

BALLYNALACKEN WINDFARM PROJECT

Environmental Management Plan 2025



March 2025

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1 Introduction to the Environmental Management Plan

This is the Environmental Management Plan (EMP) for the Ballynalacken Windfarm Project. This EMP describes the approach to environmental management during the construction and early operational stages for the Ballynalacken Windfarm Project.

1.1 Objectives of the EMP

The objectives of the EMP are to:

- (a) identify management responsibilities and reporting requirements for environmental management;
- (b) identify the relevant Environmental Commitments;
- (c) set out the environmental protection measures to be implemented;
- (d) Outline how compliance with the EMP will be achieved; and
- (e) Promote best environmental practices for the duration of the development.

1.2 Purpose of the EMP

The purpose of this document is to communicate environmental protection measures that apply to the development of the Ballynalacken Windfarm Project to those with responsibility for carrying out works or activities on site so that any likely significant adverse effects of the development on the receiving environment can be prevented.

An Environmental Clerk of Works will be appointed and it will be their responsibility to ensure that the EMP is implemented through liaising with the Construction Site Manager and the Project Manager and by carrying out weekly audits on EMP compliance. The EMP will be an important contract document for the main construction contractor (Contractor) who will be contractually obliged to comply with the EMP and the requirements of the Environmental Clerk of Works.

1.2.1 Scope of the EMP

This EMP covers the construction stage of the Ballynalacken Windfarm Project.

1.2.1.1 Review and Update of the EMP

The EMP is considered a dynamic document and as such will be reviewed and updated as required throughout each stage of the Ballynalacken Windfarm Project development to ensure it contains the latest relevant information, Environmental Commitments and Environmental Protection Measures.

2 General Project Description

An overview of the Ballynalacken Windfarm Project is provided below, the full description of the project is provided in [Chapter 5: Description of the Proposed Development](#) of the [Proposed Ballynalacken Windfarm Project Environmental Impact Assessment Report \(EIAR\) 2025](#).

The proposal is to build a 12-turbine windfarm and ancillary works to be called Ballynalacken Windfarm Project and to connect the windfarm by underground cable to the EirGrid Ballyragget Substation. The windfarm will have an output capacity of greater than 50MW.

A description of the location, size and design of the Ballynalacken Windfarm Project; life-cycle stages of the project including construction, operation and decommissioning, and the predicted use of natural resources, the emissions and wastes from each stage; environmental and financial benefits including community benefit; vulnerability to major accidents and natural disasters; and a description of the proposed environmental management of the project, is provided in this chapter.

The proposed 12-turbine Ballynalacken Windfarm Project will comprise the following elements:

EIAR Nomenclature	Overview Description
Ballynalacken Windfarm	12 No. Wind Turbines and associated works including foundations and hardstanding areas, windfarm roads, electrical control building and internal underground cabling connecting the wind turbines to the control building, to be located in the townlands of Byrnesgrove; Commons; Ballymartin; Ballynalacken; Ballyouskill and Loughill.
Internal Cable Link	Underground cabling through the townlands of Ballymartin and Tinnalintan which will connect the Windfarm Control Building to the Tinnalintan Substation.
Tinnalintan Substation	110kV Electrical Substation in Tinnalintan townland and associated access road.
Ballynalacken Grid Connection	Underground Grid Connection from the Tinnalintan Substation to the existing EirGrid Ballyragget Substation through Tinnalintan, Coole and Moatpark townlands, and facilitating works in the EirGrid Substation.
Ancillary Works	Site entrances at the windfarm site and at the Tinnalintan Substation site, 1 no. met mast and associated access road, 1 no. telecoms relay pole, site drainage network, temporary construction compounds, temporary borrow pits, temporary works in private lands and along the public road corridor – including a blade transfer area in private lands at Damerstown West; public road widening works, landscaping and reinstatement works.

The Ballynalacken Windfarm Project is proposed for locations on elevated lands between the towns of Ballyragget and Castlecomer, County Kilkenny.

The relevant Figure/Drawings are listed in the table below

EMP 1	Ballynalacken Windfarm Project - Location on Discovery Mapping	End of this Chapter
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2.1 Location and overview description of Ballynalacken Windfarm Project

The Proposed Ballynalacken Windfarm Project comprises 12 No. wind turbines and associated foundations and crane hardstanding areas, underground cabling and site roads, electrical control buildings and ancillary works including a meteorological measurement mast, telecom relay pole and facilitating works along the public road network. The Ballynalacken Windfarm site is located in the townlands Ballynalacken, Ballymartin, Commons, Byrnesgrove, Ballyouskill and Loughill. This is an area equidistant between the towns of Ballyragget (4.3km) and Castlecomer (4.2km) in County Kilkenny, and 3.2km from the village of Ballinakill in County Laois. The villages of Ballyouskill and Attanagh are located 3km and 3.9km respectively to the northwest of the windfarm. The Project also includes underground cabling in Ballymartin and Tinnalintan townlands, a new electrical substation at Tinnalintan, and underground grid connection along the public road to Moatpark.

Wind Turbines: The turbines will be of the generic three-bladed up-wind rotor, horizontal axis, tubular tower turbines. The towers will be of tubular steel design, tapering from the base to the top where the nacelle will be mounted. The blades which are made of fiberglass reinforced epoxy. The nacelle at the top of each turbine tower will contain the generator and control unit. Access to the tower is via a staircase located outside on the hardstand and a secure hinged door into the tower.

Turbine Foundations and Crane Hardstanding Areas: Each wind turbine is secured to a reinforced concrete foundation that is installed below the finished ground surface. The turbines require the construction of foundations comprising concrete, steel reinforcement and aggregate, designed to engineer's specifications depending on the turbine model chosen. The foundation design will be dictated by the turbine manufacturer. A hard-core hardstanding area will be constructed adjacent to each wind turbine location to facilitate erection of the turbine during the construction phase and maintenance works during the operational phase.

Windfarm Roads: The windfarm site access roads comprise of newly constructed windfarm access roads, and the upgrading of existing private roads.

Internal Windfarm Cabling: The Internal Windfarm Cabling will link the turbines together into a turbine 'string' and connect these strings to the Windfarm Control Building. The Internal Cabling is generally under the windfarm roads.

Windfarm Control Building: A compound yard containing a control building will be constructed at the windfarm site to gather and regulate the electricity from the wind turbine cable strings. The Control Building will contain electrical and communications equipment, along with a storage room, canteen and welfare facilities.

Electrical Substation at Tinnalintan: A new EirGrid specification 110kV substation at Tinnalintan which will consist of a hardcore compound yard, surrounded by palisade fencing with entrance gates. Inside the palisade fence, in the hardcore compound yard are 2 No. control buildings with self-contained welfare facilities to be installed; electrical equipment and apparatus, a lightning protection monopole; and underground and overhead cabling.

Internal Cable Link: The electricity gathered and regulated at the Windfarm Control Building will be transmitted via underground cabling to the new 110kV Tinnalintan Substation, c.3km west of the Windfarm Site. The cabling will be installed under Windfarm Site Roads, agricultural lands, public road, and under Tinnalintan Substation hardcore area.

Ballynalacken Grid Connection: The Ballynalacken Grid Connection will connect the Tinnalintan Substation to the national electricity system at the existing EirGrid Ballyragget Substation in Moatpark townland. The grid connection will comprise underground cables and jointing bays and will be laid under hardcore area at the

Tinnalintan Substation, under private access road, under the local road L58442, under the Regional Road R432, and under the existing hardcore area associated with the EirGrid Ballyragget Substation.

Ancillary Works include met mast and telecom relay pole, site entrances, watercourse crossing, drainage system, site compounds, borrow pits, overburden management, forestry felling, hedgerow removal and fencing, as per:

- Met Mast, with a height of upto 30m will be constructed in Loughill to the east (across the valley) of the windfarm site
- Telecom relay pole (c.18m in height) will be erected in Ballynalacken townland in order to carry telecoms relay equipment which can be used to mitigate any communication links impacts.
- One site entrance from the R694 Regional Road at Byrnesgrove, and ten site entrances from Local Roads, through and around the site which will provide access to various parts of the windfarm (8 entrances), the met mast (1 entrance) and the Tinnalintan Substation (1 entrance);
- Three stream crossings will be required at the Ballynalacken Windfarm Project site (W1 – W3). 1 no. of these crossings will require a new culvert to be installed in the watercourse (W1), the other 2 no. crossings will require the installation of cables in the public road above the existing crossing structure (masonry culvert at W2, masonry arch bridge at W3).
- Drainage measures will be implemented during construction of Ballynalacken Windfarm, including surface water drains, upslope and downslope of works areas which will keep clean water separate from runoff from construction works areas that may be contaminated by sediment; and sediment control measures (such as silt traps and settlement ponds) to ensure that all water discharged is clean;
- Three construction compounds, to be used during the construction phase of Ballynalacken Windfarm. Construction Compound No. 1 will be located in Ballynalacken townland, Construction Compound No. 2 will also be located in Ballynalacken townland, and Construction Compound No. 3 will be located at the Tinnalintan Substation.
- Two borrow pits proposed on the Ballynalacken Windfarm Project site which will be used to quarry stone for construction. Post construction, borrow pits will be backfilled and covered with topsoil and reseeded;
- Soil deposition areas will be used to store soil on both a temporary basis and long-term basis at the windfarm site. Overburden stored on a temporary basis will be used to reinstate the borrow pits. Overburden will also be used to conceal the part of the turbine hardstands not required for routine maintenance of the wind turbines;
- Forestry felling will be carried out to facilitate the construction of the wind turbines and to create the bat buffer zone around the turbines in/adjacent to forestry lands. The felled areas will be levelled and landscaped as part of biodiversity management measures;
- Removal of hedgerow along some field boundaries to facilitate access and to create the bat buffer zone around the turbines. To mitigate this loss of habitat, a equivalent of new hedgerow will be planted as part of the proposed development and lengths of existing hedgerow will be enhanced through planting hedgerow species in gaps and thinner sections of the hedgerows;
- Erection of fencing – the Construction Works Area boundary will be fenced with livestock proof fencing; at the end of the construction phase, this fence will be removed and used to fence the operational boundary of the windfarm site. The operational fence around the Tinnalintan Substation will be according to EirGrid requirements – i.e. palisade fencing.

- Component haulage facilitating works – minor works along the public road network to facilitate the transport of large components to the windfarm site.

Windfarm Haul Routes: Construction traffic is proposed to access the windfarm site from the R694 (Castlecomer to Ballyragget Regional Road) at Byrnesgrove, south of the site. Access for construction and operational traffic throughout the site will be from Local Roads at Ballymartin, Ballynalacken, Ballyouskill, Loughill and Tinnalintan.

Relevant Figures (*included in Section 8 of this EMP*):

EMP 1 – Ballynalacken Windfarm Project – Location on Discovery Mapping

2.2 Main Construction Stage Activities

Construction stage activities will involve the following main works:

Table 1: Construction stage activities

• Pre-Construction Activities	• Overburden Storage Areas
• Site Compounds	• Turbine Foundations – excavation, steel reinforcement
• Site Entrances	• Turbine Foundations – pouring of concrete
• Construction Works Area Preparation	• Control Building & Tinnalintan Substation civil works
• Windfarm Roads	• Electrical Works
• Watercourse and wet drainage channel crossing works	• Wind turbine delivery and erection
• Felling of Forestry and Removal of Hedgerows	• Reinstatement of Lands
• Crane Hardstanding areas	• Hedgerow planting and enhancement

2.2.1 Method Statements

Method statements are used to explain project requirements through planned systems of work including work instructions for site staff and construction personnel. They are prepared for activities identified in the civil engineering and electrical works (outlined in the table above). Method statements are issued to all responsible personnel and those involved with the specified activity.

Method Statements will also be relevant to site safety and be attached to the site safety file for the project. However, any Method Statements relevant to environmental protection will be developed and appended to the EMP and communicated with the appropriate personnel. A register of Method Statements required throughout the project will be maintained in the site office.

Method Statements will be developed by the main contractor and approved by the PSCS ahead of any works on site. These will be included as Tab 8 at the end of this document.

As the project progresses, new activities or amendments will also require Method Statements. Method Statements may also be revised based on new information or improvements on site.

2.2.2 Construction Schedule

The main construction period will take c.12 months. The Contractor appointed to the construction of the project will be responsible for preparing a detailed construction schedule, taking account of any relevant planning conditions, seasonal requirements and health and safety considerations.

The detailed construction schedule will include a sequence of elements such as;

- Road widening works
- Clearance and construction of hardcore area for temporary compound and mobilisation of site offices.
- Construction of bunded area for fuel and diesel tanks.
- Construction of new access roads and hardstandings.
- Construction of drainage per Surface Water Management Plan.
- Excavation of the turbine foundations and hardstanding areas and storage of overburden for backfilling and re-use.
- Construction of the turbine hardstanding areas.
- Construction of turbine foundations, and pouring and curing of concrete for the foundations.
- Installation of underground ducting and construction of jointing chambers/bays for the Internal Windfarm Cabling, the Internal Cable Link, and the Ballynalacken Grid Connection.
- Construction and electrical commissioning of the Windfarm Control Building, and the Tinnalintan Substation.
- Connection works for the Ballynalacken Grid Connection in the EirGrid Substation at Moatpark.
- Facilitating works along the public road network and in lands adjacent to the public road for the transport of turbine components to the windfarm site.
- Installation of meteorological mast.

The construction programme will be developed by the main contractor in consultation with Kilkenny County Council ahead of works on site. These will be included as Tab 9 at the end of this document.

2.3 Other Activities in the vicinity of the Ballynalacken Windfarm Project

Other activities at and in the immediate vicinity of the Ballynalacken Windfarm Project site are:

- Agriculture – mainly cattle rearing, dairy and silage cutting
- Forestry – felling/thinning activities, forestry management
- Walking – presence of walkers along public roads
- Traffic – on public and private roads

3 Contractors & Personnel

A typical organisational structure, a format for Contact Details Sheets for the construction stage of the Ballynalacken Windfarm Project, along with the duties and responsibilities of various personnel and a description of environmental training and communication processes are outlined below.

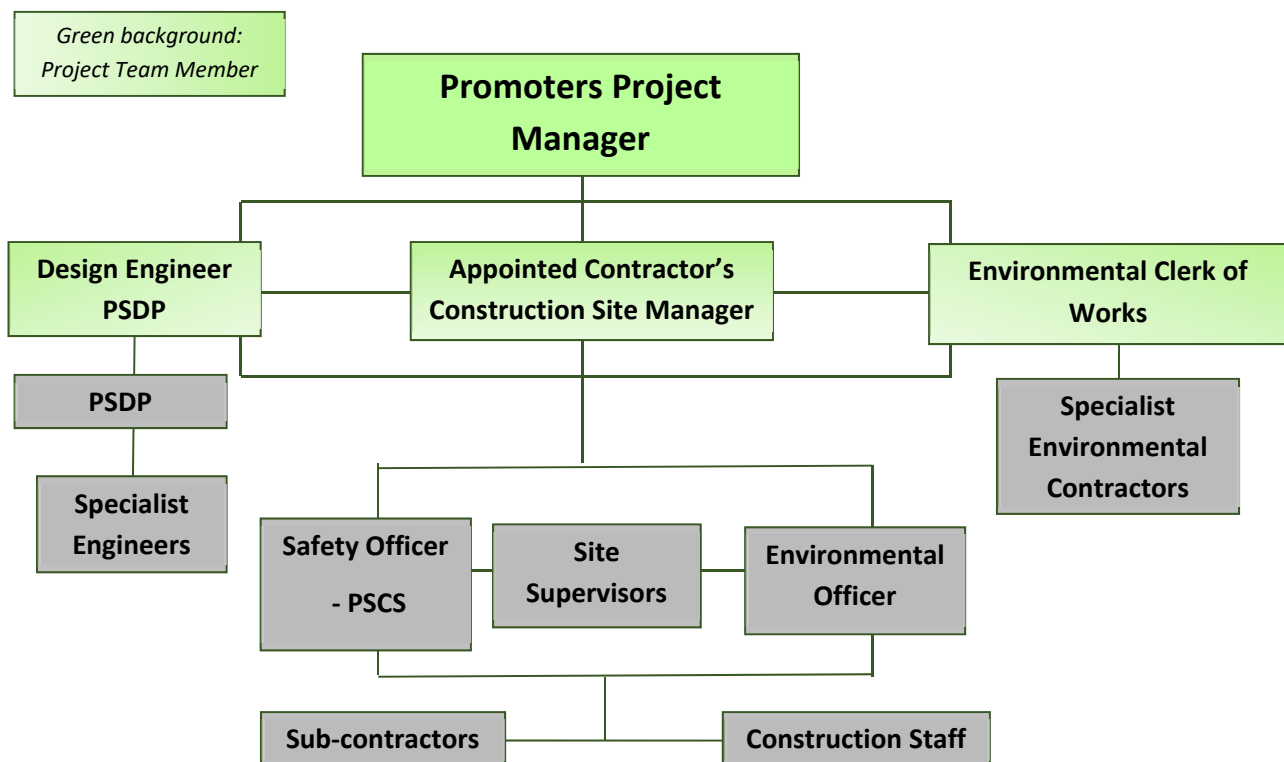
The construction Project Manager and Main Contractor will be appointed by the Promoter prior to commencement of the works. On appointment, the Project Manager and the Main Contractor will be required by the Project Promoter to update the outline organisational structure, the specific duties, roles and responsibilities of appointed personnel, contact details for these personnel, implement training programs and policies regarding communications.

It should be noted that the contractors and personnel for the construction stage are also relevant to the pre-construction stage.

3.1 Organisational Structure and Hierarchy

The organogram below illustrates the typical reporting and hierarchal structures which will be implemented during the various stages of the Ballynalacken Windfarm Project development. These organograms will inform the duties and responsibilities of all personnel under the EMP.

3.1.1 Construction Stage



3.2 Contact Details

Contact details of relevant personnel are provided in Tables 2 to 4 below to ensure the efficient reporting of environmental incidents. The details will be frequently reviewed by the Environmental Clerk of Works to ensure that they are up-to-date.

3.2.1 Construction Stage Contact Details

Table 2: Project Promoters Contacts

Position Title	Name	Mobile Phone Number	Email Address
Project Manager	TBC		
Design Engineer	TBC		
Environmental Clerk of Works	TBC		

Table 3: Main Contractors Contacts

Position Title	Name	Mobile Phone Number	Email Address
Construction Site Manager	TBC		
Environmental Officer	TBC		
Safety Manager – PSCS	TBC		
Safety Officers (24-hour number)	TBC		
Site Emergency Number (24-hour)	TBC		

Table 4: Third Party Contacts

Organisation	Name	Position Title	Phone Number	Email Address
Emergency Services	TBC			
Health & Safety Authority	TBC			
Kilkenny County Council	TBC			
Inland Fisheries Ireland	TBC			
National Parks & Wildlife Service	TBC			
Environmental Protection Agency	TBC			
Uisce Eireann	TBC			
Waste Management	TBC			
Emergency Oil Spill Response	TBC			

3.3 Duties & Responsibilities

3.3.1 Project Promoter

The Project Promoter (the 'Project Promoter' or 'Promoter') of the Ballynalacken Windfarm Project has overall responsibility for the implementation of the environmental commitments and of environmental management of the works during construction and operation.

3.3.2 Project Team Members – Construction Stage

The project team will be appointed prior to the commencement of the construction stage. The roles and responsibilities outlined below are indicative at this stage in the project and will be updated pending planning consent, conditions of planning and the appointment of the Main Contractor, details of the personnel involved along with their responsibilities will be added to the EMP. An outline of potential duties and responsibilities for various members of the project team is provided below. These details will require revision prior to the commencement of construction.

3.3.2.1 Project Promoters Project Manager

A Project Manager is appointed by the Project Promoter to manage and oversee the entire project.

The Project Manager's responsibilities include, but are not limited to, the following:

- management of the construction project, including the production of a construction schedule and the procurement of construction materials;
- liaison with the Project Promoter;
- liaison with the Main Contractor, Construction Site Manager and Project Team;
- liaison with the Environmental Clerk of Works
- implementing of the Environmental Management Plan;
- implementing the EMP sub-plans, and the Safety and Health Plan;
- assigning duties and responsibilities in relation to the EMP;
- maintaining a site project diary.

3.3.2.2 Construction Site Manager

The Construction Site Manager manages all the works to construct the windfarm, on behalf of the Main Contractor. The Construction Site Manager reports to the Promoters Project Manager. In relation to the EMP, the Construction Site Manager is responsible for:

- Being aware of and familiar with all Environmental Commitments and Environmental Protection Measures;
- Ensuring that all relevant information on project programming, timing, construction methodology, etc., is communicated to the Promoters Project Manager and to the Environmental Clerk of Works, in a timely and efficient manner, in order to allow pre-emptive actions relating to the environment to be taken where required;
- Ensuring that the Environmental Commitments are implemented;
- Ensuring that adequate resources are provided to design and install any environmental interventions;
- Liaising with the Design Engineer and providing information on environmental management to the Design Engineer during the course of the construction phase;

- Liaising with the Project Team in assigning duties and responsibilities in relation to the EMP to individual members of the main contractor's project staff;
- Preparing site-specific Method Statements for all works and activities where there is a risk of environmental damage, by incorporating relevant Environmental Protection Measures;
- Liaising with the Environmental Clerk of Works in reviewing and updating site-specific Method Statements for all Works activities where Environmental Protection Measures had been altered, and
- Liaising with the Environmental Clerk of Works where third-party agreement is required in relation to site-specific Method Statements and Environmental Protection Measures.

3.3.2.3 Design Engineer

The Design Engineer reports to the Promoters Project Manager and is responsible for:

- Design of the Works;
- Reviewing and approving relevant elements of the method statements – assisting the Construction Site Manager with the overall review;
- Consulting and liaising with Third Parties, where required;
- Updating/amending designs where required;
- Ensuring the Ballynalacken Windfarm Project is constructed according to the planning drawings and consent.

3.3.2.4 Environmental Clerk of Works

The Environmental Clerk of Works is appointed by the Promoter and is independent of the Appointed Contractor. The Environmental Clerk of Works reports directly to the Promoters Project Manager. The duties and responsibilities of the Environmental Clerk of Works are outlined in the subsections below.

3.3.2.4.1 General

- Manage a team of Environmental Managers and assigning duties and responsibilities in relation to the EMP to individual members
- Being familiar with the contents, environmental commitments and requirements contained within the Reference Documents outlined in Section 4.1 of this EMP;
- Provision of information on environmental management to the Design Engineer during the course of the construction phase;
- Liaising with the Project Promoter in relation to environmental issues;
- Monitoring construction activities and auditing compliance of construction works with Environmental Protection Measures; and
- Monitoring the implementation of the Environmental Commitments;
- Preparing weekly EMP Compliance Reports.

3.3.2.4.2 Compliance Auditing

- Carrying out daily documented inspections and audits of the site and construction works to check that work is being carried out in accordance with the Environmental Commitments and Environmental Protection Measures set out in Section 4 and Section 5 of this CEMP.
- Carrying out daily inspections of the fuel/oil storage area and the site drainage system.

- Liaising with the Construction Site Manager to organise any repairs or maintenance required following the regular inspections of the site.
- Weekly reporting on the compliance of the construction works with the EMP
- Reporting on the environmental effects of the project against the predictions made during the Environmental Impact Assessment process;
- Reporting on the effectiveness of the environmental management of the project;
- Reporting on the adequacy of the Promoters and Contractors response to any Corrective Action Requests
- Appending copies of the inspection reports to the EMP.

3.3.2.4.3 Detailed Method Statements

- Liaising with the Construction Site Manager regarding Method Statements for all works activities where there is a risk of environmental damage to ensure that these method statements incorporate the relevant Environmental Protection Measures.
- Liaising with the Construction Site Manager in reviewing and updating the Method Statements where Environmental Protection Measures have been altered.

3.3.2.4.4 Third Party Consultations

- Overseeing, ensuring coordination and playing a lead role in third party consultations required statutorily, contractually and in order to fulfil mitigation/best practice requirements;
- Ensuring that the minutes of environmental meetings, action lists, formal communications, etc., are well documented;
- Liaising with all prescribed bodies during any site visits, inspections and consultations;
- Where new Environmental Protection Measures are agreed as a result of third-party consultation, ensuring that the EMP is amended accordingly and liaising with the Construction Site Manager to ensure that any relevant Method Statements are updated.

3.3.2.4.5 Licensing

- Confirming that all relevant works have (and are being carried out in accordance with) the required, planning consents, permits, licences etc.;
- Where relevant, liaising with the designated licence holders with respect to licences granted pursuant to the Wildlife Act, 1976, as amended;
- Bringing to the attention of the Project Team any timing and legal constraints that may be imposed on the carrying out of certain tasks.

3.3.2.4.6 Engaging Specialist environmental contractors

- Identifying requirements for specialist environmental contractors (for example ecologists, spill clean-up specialists etc.) before commencement of the project;
- Procuring the services of specialist environmental contractors when required and liaising with them with respect to site access and report production;
- Ensuring that the specialist environmental contractors are competent; and
- Co-ordinating the activities of all specialist environmental contractors.

3.3.2.4.7 Environmental Induction Training and Environmental Toolbox Talks

- Confirming that Environmental Induction Training is carried out for all site personnel. No personnel will be allowed to work on the site without proof of attendance at an Environmental Induction.
- Confirming that toolbox talks on Environmental Protection Measures associated with Site-specific Method Statements have been provided by the Contractor to those who will undertake the work.

3.3.2.4.8 Environmental Incidents/Spillages

- Have the authority to temporarily stop works over part of the site to avoid an environmental offence being committed;
- Prepare and be in readiness to implement at all times environmental emergency response measures, see Tab 4 of this EMP.
- Notifying the relevant statutory authority of environmental incidents, and
- Carrying out an investigation and producing a report regarding environmental incidents. The report of the incident and details of remedial actions taken will be made available to the relevant authority, the Promoter and the Project Team.

3.3.2.5 Other Roles**3.3.2.5.1 Specialist Environmental Contractors****Project Ecologist**

An ecologist will be appointed by the Environmental Clerk of Works and will be responsible for:

- Advising the Environmental Clerk of Works, Project Manager, Construction Manager and Project Promoter on relevant wildlife/environmental legislation and aid in the development of practical solutions
- carrying out the habitat and species surveys during the appropriate periods
- aiding with the implementation of biodiversity related planning conditions
- monitoring and aiding with the implementation of biodiversity related Environmental Protection Measures
- monitoring vegetation clearance
- monitoring the success of the re-vegetation work, including hedgerow planting and enhancement and the landscaping of felled forestry areas around the turbine.

Project Hydrologist

A hydrologist will be appointed by the Environmental Clerk of Works and will be responsible for:

- Monitor the implementation of the Surface Water Management Plan (SWMP)
- Carrying out of site inspections in accordance with the SWMP
- carrying out of water quality monitoring prior to, during and post construction

Project Archaeologist

An archaeologist will be appointed by the Environmental Clerk of Works and will be responsible for:

- communicating with the National Monument Service regarding licences etc.
- carrying out of archaeological surveys during the appropriate periods at the identified locations
- monitoring of groundworks associated with the development.

3.3.2.5.2 Project Supervisor Construction Stage - PSCS

The PSCS for the construction project is appointed by the Main Contractor in line with the Construction Regulations:

- carrying out duty of Project Supervisor Construction Stage
- responsible for safety induction of all staff and personnel on site
- implementing the Health and Safety Plan
- auditing and updating the Health & Safety Plan
- all other relevant legal Safety duties
- implement and record the Waste Management Plan
- Holding copies of all permits and licences provided by waste contractors;
- Ensuring that any operations or activities that require certificates of registration, waste collection permits, waste permits, waste licences, etc., have appropriate authorisation, and
- Gathering and holding documentation with the respect to waste disposal.

3.3.2.5.3 Community Liaison Officer (CLO)

The CLO is responsible for communicating with the local community and wider public, including;

- Responding to any concerns or complaints raised by the public in relation to the construction of the Ballynalacken Windfarm Project;
- Liaising with the Environmental Clerk of Works on local community concerns relating to the environment;
- Keeping the local community informed of project progress and any construction activities which may cause inconvenience to them.

3.3.2.5.4 Landowner Liaison Officer (LLO)

The LLO is responsible for communicating with the landowners involved in the Project, including;

- Monitoring the erection and maintenance of the construction works area boundary fences;
- Liaising with the landowners regarding the location of access gates along the construction works area boundary fences;
- Keeping the landowners informed of project progress and any construction activities which affect them;
- Responding to any concerns or complaints raised by the landowners in relation to the construction of the Ballynalacken Windfarm Project;
- Liaising with the Environmental Clerk of Works on landowner concerns relating to the environment.

3.3.2.5.5 All site personnel

All site personnel are responsible for:

- Adhering to the relevant Environmental Protection Measures and site-specific Method Statements
- Reporting immediately, to the Construction Site Manager and the Environmental Clerk of Works, any incidents where there has been a breach of agreed procedures including any spillage of a potentially environmentally harmful substance; damage to a protected habitat, etc.

3.4 Environmental Awareness Training

Environmental Awareness Training will be provided to ensure that all of the appointed Contractors site personnel have the appropriate knowledge to successfully implement the EMP. The main objective of the training is to make sure that site personnel are aware of the relevant Environmental Commitments and Environmental Protection Measures and that site personnel are aware of the steps to take in an environmental emergency situation.

3.4.1 EMP and Contractual Requirements Briefing

The Environmental Clerk of Works will regularly brief the relevant project team members on the compliance with the EMP and on the Environmental Commitments which must be met and the Environmental Protection Measures which must be implemented during the construction.

3.4.2 Environmental Induction Training

The Environmental Clerk of Works will provide Environmental Induction Training for all project team members. All other site personnel, including sub-contractor personnel, will receive relevant environmental induction training in conjunction with safety induction training.

Every member of the main Contractors and sub-contractor's teams must have access to and have read the EMP prior to beginning works – this will be a strict requirement for all people working on this project. No workers will be allowed to work on this project without having attended a formal Environmental Induction. The induction training will ensure that both Contractors employees and subcontractors are fully informed of their responsibilities regarding specific environmental obligations. The induction will outline the objectives for the environmental management of the site, identify the relevant environmental sensitivities and outline the Environmental Protection Measures to be put in place to prevent significant adverse impacts to the environment. Signed training records will be kept by the Environmental Clerk of Works for all environmental training provided.

3.4.3 Task Specific Training – Toolbox Talks

Where a site-specific Method Statement (one which incorporates Environmental Protection Measures) has been devised for a works activity, all site personnel involved in that activity will receive a toolbox talk outlining the Environmental Protection Measures. The Site Supervisor will be responsible for providing the toolbox talk and will provide signed training records to the Environmental Clerk of Works.

3.5 Communication

Procedures for both internal and external communication of information regarding specific elements of the Ballynalacken Windfarm Project will be implemented during the construction of the development.

3.5.1 Internal Communication

During construction, the Environmental Clerk of Works will be responsible for communicating the Environmental Commitments, Environmental Protection Measures and Emergency Contingency Measures to the main Contractor, who will communicate them to the Site Supervisors, who in turn will bring the relevant Environmental Protection Measures to the attention of all site personnel.

Important environmental information on specific elements of the Ballynalacken Windfarm Project will be communicated to contractors and site personnel through site inductions, site management meetings, safety

meetings and toolbox talks. The Environmental Clerk of Works will attend and report on environmental issues at the site management meetings.

3.5.2 External Communication with Landowners and the General Public

Communications with landowners will be managed by a Landowner Liaison Officer (LLO), while communication with local residents and the general public will be managed by a Community Liaison Officer (CLO), appointed by the Promoter.

A two-way mechanism will be put in place whereby landowners and members of the public will be able to communicate with the LLO or CLO, as appropriate, and the LLO or CLO will be able to communicate important information on various aspects of the development to the landowners or to the general public, as appropriate.

A complaints register will form part of the public communications strategy. Any complaints will be handled by the Community Liaison Officer with the complainant receiving a response within one week after lodging the complaint.

All environmental complaints will be directed to the Environmental Clerk of Works.

4 Environmental Commitments

The Environmental Commitments are the obligations and requirements which will be implemented during the development of the Ballynalacken Windfarm Project to avoid, prevent or minimise significant adverse impacts to the environment.

The current List of Environmental Commitments, listed in Table 5 below, arises from the **Proposed Ballynalacken Windfarm Project Environmental Impact Assessment Report**

Table 5: List of Environmental Commitments (ECs) – to be updated

Environmental Commitment	Implemented By: Construction Manager/ Env. Clerk of Works / Project Manager / Other	Method by which the EC will be met
The Project Promoter is committed to constructing the Project in accordance with the permitted layout and final detailed design (Tab 1 and Tab 2)	Project Team	Planning Conditions and Planning Drawings incl Drainage Drawings
The Project Promoter is committed to implementing the Mitigation & Monitoring Arrangements contained in Tab 3 , Temporal Restrictions contained in Section 5.1 and Environmental Survey Requirements contained in Section 5.2	Project Team and specialist environmental and engineering experts	Incorporation of the Mitigation Measures listed below into Method Statements/ Management Plans/ Environmental Management Procedures/ Temporal Restrictions / Surveying Requirements.
The Project Promoter is committed to implementing the Environmental Response Procedures (Tab 4)	Project Team	Implementation of Emergency Response actions if required
The Project Promoter is committed to implementing the Traffic Management Plan (Tab 6)	Project Team	Traffic Management Plan
The Project Promoter is committed to implementing the Surface Water Management Plan (Tab 5) and constructing the site drainage system (Tab 2) .	Project Team Site Hydrologist	Surface Water Management Plan Drainage Drawings
The Project Promoter is committed to implementing the Waste Management Plan (Tab 7)	Project Team	Waste Management Plan
The Project Promoter is committed to monitoring the development to check that the project is in practice, conforming to the predictions made in the EIA Report.	Project Team and specialist environmental and engineering experts	EMP Compliance Record Sheets Environmental Surveying Requirements (monitoring arrangements)

4.1 Reference Documents

The List of Environmental Commitments will be updated with any relevant changes to the Reference Documents, listed in Table 6.

Table 6: List of Reference Documents

Location	Reference Document Title
Tab 1	Grant of Permission including Planning Conditions
Tab 2	Site Drainage Drawings
Tab 3	Mitigation & Monitoring Arrangements
Tab 4	Emergency Response Procedures
Tab 5	Surface Water Management Plan
Tab 6	Traffic Management Plan
Tab 7	Waste Management Plan

5 Environmental Protection Measures

The current Environmental Protection Measures comprise:

- Tab 3 - Mitigation & Monitoring Arrangements Environmental Management Procedures
- Tab 5 -Surface Water Management Plan
- Tab 6 -Traffic Management Plan
- Tab 7 - Waste Management Plan Management Plans: – Traffic, Surface Water, Waste, and Biodiversity Management Plans,
- Section 5.1 below, Temporal Restrictions, and
- Section 5.2 below, Environmental Survey Requirements (monitoring arrangements).

The Environmental Protection Measures will be reviewed regularly by the Environmental Clerk of Works and kept up to date to reflect additional environmental conditions attached to planning conditions, conditions of licences, following third party feedback or any additions to the Environmental Commitments.

5.1 Temporal Restrictions

The temporal/potential temporal restrictions which form part of the Ballynalacken Windfarm Project are listed in Table 7. This table currently includes the temporal restrictions which form part of the EIAR Mitigation & Monitoring Arrangements, and will be updated with any additional restrictions as set out by planning conditions or proposed during the course of the planning process.

Table 7: Temporal Restrictions

ENVIRONMENTAL PROTECTION MEASURE – Temporal Restrictions	
Title:	Temporal Restrictions
Responsibility	Role/Duty
Project Manager	Liaising with the Construction Manager, Environmental Clerk of Works and Site Ecologist regarding temporal restrictions
Scheduling of Works included as Project Design Environmental Protection Measures	
MM03	Land reinstatement will not be carried out during very wet weather or when the soil is waterlogged. If any compaction has occurred along the construction works area, these areas will be ploughed with a sub-soiler to loosen the subsoil layer.
MM11	Weather forecasts will be consulted in advance of works. If there is heavy prolonged rainfall or if an exceptional rainfall event occurs, then construction works will cease until peak flows have subsided.
MM27	In-stream works in wet drainage channels (D1, D2) will only be undertaken during the IFI specified period (July, August and September) and will be carried out in accordance with the <i>Guidelines on Protection of Fisheries during Construction Works in and adjacent to Waters</i> (IFI, 2016).
MM28	Works at W2 and W3 will take place when the Rathduff_15 is in its dry state and the works at W2 or W3 will be planned for periods of dry weather.
MM32	<p>No Otter holts were recorded within 150m upstream or downstream of watercourse crossing locations during pre-planning surveys, however should a new holt be identified in the interim period during pre-construction surveys (see SM04), then all construction works within 150m of the active otter holt, will be carried out during daylight hours and outside of 2 hours after sunrise or before sunset during summer/outside of 1 hours after sunrise or before sunset during winter. If an active holt (particularly holts at which breeding females or cubs are present) is located within 150 meters of the watercourse crossing points, no works will be undertaken while cubs are present in the holt and NPWS will be notified immediately. Except under license, no wheeled or tracked vehicles (of any kind) will be used within 20m of active, but non-breeding otter Holts, and light work, such as digging by hand or scrub clearance will not take place within 15m of such holts.</p> <p>The prohibited working area associated with otter holts will, where appropriate, be fenced with temporary fencing prior to any invasive works and declared as 'out of bounds'. Appropriate awareness of the purpose of the enclosure will be conveyed through toolbox talks with site personnel and sufficient signage will be placed on each exclusion fence. All contractors or operators on site will be made fully aware of the procedures pertaining to each affected holt and subject to audits and non-conformance records in the event of non-compliance, to be included in reports submitted to Local Authorities and relevant Statutory Consultees.</p>
MM39	Forestry felling will be completed at least 6 months prior to the commencement of operation of the wind turbines.
MM42	Hedgerow removal, tree felling, and scrub clearance will take place outside of the bird breeding season (1st March to the 31st of August).
MM45	No Kingfisher nests were recorded within 300m upstream or downstream of watercourse crossing locations during pre-planning surveys (see SM05), however should a new nest be identified in the interim period during pre-construction surveys, then no construction activities will be permitted within 300m of Kingfisher nest locations during the bird breeding season (March – August inclusive) or until nesting is confirmed as complete following supervision by a suitably qualified Ornithologist.

MM48	Construction operations shall generally be restricted to between 0700-1800hrs Monday to Friday, and 0700-1400hrs on Saturdays. Site activities which are likely to create high levels of noise or vibration will be limited to these hours of operation. However, to ensure that optimal use is made of good weather period or at critical periods within the programme (i.e., concrete pours) or to accommodate delivery of large turbine component along public routes it could be necessary on occasion to work outside of these hours.
MM51	Plant and machinery will not be permitted to idle. Machinery used intermittently will be shut down or throttled back to a minimum when not in use, and if any plant/machine is required to operate before 07:00hrs or after 19:00hrs, then it will be surrounded by an acoustic enclosure or portable screen. The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produces by on-site operations. All vehicles and plant will be fitted with effective exhaust silencers. Noise dampeners will be fitted where required.
MM65	The largest traffic volumes are associated with the concrete pours for the turbine foundations. No other deliveries to the windfarm will be scheduled to occur on the same days as the concrete pours.

5.2 Environmental Survey and Monitoring Requirements

The surveys and monitoring arrangements which form part of the Ballynalacken Windfarm Project are listed in Table 8. This table currently includes the surveying and monitoring measures which form part of the EIAR Mitigation & Monitoring Arrangements and will be updated with any additional surveying or monitoring requirements set out by planning conditions or proposed during the course of the planning process.

Table 8: Environmental Survey and Monitoring Requirements

ENVIRONMENTAL PROTECTION MEASURE – SURVEYING and Monitoring	
Title:	Surveying Requirements
Responsibility	Role/Duty
Environmental Clerk of Works	Liaising with the Environmental Management Team and environmental specialists regarding pre-construction, during construction and early operational surveys, and communicating the results of these surveys to the Project Manager and Construction Manager/Asset Manager.
Pre-construction surveying requirements	
SM01	A suitably qualified geotechnical engineer will review and approve the civil contractor's method statements and final detailed design prior to the commencement of construction works.
SM02	Confirmatory surface water quality monitoring will be carried out prior to the commencement of construction works at the water quality monitoring locations to determine the current status of surface water quality in downstream watercourses. This monitoring will include laboratory analysis of water samples which will be carried out by an independent and appropriately certified laboratory. The monitoring of water quality parameters and collection of samples will be undertaken by the Environmental Clerk of Works, who will be appropriately trained on the required monitoring methods and the use, calibration and maintenance of all monitoring equipment used. The surface water monitoring locations and sampling programme are defined in the Surface Water Management Plan which forms part of the Ballynalacken Windfarm Project Environmental Management Plan. Records will be kept of biological and chemical monitoring undertaken carried out prior to the commencement of construction works.
SM03	No invasive species, other than Cherry Laurel, were recorded within the Construction Works Area Boundary during pre-planning surveys, however pre-construction surveys of the Construction Works Areas plus 7m will be carried out in order to determine if any new infestations have been established in the interim period. These pre-construction confirmatory surveys for invasive species will be carried out by the Project Ecologist to accurately determine the extent of new invasive species infestations. Mapping, showing the most up to date

	distribution and extent of each infestation, will be distributed to the Environmental Clerk of Works and to the Project Engineer.
SM04	No Otter holts were recorded within the Construction Works Area Boundary or within 150m upstream or downstream of watercourse crossing locations during pre-planning surveys, however pre-construction surveys will be carried out in order to determine if any new holts have been established in the interim period. These pre-construction confirmatory surveys for Otter holts and activity (particularly holts at which breeding females or cubs are present) will be carried out 150m upstream and downstream of watercourse crossing locations.
SM05	No Kingfisher nests were recorded within the Construction Works Area Boundary or within 300m upstream or downstream of watercourse crossing locations during pre-planning surveys, however pre-construction surveys will be carried out in order to determine if any new nests have been established in the interim period. These pre-construction confirmatory surveys will be carried out by a suitably qualified Ornithologist within the Construction Works Area Boundary and within 300m upstream or downstream of watercourse crossing locations and will be undertaken between March and April (early visit) and again between May and June (late visit).
SM06	No Badger setts were recorded within the Construction Works Area (CWA) Boundary or within 50m of the CWA Boundary during pre-planning surveys, however pre-construction surveys will be carried out in order to determine if any new setts have been established in the interim period. These pre-construction confirmatory surveys will be carried out by the Project Ecologist within the Construction Works Area (CWA) boundary and within 50m of either side of the CWA Boundary and carried out no more than 10-12 months in advance of proposed construction activities.
SM07	One tree within 150m of the Construction Works Area Boundary was identified as a bat roost during pre-planning surveys. Pre-construction confirmatory surveys will be carried out at this tree to identify any changes in the interim period since initial pre-planning surveys. Surveys will be carried out by the Project Ecologist at a time of year that is appropriate to the type of roost e.g. June to August for maternity roosts, or November to February for hibernation roosts. If the location or status of roosts has changed, then the use of lighting at nearby construction works locations will be adapted accordingly by the Project Ecologist.
SM08	In advance of construction works taking place, licenced advance archaeological surveys/investigations will be carried out at identified locations within the construction works area boundary. These surveys will include photographic surveys, townland/civil parish boundary surveys, wade and detection surveys, built heritage surveys, geophysical surveys and archaeological test trenching. The nature and scope of these surveys will be agreed with the National Monuments Service (NMS).
SM09	Confirmatory condition surveys involving pre-construction and post-construction inspections, high-definition video surveys and FWD surveys will be undertaken along the routes of concentrated construction traffic between the R694 and the windfarm Site Entrances and along the route of the Internal Cable Link and of the Ballynalacken Grid Connection route.
MM71	<p>The horizontal directional drilling works at W3 will be carried out when the Rathduff_15 is in its dry state, to ensure that the works are carried out under a dry stream bed. The drilling works will be carried out by an experienced Drilling Contractor and supervised and managed by a competent and experienced Mud Engineer who understands the technicalities and challenges of drilling works. The Mud Engineer will advise the Construction Manager on the selection of competent drillers for the HDD works; monitor the watercourse bed during drilling works, and will supervise the drilling works including the drilling pressures and the implementation of any contingency measures. From a surface water quality protection perspective, the area around the launch/reception pit, bentonite batching, pumping and recycling plant will be bunded using appropriate terram geotextile and/or sandbags in order to contain any spillages. Drilling fluid returns will be contained within a sealed tank / sump to prevent migration from the works area. Spills of drilling fluid will be cleaned up immediately and stored in an adequately sized watertight skip before being taken off-site to a suitably licensed waste facility. In the event of a break-out occurring, the Environmental Emergency Response Procedure for Frac-Out will be implemented which includes the following contingency measures;</p> <ul style="list-style-type: none"> • In the event of break-out occurring in the stream bed, the rig will immediately shut off the pumps and the drilling assembly will be pulled off to reduce annular pressures;

	<ul style="list-style-type: none"> In the event of break-out on the road an excavator will be available to dig a pit to contain fluid with vacuum trucks/pumps available to transfer drill fluid from the containment point back to the recycling point; <p>and in either scenario, drilling fluid additives designed to plug the formation will be introduced to the circulation system and let set. Environmental Emergency Response Procedures are included in the Ballynalacken Grid Connection Environmental Management Plan.</p>
OMM17	<p>A noise curtailment strategy will be developed and implemented to ensure that the operating windfarm complies with the prescribed operational noise criterion. In order to develop this strategy: (i) a pre-construction noise survey will be carried out to establish the background noise levels and to confirm the applicable wind turbine noise criteria at identified Noise Sensitive Locations (NSL) and (ii) following the commissioning of the Project and the commencement of operation of the wind farm, a second noise survey will be carried out at the NSLs to establish compliance with the noise limit conditions applied to the development. This survey will be carried out according to the IOA GPG and Supplementary Guidance Note 5: Post Completion Measurements (July 2014).</p> <p>Where exceedances are confirmed during surveys, then appropriate sound power operating modes will be activated for specified turbines operating in specified wind conditions as required to reduce noise output when exceedance at a NSL is predicted by the wind turbines computer SCADA software. A third noise survey will be carried following the activation of sound power modes to confirm the effectiveness of the curtailment strategy.</p>
During Construction surveying requirements	
SM12	All construction works will be monitored for compliance with the Environmental Management Plan by the project Environmental Management Team which will include an Environmental Clerk of Works, the Project Ecologist and specialists such as a hydrologist, who are independent of the site contractors. The Environmental Management Team will report to the owner's Project Manager.
SM13	A Landowner Liaison Officer (LLO) will be appointed and will monitor the erection and maintenance of the Construction Works Area boundary fences and will liaise with the landowners regarding the location of access gateways along the fence, and of livestock water supply pipes and livestock water supply sources (agricultural landowners only). The LLO will keep the landowners up to date with relevant construction work schedules.
SM14	A suitably qualified engineer will supervise all windfarm site excavations and construction works.
SM15	<p>The windfarm drainage network will be inspected regularly during the construction phase under the following schedule: Daily visual inspections by the Contractor of silt fencing and settlement ponds; Weekly inspections by the Contractor of the drainage network; Monthly site inspections of the drainage network by the Project hydrologist during construction phase and for a period of 6 months following construction; Event based inspections by the Contractor as follows: >10 mm/hr (i.e. high intensity localised rainfall event); or >25 mm in a 24 hour period (heavy frontal rainfall lasting most of the day); or, rainfall depth greater than monthly average in 7 days (prolonged heavy rainfall over a week).</p> <p>All inspections will include all elements of the drainage systems to ensure that the systems are operating correctly. Inspections will examine the functioning of the various elements of the drainage system, and if evidence of sedimentation or scouring and any changes in the drainage water including discolouration, odour, oily sheen or the presence of litter, then the required corrective maintenance or actions will be identified and will be implemented immediately the Contractor.</p>
SM16	Surface water quality monitoring of watercourses downstream of the works will be carried out at regular intervals by the Environmental Management team during the construction phase. This monitoring will be carried out at the water quality monitoring locations to check that the pre-construction downstream water quality status is maintained. The monitoring of water quality parameters and collection of samples will be undertaken by the Environmental Management team, who will be appropriately trained on the required monitoring methods and the use, calibration and maintenance of all monitoring equipment used. Laboratory analysis of water samples will also be undertaken as part of the monitoring programme by an independent and appropriately certified laboratory. The surface water monitoring locations and sampling programme are

	<p>defined in the Surface Water Management Plan which forms part of the Ballynalacken Windfarm Project Environmental Management Plan.</p> <p>If monitoring identifies sediment or contaminant polluted waters, then the Environmental Clerk of Works will have a 'stop-works' authority to temporarily stop construction works at the Project site in order to establish the cause of the pollution, and if caused by the Project, then the Contractor will implement the necessary actions and measures to resolve the cause of the pollution. In addition, a mobile 'Siltbuster' or similar equivalent specialist treatment system will be used at the windfarm site within the Owveg River catchment and can be mobilised on-site (wind farm site) at short notice for emergencies in order to treat sediment polluted waters from settlement ponds or excavations should they occur.</p> <p>Records will be kept of biological and chemical monitoring undertaken before, during and after the works. Records will also be kept of inspections of proposed surface water mitigation measures. These records will be made available upon request to any authorised person as defined under the Local Government (Water Pollution) Acts.</p>
SM17	At D1 and D2, monitoring of Q values and sediment build up will be carried out immediately downstream of the dam locations at D1 and D2. This monitoring will be conducted throughout the construction works at D1 and D2, and also conducted as part of surface water monitoring in order to confirm that the Q values and sediment levels return to baseline levels. Prior to dam being removed at D1 or D2, where sediment build up poses significant downstream effects on the watercourse, this sediment will be removed.
SM18	The plant and machinery will be regularly inspected for leaks and maintained in good working order for the duration of the works.
SM19	Fuel, oil and chemical stores including tanks and drums will be regularly inspected for leaks and signs of damage.
SM22	Visual inspections will be carried out by the Contractor on all machinery and equipment (particularly for machinery and equipment which has come into contact with water or soils) for evidence of attached plant or animal material, or adherent mud or debris. Any attached or adherent material will be removed before entering or leaving the site, securely stored away from traffic for removal to the waste storage area in the temporary construction compound at the Ballynalacken site.
SM23	During working hours, the construction contractor will monitor dust control methods. The Environmental Clerk of Works will monitor weather forecasts for dry and windy conditions and will carry out weekly on-site and off-site inspections to monitor dust caused by the construction works. Public roads Construction Works Areas will be regularly inspected for cleanliness and regular dust soiling checks of surfaces within 100m of site boundary will also be carried out. The frequency of monitoring will be increased when construction activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
SM25	Monitoring of noise and vibration will be carried out at a number of nearby residences during critical periods of the construction works.
SM26	<p>Archaeological Monitoring of initial groundworks at identified locations will be carried out by the Project Archaeologist under licence during construction works. The nature/scope of the groundworks monitoring will be agreed with the National Monuments Service (NMS).</p> <p>Should a new discovery be made during advance archaeological surveys/investigations or during archaeological monitoring of initial construction groundworks that is considered to be highly important by reason of its historical, architectural, traditional, artistic, cultural or archaeological interest, then the Environmental Clerk of Works, in conjunction with the Project Archaeologist, will determine its preservation requirements in consultation with the relevant authorities and in accordance with regulatory and legal requirements.</p>
Early Operational surveying requirements	
OMM01	Surface water quality monitoring of watercourses downstream of the works will be carried out monthly for the first six months post construction, and thereafter annually during the Operational Years 1, 2, 3, 4 and 5, and then every 5 years thereafter, to record any change to baseline trends. Samples will be collected by the

	Environmental Clerks of Works/Asset Manager and analysed by an appropriately certified laboratory and the resulting report submitted to Kilkenny County Council.
OMM10	The rate of re-vegetation of exposed soils and growth of newly planted hedgerows and trees will be checked by the Asset Manager during quarterly site inspections. Where revegetation is slower than expected, that area will be prepared and re-seeded or replanted in an appropriate manner, as advised by a suitably qualified ecologist.
OMM17	<p>A noise curtailment strategy will be developed and implemented to ensure that the operating windfarm complies with the prescribed operational noise criterion. In order to develop this strategy: (i) a pre-construction noise survey will be carried out to establish the background noise levels and to confirm the applicable wind turbine noise criteria at identified Noise Sensitive Locations (NSL) and (ii) following the commissioning of the Project and the commencement of operation of the wind farm, a second noise survey will be carried out at the NSLs to establish compliance with the noise limit conditions applied to the development. This survey will be carried out according to the IOA GPG and Supplementary Guidance Note 5: Post Completion Measurements (July 2014).</p> <p>Where exceedances are confirmed during surveys, then appropriate sound power operating modes will be activated for specified turbines operating in specified wind conditions as required to reduce noise output when exceedance at a NSL is predicted by the wind turbines computer SCADA software. A third noise survey will be carried following the activation of sound power modes to confirm the effectiveness of the curtailment strategy.</p>

6 Monitoring

Adverse effects on the environment due to the development of the Ballynalacken Windfarm Project mostly relate to the construction stage. Monitoring of the construction works will check that the project in practice conforms to the predictions made in the EIA Report during the planning process. This audit of the conformity with the EIA Report will be carried out through the EMP by the Environmental Clerk of Works.

6.1.1 Environmental Clerk of Works

The Project Promoter of the Ballynalacken Windfarm Project (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 for early (c.6 months) operational stages, and will have a full-time presence during the construction stage. The Environmental Clerk of Works will be adequately resourced to engage and manage specialist environmental consultants, such as ecologists, hydrologists and archaeologists, as required.

The Environmental Clerk of Works will monitor the compliance of the construction works with the EMP and all relevant planning conditions.

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

6.1.2 Compliance Auditing

On-going audits, will be carried out by the Environmental Clerk of Works, during the construction of the Ballynalacken Windfarm Project. The audits will record the:

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

6.1.3 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 & 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 7 of this EMP for:

- Non-Compliance Report
- Register of Non-Compliance Reports Issued
- Environmental Training Record
- Register of Environmental Training Environmental Incident Record
- Environmental Incident Record

- Register of Environmental Incidents
- Environmental Public Complaint Record
- Register of Environmental Public Complaints

6.1.4 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.

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;
- An unexpected failure of a mitigation measure;
- An unexpected or unforeseen adverse effect on the environment; or
- An internal or external communication.

All Corrective Action Requests will be numbered and logged.

7 Records & Reporting

7.1 Non-Compliance Record Sheet

Non-Compliance Record Sheet		
Date	Time	Logged By
Contractor or Subcontractor Details: Contractor Name: Contact Name: Telephone:		
Nature of Non-Compliance (specify Environmental Protection Measure breached)		
Time Specified for becoming compliant:		
Contractor or Subcontractor's confirmation of receipt of NCR Yes <input type="checkbox"/> No <input type="checkbox"/> Contractors or Subcontractors signature: _____ Date of Signing: _____		

7.2 Register of Non-Compliance issued

[illegible]

7.3 Environmental Training Record Sheet

7.4 Register of Environmental Training

[illegible]

7.5	Environmental Incident Record Sheet
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Environmental Incident Record Sheet			
Date	Time	Logged By	
How was Incident Detected?			
Nature of Incident (e.g. Water pollution/Dust/Noise/Fuel Spill)			
Investigation Findings			
Corrective/Preventative Action Taken/Contingency Measures Employed			
Follow up reporting:			
EPA	Letter <input type="checkbox"/>	Phone <input type="checkbox"/>	Date: _____
Kilkenny County Council	Letter <input type="checkbox"/>	Phone <input type="checkbox"/>	Date: _____
Office of Public Works	Letter <input type="checkbox"/>	Phone <input type="checkbox"/>	Date: _____
Inland Fisheries Ireland	Letter <input type="checkbox"/>	Phone <input type="checkbox"/>	Date: _____
Signed: _____			

7.6 Register of Environmental Incidents

Register of Environmental Incidents								
Date	Time	How was Incident detected	Nature of Incident	Nature of Complaint	Investigation findings	Corrective / preventative action	Follow up Reporting	Incident logged by

7.7	Environmental Complaint Record Sheet
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Environmental Complaint Record Sheet			
Date	Time	Logged By	
Complainants Details <i>(if known)</i>			
Name: _____ Address: _____			
Telephone Number: _____			
Mode of Complaint: _____ (e.g. telephone/letter/verbal/via statutory body)			
Nature of Complaint (e.g. Water pollution/Dust/Noise/Fuel Spill)			
Response to Complaint			
<i>(including investigation findings, corrective actions/preventative action taken if required)</i>			
Corrective/Preventative Action Taken/Contingency Measures Employed			
Follow up correspondence:			
To complainant/_____: Letter <input type="checkbox"/> Phone <input type="checkbox"/> Date: _____			
Further correspondence from complainant: Letter <input type="checkbox"/> Phone <input type="checkbox"/> Date: _____			
Signed: _____			

7.8 Register of Environmental Complaints

Register of Environmental Complaints								
Date	Time	Complainant's Details	Mode of complaint	Nature of Complaint	Responder to Complaint	Follow up correspondence	Complaint logged by	Date

7.9 Control of Spread of Alien Species Record Sheet

Contractor/Employee Name:		
Contractor Equipment List: (list all main equipment cleaned)		
Construction Location: (tick as appropriate)	<ul style="list-style-type: none"> • • (Specify exact location)	<input type="checkbox"/> <input type="checkbox"/>
Cleaning Location (specify location where cleaning took place, e.g. name of garage)		
Method of Cleaning (Specify nature of cleaning e.g. High-pressure steam, manual removal of vegetation, high pressure power hose, disinfection etc.)		
Date of Cleaning:		
Contractor Declaration: I hereby declare that all equipment used at the construction location indicated above has been thoroughly cleaned in accordance with the cleaning methodology set out above before entering the construction site. The machine I am using has not left site and re-entered since it was cleaned. Signed: _____ Date: _____		

8 Mapping & Figures

The following mapping and figures are included:

Figure No.	Figure Title
EMP Figure 1	Ballynalacken Windfarm Project - Layout on Discovery Mapping

Environmental Management Plan
EMP 1 - Ballynalacken Windfarm Project -
Location on Discovery Mapping

- Legend:
- Ballynalacken Windfarm
 - Red Line Boundary
 - Internal Cable Link
 - Tinnalintan Substation
 - Ballynalacken Grid Connection
 - Windfarm Control Building
 - Existing Eirgrid Ballyragget Substation
 - Haul Route Works & Activities
 - L-5846 Public Road Identification Number
 - Durrow Towns/Villages

