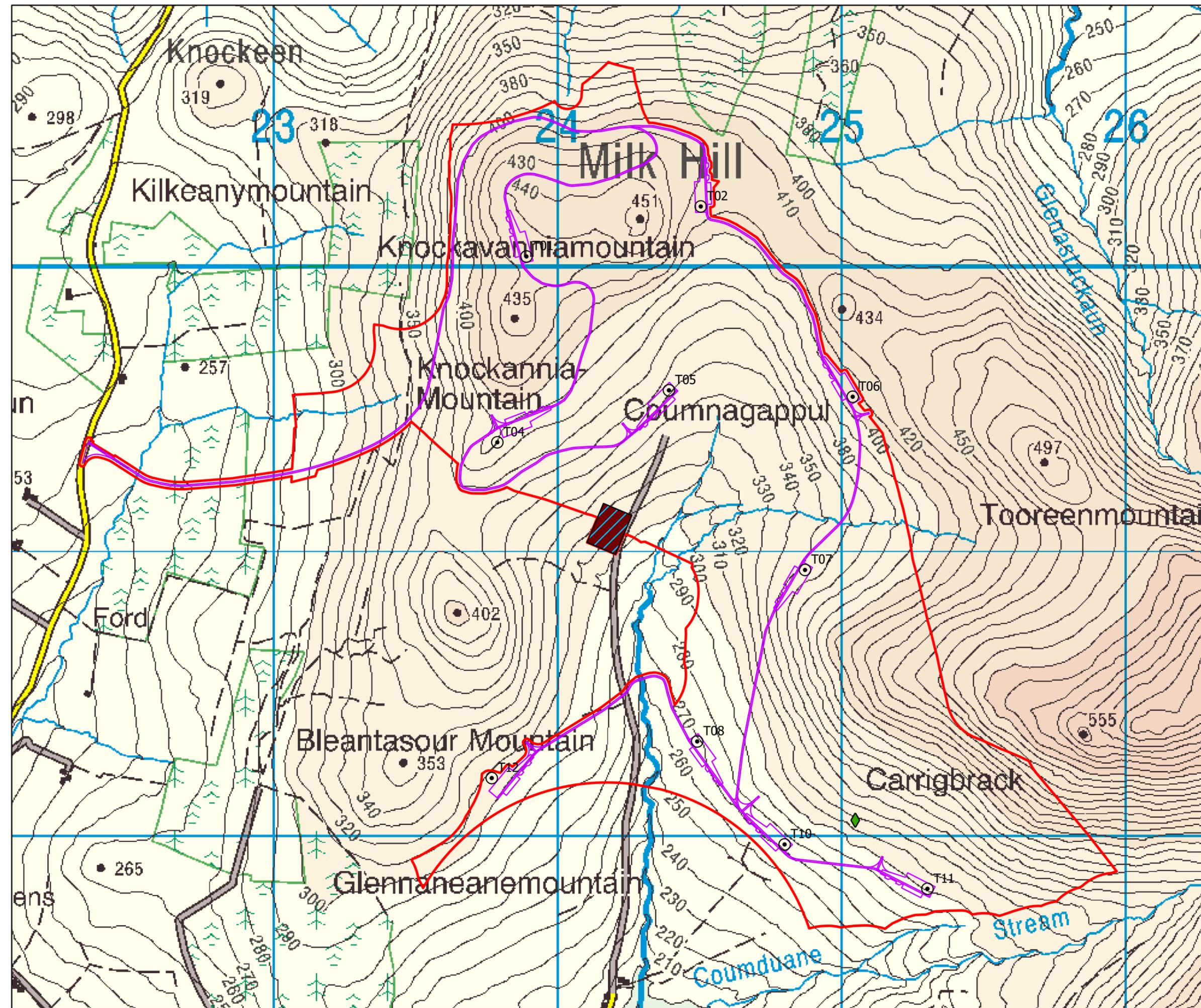


Example of typical upland Irish wind farm, Co Cork.

Project:
**Proposed Cumnagappul
Wind Farm
Co. Waterford**

Title:
Design Iteration 3

- Key:
- Indicative Turbine Infrastructure
 - Indicative Study Area
 - Indicative Substation Location
 - Temporary Met Mast



Scale: 1:12,500

0 0.13 0.25 0.5 km

Date: 23/09/2022 Prepared By: RG Checked By: MOC

