Oweninny Wind Farm

Oweninny
Environmental Impact Statement
Appendix 5B

Access Tracks, Hardstanding Areas, Electrical Compounds, Borrow Pit And Cable Laying Construction Method Statement

Contents

1 Introduction

1.1 General

The following document presents the Construction Method Statement for the access tracks, hardstanding areas, electrical compounds, borrow pit and cable laying at the proposed wind farm at Oweninny Windfarm, Bellacorick, Co. Mayo.

The development will consist of 112 No. turbines and their associated infrastructure on the site.

The development will consist of approximately 79km of new access track construction and 6km of upgrade to existing access tracks

The report provides a method statement on the proposed construction techniques suitable for the project.

2 Preliminary Site Investigation

2.1 General

Preliminary site investigations have been carried out at turbine locations on the Oweninny site. The purpose of the preliminary site investigations was to broadly determine the ground conditions across the site. This information is then used to identify the most appropriate solution for the structures on the site including roads, hardstandings, turbine foundations and ancillary buildings.

An interpretative site investigation report is provided as part of this planning application under a separate cover and this should be consulted for the detailed findings of the site investigation.

This method statement covers the approach and work methodology which will be used for access track and hardstanding construction where required.

2.2 Scope of Works

The preliminary site investigation consisted of 10 No. shell and auger boreholes, 9 rotary coreholes and approximately 1 No. trial pit near each proposed turbine location.

The trial pits allow a visual inspection of the ground at each turbine location to determine the depth of peat and to identify the requirements of the detailed site investigation at each proposed turbine location at the construction phase. They are also used to determine the ground conditions likely for the access track and hardstandings to enable a preliminary design to be carried out.

2.3 Ground Conditions

Ground conditions at the site generally consist of peat over glacial deposits interbedded with glacio-fluvial deposits over bedrock.

The peat across the site has been largely well harvested which results in relatively shallow peat depths recorded in many areas.

The glacial deposits generally consist of soft to very stiff boulder clay grading to medium dense to dense gravels. These are generally over consolidated strata and interbedded with what are most likely to be glacio-fluvial deposits consisting of loose to medium dense fine sand.

Bedrock has been geologically logged and is characterised as Sandstone or Mudstone.

The following table 1 briefly summaries the ground conditions at the site based on the rotary coreholes and boreholes:

Stratum	Depth to top (m bgl)	Thickness (m)
Peat	0.0	0.0 - 3.5
Glacial Till	0.4 - 3.5	7.0 - 22.65
Glacio-Fluvial Deposits	0.5 - 1.5	0.5 - 1.0
Bedrock	8.5 - 23.15	-

Table 1 – Summary of Ground Conditions

Ground water was observed in most trial pits and boreholes. In the permeable materials water ingress was rapid and at a shallow depth. It is therefore anticipated that the water table will be high across the site.

3 Access Track & Hardstanding Construction

3.1 General

An access track network and associated hardstandings will be constructed on site to facilitate the construction of turbine bases and erection of turbines. Approximately 85km of access track will be constructed in total.

Preliminary geotechnical investigations have been carried out across the site and the results have indicated the depth below ground level where there is adequate formation.

Access tracks and hardstandings will be designed and constructed to appropriate standards, taking account of the axle load of the vehicles and the total number of vehicles during the construction period.

Access tracks and hardstandings will generally be formed by excavating the existing overburden / peat and placing a layer of course granular fill followed by a 100mm layer of fine gravel directly on the formation level. All overall thickness of approximately 750mm is envisaged.

In some locations a layer of geotextile and/or geogrid will be used to provide additional strength to the access track.

Roadside drainage will be provided within the excavated width of the access track and will discharge into stilling ponds at regular intervals.

3.2 Existing Access Tracks

There is approximately 6km of existing access tracks on the site that require improvement works. This work may include widening, strengthening and bend improvements.

For sections along the existing access track that require widening a 3m strip adjacent to one side of the track will be excavated to formation level. Approved stone will be placed along the strip, tying into the existing track structure, to leave a minimum of a 5.5m wide completed track.

Following preliminary site investigation, sections of existing track that require strengthening have been identified. The weak/sub-standard sections of the existing track will be excavated and replaced with approved stone. In some locations that are likely to be heavily trafficked a blacktop layer may be applied.

To comply with turbine supplier specifications certain existing bends on the site require modifications to facilitate the delivery of turbine components. At these bends, the area will be excavated to formation level and approved stone will be placed in the area tying into existing track structure.

3.3 New Access Tracks & Hardstandings

The general method of construction of new access tracks and hardstandings will be as follows:

The alignment of the new access tracks and locations of hardstandings will be established from the construction drawings and the centrelines will be marked out with ranging rods or timber posts.

The access tracks will be of single-road design with an overall width of 5.5 m. Passing bays will be installed at regular intervals. There will be some local widening at the bends, junctions and around turbine bases for the safe passage of large vehicles. All bends are designed to suit the requirements of the delivery vehicles

The hardstanding areas will be of similar construction as the access tracks but could be up to the size of 130m by 90m (triangular in shape)

All machinery will work within the construction corridors that will be indicated on the contract drawings. Vehicle movement will be restricted to site roads except during road and base construction.

The access track and hardstandings will be excavated to a suitable formation. A layer of geogrid and/or geotextile may be required in specific locations. This layer will be rolled out along the access track and hardstandings, across the full width.

Well-graded suitable fill material either imported or from the proposed on site borrow pit will be spread and compacted in layers to provide a homogeneous running surface. The thickness of layers and amount of compaction required will be decided by the Site Manager based on the characteristics of the material, site investigation information and the compaction plant to be used.

In areas of shallow peat, the finished level of the access track and hardstandings will be above the existing ground level. Whereas, in areas where the peat depth exceeds 1m, the finished level may be below the existing ground level.

Where the removal of trees is required the area will be felled according to the felling plan and in line with Coillte standard procedures and where appropriate, the stumps will be removed. The top soil will be stock piled for use during reinstatement. In areas clear of trees the area will be cleared of all vegetation and surface soils and set aside for reinstatement. Material removed from cuttings will be hauled to fill areas where suitable. Suitable rock from either imported or borrow pit will be spread and compacted in layers. Final profiles will be completed with suitable material.

Any excavated peat will be placed and dressed along the upslope side of the tracks and hardstandings to blend in with the surrounding landscape and to provide a berm which will restrict the flow of surface run-off water into the excavation and the finished access track.

Where the finished access track level is below the surrounding natural ground levels the access track will be cambered to both sides and a v-notch drain will be constructed along both sides of the road, within the excavated width. Lateral finger drains will be constructed at required intervals along these sections of track to discharge the accumulated water. This water will either be channelled through settlement ponds or will be allowed to flow over the existing filter vegetation towards existing settlement ponds which exist throughout the site.

Cross-carriageway drains will be provided during track construction and where necessary, culverts extended or replaced. Ditches will be designed around the existing layout to minimise the effect on the existing site hydrology. In areas of cuttings with high batters, cut-off ditches will be formed where required. Where steep gradients are present then the ditches will be designed to prevent erosion, including the provision of check dams. The location of cable tracks and crossings will be considered and sections of ditch piped where required. During the construction period, the road drainage will be planned in such a way so as to minimize the production of silty run-off water. Check dams and/or filtration fences will be erected as and when required.

In areas of consistently deep peat, floating access tracks may be constructed. In this case, the top layer of peat will be retained and a layer of geogrid will be laid out. This will be overlain by stone, with a possibility for further georgrid overlain with a final layer of stone.

In all cases there may be a need for an upslope clean water cut-off drain to be installed, particularly in areas of significant crossfall to prevent surface water entering the construction zone. This clean water will be channelled away from the construction zones and re-directed back towards its natural drainage route.

Where surface run-off drainage from the hardstandings is present a dirty water cut-off drain will be constructed and this water channelled through settlement ponds before been discharged into the existing natural drainage system of the bog.

The settlement ponds will be monitored and cleaned out routinely during the construction phase with any excess silt disposed of in an environmentally controlled manner.

4 Electrical Substation / Contractors Compounds

The project will comprise of 4 electrical substations and a minimum of 4 temporary contractors compounds.

Surface soils will be excavated and set aside in storage bunds for reinstatement on completion of the project. These soils will be separated following best practice for re-use. Any existing drainage ditches will be diverted around the extent of the substations and compounds where necessary. Unsuitable soils will be excavated and stockpiled until a suitable formation is reached. Dependent upon the final civil design, geotextile or geogrids may be placed where required to ensure optimal weight distribution. Rock excavated from the on-site borrow pits and/or imported material will be spread and compacted in layers. Finer crushed rock will be used in the final layers to provide an adequately smooth running surface. Appropriate pollution control measures will be used as determined by the civil contractor.

5 Borrow Pit

Excavation and operation of the site borrow pit will be carried out with minimal disturbance to vegetation and hydrology at the site.

The borrow pit will be worked in strips, to ensure that only enough aggregate for the project is obtained, and to limit the impacts of the borrow pit to as small an area as possible. A borrow pit design and restoration plan will be produced prior to commencement of the works. Any top soils and sub-soils will be separated and progressively stored in a temporary storage area. The storage mound will be terraced, where possible, to ensure stability. All temporarily stored materials shall be utilised in the restoration of the borrow pit.

Where the excavation level for the borrow pit falls below the existing water table level the aggregate will be excavated and stored locally to facilitate “drying out” so the material can be used as suitable construction material for the site access track. Suitable drainage measures including suitably designed settlement ponds will be installed surrounding the borrow pit and laydown area.

6 Cable Laying

The position of trenches will be marked out and the line stripped of surface soils and set aside for reinstatement. The trench will be excavated to the required dimensions and the spoil set aside for backfill if suitable. Trenches will be excavated to follow the profile of the existing ground where practical. Typically, sand bedding will be placed and levelled following insertion of earth conductors (if required). The cable will be laid onto the sand bedding and a further layer of sand installed to provide suitable protection to the cable. Ducting may be needed in areas where the cable route crosses existing or proposed access tracks or where it is deemed more suitable for maintenance and safety.

Following testing by the electrical works contractor, the trench will be backfilled and compacted in layers with suitable material and reinstated with previously excavated surface soils. Cable ducts will be used over water crossings, under sections of track and hardstandings.

Cable markers will be used to mark the route of cables

Direct burying of cables by ploughing or similar method may be considered If deemed suitable by electrical and civil design teams.

7 Environmental Controls

The following environmental controls will be put in place during access track and hardstanding construction operations:

- Prior to construction the drainage and sediment control plan will be fully implemented with the required settlement pond and interceptor drains put in place.
- Excavated material will not be stockpiled within 10m of any watercourse and will be side cast on adjacent lands to a maximum depth of 0.5m more than 10m from any watercourse
- All fuels and oils will be stored in bunded storage areas.
- Spill trays will be provided for vehicle refuelling purposes and spill cleanup kits and training in their use will be provided to construction crews

Spoil from operations shall be placed upstream of a cut-off drain and settlement pond as part of the drainage control system. Alternatively this material will be placed in the area of the proposed deposition area.