

**KWF Grid Connection EIA Report 2023**

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**Volume C2: EIA 2023 Main Report**

**Chapter 16: Mitigation & Monitoring  
Arrangements**

**EIA Coordinator:**



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## 16 Mitigation & Monitoring Arrangements

### 16.1 Environmental Protection Mitigation Measures

Mitigation measures are measures which will avoid, reduce or offset adverse effects to the environment. The primary mitigation measures in the KWF Grid Connection development are mitigation by avoidance measures i.e the design of the development through the consideration of alternative grid connection routes and haul routes, as set out in [Chapter 4: Alternatives Considered](#).

#### **Water Quality Protection - Scheduling**

As part of the Standard Construction Methodology the underground cable will be constructed in 50m sections. As a section of the trenching and cabling is completed, this section will be reinstated before the next section is commenced. This measure will be implemented by the Construction Contractor and will reduce the potential for sediment laden runoff through reducing the source of sediment available at any particular point in time due to overburden storage and open trenches along works areas.

The following is a list of the environmental protection mitigation measures will be implemented during the construction of KWF Grid Connection.

#### **Invasive Species**

The spread of invasive plant species will be prevented through the steam cleaning of all site machinery before entering the site. All biosecurity measures will be in line with Irish Legislation (Regulation 49 of S.I. 477/2011 European Communities (Birds and Natural Habitats) Regulations 2011). This measure will be implemented by the Construction Contractor ahead of mobilizing to the construction site. This measure will prevent the spread of invasive species, by removing the source (i.e. invasive species) from site machinery, thus preventing introducing invasive species to the grid connection site.

#### **Water Quality Protection – Suspended Solids**

Single silt fences will be installed at construction works areas down-gradient of the proposed works. Temporary silt fencing / silt trap arrangements will also be placed along potential runoff drainage routes (i.e. between forestry mounds/ribbons). The roadside drain at the Knocknamona Windfarm Substation will be temporarily blocked during trenching works upslope of this drain. Silt fences are effective at removing larger particle sized solids, and the erection of silt fences, silt traps and blocking of drains at the KWF Grid Connection site will prevent entry to watercourses of sand and gravel sized sediment released from excavations and entrained in surface water runoff from works areas. This measure is a standard form of best practice sediment control commonly used on windfarm construction sites. Silt-fencing will be installed, by the Construction Contractor, ahead of groundworks. Silt fencing and silt trap arrangements will be regularly inspected and maintained during the construction phase to ensure their continued functioning to stated purpose. They will remain in place throughout the entire construction phase. If required, the silt fencing will be left in place until the ground has re-vegetated.

Temporary spoil heaps will be covered with polyethylene sheets during heavy rainfall events, and the excavation of cable trench, substation works and link road works will not be undertaken during periods of intense or prolonged rainfall. These measures will reduce the volumes of excavated material exposed to heavy rainfall, thereby reducing the risk of entrainment of suspended sediment in surface water runoff.

### **Water Quality Protection – Fuels and Oils**

All fuels required for construction activities will be stored in a designated location, away from main traffic activity, at the Woodhouse Substation Compound. All fuel will be stored in bunded, locked storage containers. Where refuelling is required along the proposed route, fuel will be brought to site by a 4x4 in a double skinned bowser with drip trays. The bowser will be bunded appropriately for the fuel usage volume for the time period of the construction. These measures will be implemented by the Construction Contractor, and will prevent the escape of fuels from storage containers, in line within best practice.

The plant and machinery used on-site will be regularly inspected for leaks and fitness for purpose, in order to minimise the risk of oil leakages from vehicles. Spill kits and absorbent material will be readily available on site, with a kit available in the bowser/4x4 and in all plant and machinery used on site. Both machinery operators and delivery personnel will be fully trained to deal with any accidental spills. This measure will ensure that any leaks are contained quickly and effectively and that the risk to downslope water bodies is minimised.

### **Water Quality Protection – Cements**

No batching of wet cement will take place on-site. Concrete requirements for the KWF Grid Connection are limited to c.4 loads of ready-mix concrete to construct the control building foundation, and the plinths and bunds in the Woodhouse Substation Compound. Therefore large volumes of cement will not be present on-site at any time.

Where concrete is delivered on site (at Woodhouse Substation compound only), only the chute will be cleaned, using the smallest volume of water practicable. No discharge of concrete washout waters to any artificial drain or watercourse will be allowed. Concrete washout bags will be placed under the chute to catch any washout wastewater. These measures will be implemented by the Construction Contractor during concrete pours, to prevent the concrete washout from entering drainage networks/watercourses, thus effectively removing the pathway for impacts to downstream waterbodies.

Weather forecasting will be used to plan pouring concrete for dry days; and, the pour site will be kept free of standing water and plastic covers will be ready in case of sudden rainfall event. This measure will minimize the exposure of wet concrete to rainwater runoff.

#### **16.1.1 Mitigation Measures relating to the Operational and Decommissioning Phases**

The underground cable may (though unlikely), require replacement during the operational stage. Also should Knocknamona Windfarm be decommissioned, then the underground cables will be removed from the ducting. These cable replacement/removal works both involve the re-opening of the jointing location along the forestry road and the later reinstatement of the road surface over the ducts. The following mitigation measures will be implemented:

- To minimise the risk of erosion of excavations by rainfall, works will not be undertaken during periods of intense or prolonged rainfall.
- To remove any suspended sediments in runoff from the works area, temporary silt fencing will be placed downslope of the jointing location before works commence.
- In order to minimise the risk of fuel/oil leaks, any machinery used will be inspected for leaks and fitness for purpose before being transported to the site, and spill kits will be readily available to deal with accidental spillage at all times.

- In order to prevent invasive species being transported onto the KWF Grid Connection site, any machinery which will be used for cable replacement/removal works will be steam cleaned before entering the site.

### **16.1.2 Environmental Management Plan**

The construction of the KWF Grid Connection will be carried out in accordance with the Environmental Management Plan (found in Volume D), and the implementation of the mitigation measures during construction works will be monitored by an Environmental Clerk of Works. Weekly auditing of the construction works for compliance with the Mitigation Measures will be carried out by the Environmental Clerk of Works, who will also monitor construction works in order to identify any unforeseen adverse effects to the environment. The Environmental Clerk of Works will be appointed by the Project Promoter, be independent of the Construction Contractor, and will report directly to the Promoter's Project Manager.

Once the KWF Grid Connection is constructed, the environmental management of the project will be carried out by the Knocknamona Windfarm site manager, who will be responsible for the implementation of mitigation measures during any KWF Grid Connection operational maintenance and decommissioning works.

**In addition, construction works will be carried out in accordance with the following guidelines;**

- Department of Transport - Traffic Signs Manual, November 2021: Chapter 8 Temporary Traffic Measures and Signs for Roadworks.
- Health and Safety Authority (2016): Code of Practice for Avoiding Danger from Underground Services.
- ESB Networks (2019) Code of Practice for Avoiding Danger from Overhead Electricity Lines (DOC-230910-BBA).

## **16.2 Monitoring Arrangements**

The Project Promoter of KWF Grid Connection (the 'Promoter') will employ a suitably qualified Environmental Clerk of Works (minimum NEBOSH Certificate in environmental management) who will be independent of the Main Contractor. The Environmental Clerk of Works will be employed for the duration of the pre-construction, construction and early operational stages, and will have a full time presence during the construction stage. The Environmental Clerk of Works will be adequately resourced to ensure strict compliance with the EMP and all relevant planning conditions.

The Environmental Clerk of Works will monitor the compliance of the construction works with the EMP, and will engage specialist environmental consultants, such as ecologists, hydrologists and archaeologists, as required.

### **16.2.1 Schedule of Monitoring**

During the construction of KWF Grid Connection, the **Environmental Clerk of Works** will carry out the prescribed monitoring through the implementation of the Environmental Management Plan, which includes:

- Monitor the implementation of environmental protection mitigation measures during construction works;
- Oversee the implementation of the environmental protection mitigation measures which form part of standard construction methodologies;
- Monitor the level of environmental effects caused by the development of the project and audit the effects of the development to the evaluations made in the EIA Report;
- Identify any unforeseen adverse effects to the environment in order to be able to undertake appropriate remedial action;
- Monitor the construction of the development in compliance with relevant planning conditions, including additional environmental monitoring conditions attached to planning conditions, conditions of licences or following third party feedback.

See [Volume D: Environmental Management Plan 2023 for KWF Grid Connection](#).

### **16.2.2 Responsibilities & Management**

It will be the overall responsibility of the Project Promoter to ensure that the KWF Grid Connection is developed as consented. The Project Promoter will engage a suitably qualified Environmental Clerk of Works, who will be independent of the construction Contractor for the duration of the construction stage. The Project Promoter will also contractually oblige Construction Contractors to carry out the works according to the Environmental Management Plan for KWF Grid Connection.

### **16.2.3 Resourcing of Monitoring Arrangements**

The Project Promoter will be responsible for the costs of monitoring and will provide sufficient resources to the Environmental Clerk of Works to monitor, auditing and report on the compliance of construction works in accordance with the Environmental Management Plan. The Environmental Clerk of Works will also be sufficiently resourced to employ environmental specialists where needed.

### **16.2.4 Role of the Environmental Clerk of Works**

#### **16.2.4.1 Monitoring of Construction Works**

On-going audits, will be carried out by the Environmental Clerk of Works, during the construction of KWF Grid Connection. The audits will record the:

- compliance with this EMP;
- environmental effects of the project against the evaluations made in the EIA;
- effectiveness of the environmental management of the project; and
- adequacy of the Promoters and Contractors response to any Corrective Action Requests.

The Environmental Clerk of Works will have a 'stop-works' authority to temporarily stop works at the site to avoid or react to an unforeseen adverse environmental event. Works will not be allowed to re-commence until the issue is resolved.

#### **16.2.4.2 Reporting**

An EMP Compliance Report will be prepared weekly during the construction stage, issued to the Project Supervisor Construction Stage (PSCS) for distribution and will be presented at all project Environment Health and Safety (EHS) meetings to ensure that 'live' issues are dealt with in a time efficient manner. The EMP Compliance Report will detail the findings and recommendations of the preceding monitoring and auditing activities and will include a detailed response from the Contractor to any of the recommendations contained in the previous report.

Template reporting and record sheets are included in Section 8 of **Volume D: Environmental Management Plan 2023 for KWF Grid Connection**. Including;

- Non-Compliance Report
- Register of Non-Compliance Reports Issued
- Environmental Training Record
- Register of Environmental Training
- Environmental Incident Record
- Register of Environmental Incidents
- Environmental Complaint Record Sheet
- Register of Environmental Complaints
- Control of Spread of Invasive Species Record Sheet

#### **16.2.4.3 Corrective Actions**

Where non-compliance is detected, a system of follow up and corrective action will be implemented. Corrective Action Requests (CARs) will be issued to the Contractor to ensure that prompt action is agreed and committed to, with a view to the effective resolution of any deviations from the EMP requirements. All Corrective Action Requests will be numbered and logged. CARs may be raised as a result of:

- A compliance audit; or
- A suggestion for improvement by a Statutory Body; or
- An incident or potential incident; or
- An internal or external communication.

#### **Related Document**

This Chapter 16: Mitigation & Monitoring should be read in conjunction with **Volume D: Environmental Management Plan 2023 for KWF Grid Connection**.