Planning and Environmental Consultants

Operation and Environmental Management Plan

Cleanrath Wind Farm

DOCUMENT DETAILS

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1. INTRODUCTION

This Operation and Environmental Management Plan (OEMP) has been prepared by MKO on behalf of Cleanrath Windfarm Ltd. for the operation of the Cleanrath wind farm development. This document has been prepared for the operation of the Cleanrath wind farm development for the 25-year lifespan of the project.

This report provides the environmental management framework to be adhered to during the operational phase of the Cleanrath wind farm development and it incorporates the mitigating and monitoring principles that minimises the potential for any environmental impacts to occur.

This document has been prepared to accompany the Remedial Environmental Impact Assessment Report (rEIAR) and the Environmental Impact Assessment Report (EIAR) prepared as part of the substitute consent process.

1.1 Scope of the Operation and Environmental Management Plan

This report is presented as a guidance document for the operation of the Cleanrath wind farm development and is intended to replace the Construction and Environmental Management Plan (CEMP) which was provided during construction and the initial operation of the site up to July 2020. The OEMP is intended to provide a more concise document targeted specifically at the operation of the wind farm site. Where the term 'site' is used in this OEMP it refers to all works associated with the operation of the Cleanrath wind farm development. The OEMP clearly outlines the mitigation measures and monitoring proposals that are required to be adhered to in order to operate the site in an appropriate manner.

The report is divided into six sections, as outlined below:

Section 1 provides a brief introduction as to the scope of the report.

Section 2 outlines the Site and Project details, detailing the targets and objectives of this plan along with providing an overview of methodologies for works that will be carried out during the operational phase of the Cleanrath wind farm development.

Section 3 sets out details of the environmental controls to be implemented on site including the mechanisms for implementation.

Section 4 consists of a summary table of all mitigation proposals to be adhered to during the operational-phase of the project.

Section 5 consists of a summary table of all monitoring proposals to be adhered to during the operational-phase of the project.

Section 6 outlines the proposals for reviewing compliance with the provisions of this report.

2. SITE AND PROJECT DETAILS

2.1 Site Location and Description

The Cleanrath wind farm development is located in the townlands of Cloontycarthy, Cleanrath North, Cleanrath South, Derrineanig, Derreennacarton and adjacent townlands in Co. Cork. The Cleanrath wind farm development comprises a total of 9 No. wind turbines, with a maximum ground to top blade tip height of up to 150 metres and all associated infrastructure.

The electrical connection from the wind turbines to the national grid will be via an underground cable which runs predominately within the public road corridor through the townlands of Cleanrath South, Derrineanig, Milmorane, Coomlibane, Rathgaskig, Derragh, Augeris, Gorteenakilla, Carrignadoura, Gurteenowen, Gurteenflugh, Lyrenageeha, Lackabaun, Co. Cork and Grousemount, Co. Kerry.

The town of Macroom is located approximately 12 kilometres northeast of the Cleanrath wind farm development and Inchigeelagh is located approximately 2.5 kilometres to the south.

2.2 Description of the Cleanrath wind farm development

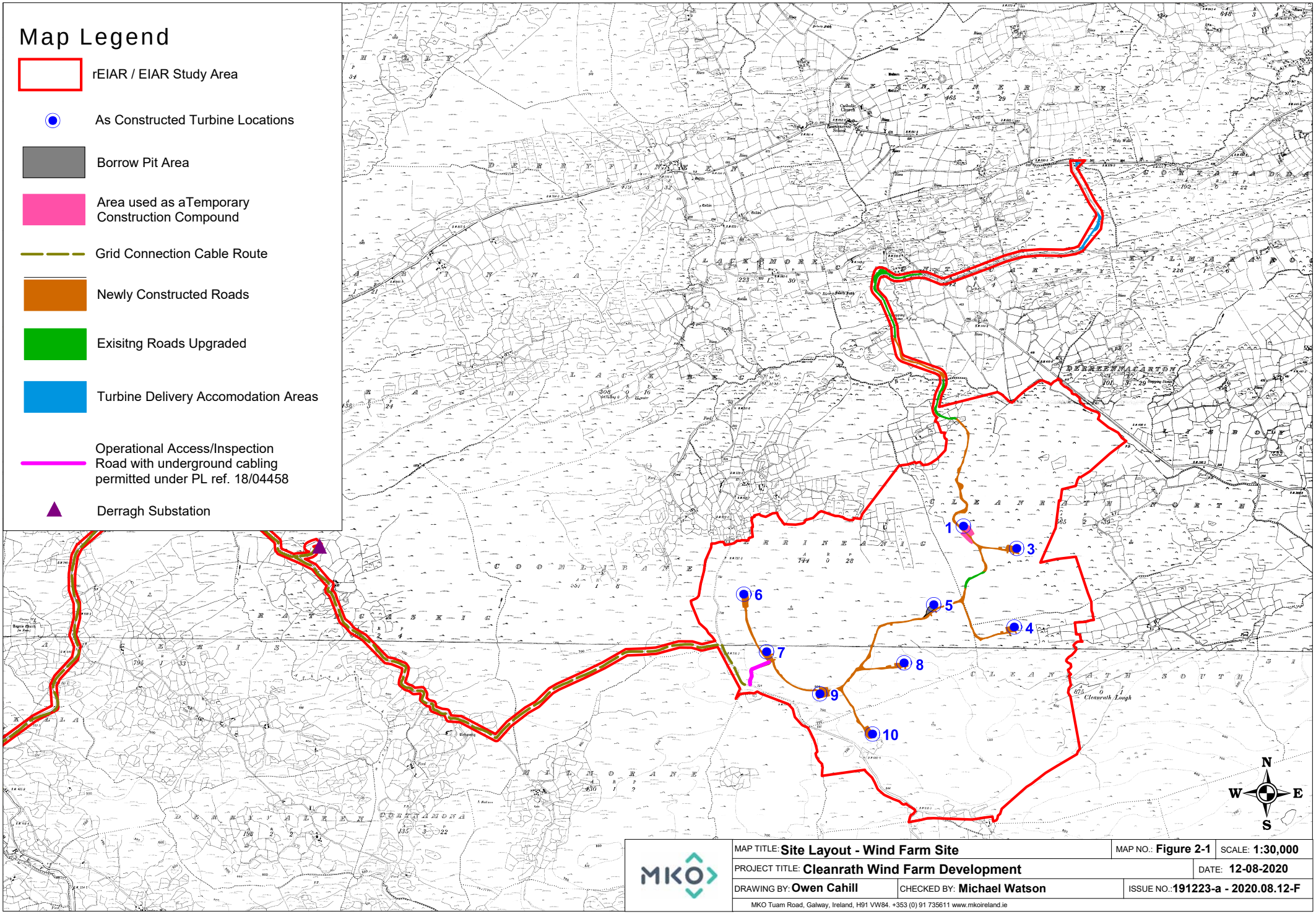
The design life of the project is expected to be 25 years.

The key components of the Cleanrath wind farm development include the following:

- 9 no. Wind Turbines with a maximum blade tip height of 150 metres;
- 9 no. Hardstand Areas
- Access tracks;
- Underground cabling, including connection to the national grid
- Site drainage
- All associated site development and ancillary works including the electricity substation and control building at Derragh Wind Farm.

The site layout showing individual elements of the Cleanrath wind farm development is shown in Figure 2-1.

As construction has been completed, elements of the project that were developed as a temporary facilitator have either been removed, restored to its original condition or will have naturally revegetated. These include the temporary construction compound and the borrow pit. All access roads and hardstandings areas form part of a site roadway network.



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2.3 Targets and Objectives

The site will be operated to an approved standard and codes of practice as outlined throughout the various chapters of the rEIAR and EIAR. This OEMP considers environmental issues and this is enhanced by the works proposals during operation.

The key site targets are as follows;

- Ensure works and activities are completed in accordance with mitigation and best practice approach presented in the all planning documentation prepared for the site;
- Ensure operational phase works and activities have minimal impact/disturbance to local landowners and the local community;
- Ensure operation and works have minimal impact on the natural environment;
- Adopt a sustainable approach to site operation; and,
- Provide adequate environmental training and awareness for all project personnel.

The key site objectives are as follows;

- Using recycled materials if possible;
- Ensure sustainable sources for materials supply where possible;
- Avoidance of any pollution incident or near miss as a result of working around or close to existing watercourses and having emergency measures in place;
- Avoidance of vandalism;
- Keeping all watercourses free from obstruction and debris;
- Correct implementation of the sustainable drainage system (SuDS) drainage design principles;
- Keep impact of operation to a minimum on the local environment, watercourses, and wildlife;
- Correct fuel storage and refuelling procedures to be followed;
- Good waste management and house-keeping to be implemented;
- Air and noise pollution prevention to be implemented;
- Monitoring of the works and any adverse effects that it may have on the environment. Working methods will be altered where it is found there is the potential to have an adverse effect on the environment;

2.4 Wind Farm Operation Overview

An appointed Operators Controller will install a Site Manager to manage the day to day operation of the wind farm. The Site Manager will be responsible for ensuring compliance with this OEMP and any revisions made to this documents throughout the operation. An overview of the anticipated operational phase activities is provided below.

2.4.1 Turbine Maintenance

The wind farm site will be the subject of on-going maintenance of the wind turbines throughout the operational life of the site. This will be undertaken by turbine suppliers and site personnel who will manage and operate the site from the substation and associated control building at Derragh Wind Farm located approximately 3km west of the Cleanrath wind farm development. The turbine maintenance will not require significant plant and equipment with all works localised in nature with operatives using vans to access the site and transport their equipment. Further details on the ongoing maintenance and scheduling is included in the Operational and Maintenance Health and Safety Plan (Appendix A).

2.4.2 Peatland Habitat Restoration

The restoration of peatland habitat as discussed in Chapter 6 of the rEIAR will be undertaken during the future operation of the site. The restoration will comprise the management of an area of forestry that was felled during construction along with an additional hectare of immature forestry which will be felled to establish suitable peatland habitat. The removal of woody vegetation will be undertaken in full compliance with Section 40 of the Wildlife Act 1976 – 2018. The works will involve felling, chipping and removal of brash and restoring the peatland habitat to its original condition prior to planting which will include the blocking of drains with no further drainage to be installed around the area. Further details are included in Appendix B.

2.4.3 Shadow Flicker Monitoring

An assessment of the potential effects associated with shadow flicker was undertaken using the WindPRO computer software was used to model the predicted daily and annual shadow flicker levels in significant detail. As part of this assessment it was determined that exceedances of the 2006 DoEHLG guidelines daily threshold for shadow flicker would be experienced at 14 properties. The operators of the wind farm have completed an assessment of the properties that were predicted to potentially exceed the daily shadow flicker threshold to determine whether either or both of the factors outlined above relate to any of the properties and therefore eliminate or reduce any shadow flicker below the acceptable threshold. The assessment found that of the 14 properties predicted to exceed the daily threshold for shadow flicker, 7 properties had a clear line of site between the turbine and the relevant section of the dwelling with no obstruction and therefore may require the mitigation strategy to be implemented with 3 of these properties directly involved in the Cleanrath wind farm development. The remaining 7 properties had either no clear line of sight to a turbine due to vegetation coverage or did the property did not have any windows orientated in the direction of a turbine. All predicted incidents of shadow flicker have been pre-programmed into the wind farm's control software. The wind farm's SCADA control system has been programmed to shut down any particular turbine at any particular time on any given day to ensure that shadow flickers occurrences at properties which are not naturally screened or cannot be screened with measures outlined above.

However, the prediction model will still require verification on resumption of operation due to the limitations of the computer modelling. Where an exceedance of the daily threshold is experienced, the appropriate mitigation will be implemented.

2.4.4 Turbine Noise Monitoring

A commissioning noise survey has been undertaken for the site. The survey has been completed to determine compliance with the noise condition of attached to a previous grant of permission for the site. The survey has determined that the relevant noise criteria have been complied with during operation of the windfarm

Details of this survey are included in Appendix 11-9 or the rEIAR.

The future operation of the Cleanrath wind farm development will adhere to any noise compliance requirements that may be conditioned subject to the outcome of the substitute consent process.

3. ENVIRONMENTAL MANAGEMENT

The following sections give an overview of the drainage design, dust and noise control measures, a waste management plan for the site and the implementation of the environmental management procedures for the site.

3.1 Site Drainage

During the operational phase, various combinations/adaptations of the runoff control and drainage management measures will be employed at the site depending on the local conditions and topography. These include:

- Natural vegetation filters are used regularly across the site where the local drainage and topography allowed attenuation of surface water runoff.
- Where possible, interceptor drains are installed up-gradient of infrastructure to collect clean surface runoff, in order to minimise the amount of runoff reaching areas where suspended sediment could become entrained. It is now directed to areas where it can be re-distributed onto natural vegetation.
- Swales/roadside drains are used to collect runoff from access roads and turbine hardstanding areas of the site, likely to have entrained suspended sediment, and channel it onto natural vegetation filters.

Site drainage measures were installed during the construction phase some of which have been retained. The retention of these drainage features has occurred in areas where revegetation has not yet fully been established. As the operation of the wind farm continues, these areas within the site will revegetate resulting in a resumption of the natural drainage management that will have existed prior to any construction. It is not anticipated that the operation of the wind farm will interrupt this restored drainage regime in any way.

Any drainage infrastructure retained in the operational phase will be the subject of ongoing maintenance where required. This will comprise the repairing and replacement of silt fencing along with the servicing of check dams, settlement ponds and any other infrastructure requiring maintenance. As outlined above, the revegetation of disturbed areas and return to the pre-construction drainage regime at the site will result in the requirement for maintenance of drainage infrastructure reducing as the operational phase progresses.

The water quality monitoring data collected during construction has shown that the site was constructed without having any impact on water quality and will continue to do so during operation. The water quality monitoring has continued for a period of 6 months post construction and will continue quarterly into the operational phase for a period of one year thereafter.

3.2 Refuelling, Fuel and Hazardous Materials Storage

Any plant and equipment used during the operational phase will require refuelling during the works. Appropriate management of fuels will be required to ensure that incidents relating to refuelling are avoided. The following mitigation measures are proposed to avoid release of hydrocarbons at the site:

- Road-going vehicles will be refuelled off site wherever possible;
- On-site refuelling will be carried out at designated refuelling areas at various locations throughout the site. Machinery will be refuelled directly by a fuel truck that will come to site as required

- Only designated trained and competent operatives will be authorised to refuel plant on site. Mobile measures such as drip trays and fuel absorbent mats will be used during all refuelling operations.
- Fuel volumes stored on site should be minimised. Any fuel storage areas will be bunded appropriately for the fuel storage volume;
- The electrical substation at Derragh Wind Farm which the Clenarath Wind Farm loops into on route to the national grid is bunded appropriately to the volume of oils being stored to prevent leakage to groundwater or surface water. The bunded area is fitted with a storm drainage system and an appropriate oil interceptor;
- The plant used will be regularly inspected for leaks and fitness for purpose; and,
- An emergency plan for the operational phase to deal with accidental spillages will be developed (refer to Appendix A) Spill kits will be available to deal with and accidental spillage in and outside the refuelling area.
- A programme for the regular inspection of plant and equipment for leaks and fitness for purpose will be developed at the outset of the operational phase.

3.2.1 Spill Control Measures

Every effort will be made to prevent an environmental incident during the operational phase of the project. Oil/fuel spillages are one of the main environmental risks that will exist on the site which will require an emergency response procedure. The importance of a swift and effective response in the event of such an incident occurring cannot be over emphasised. The following steps provide the procedure to be followed in the event of such an incident:

- Stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers.
- If applicable, eliminate any sources of ignition in the immediate vicinity of the incident.
- Contain the spill using the spill control materials, track mats or other material as required. Do not spread or flush away the spill.
- If possible, cover or bund off any vulnerable areas where appropriate such as drains, watercourses or sensitive habitats.
- If possible, clean up as much as possible using the spill control materials.
- Contain any used spill control material and dispose of used materials appropriately using a fully licensed waste contractor with the appropriate permits so that further contamination is limited.
- Notify the Site Manager immediately giving information on the location, type and extent of the spill so that they can take appropriate action.
- The Site Manager will inspect the site and ensure the necessary measures are in place to contain and clean up the spill and where necessary appoint a specialist contractor to undertake the clean-up and prevent further spillage from occurring.
- The Site Manager will notify the appropriate regulatory body such as Cork County Council, and the Environmental Protection Agency (EPA), if deemed necessary.

The importance of a swift and effective response in the event of such an incident occurring cannot be over emphasised. Environmental incidents are not limited to just fuel spillages. Therefore, any environmental incident must be investigated in accordance with the following steps.

- The Site Manager must be immediately notified.
- If necessary, the Site Manager will inform the appropriate regulatory authority. The appropriate regulatory authority will depend on the nature of the incident.
- The details of the incident will be recorded on an Environmental Incident Form which will provide information such as the cause, extent, actions and remedial measures used following the incident. The form will also include any recommendations made to avoid reoccurrence of the incident.

- If the incident has impacted on a sensitive receptor such as an archaeological feature the Site Manager will liaise with the Project Archaeologist.
- A record of all environmental incidents will be kept on file by the Site Manager and the Main Contractor. These records will be made available to the relevant authorities such as Cork County Council, EPA if required.

The Site Manager will be responsible for any corrective actions required as a result of the incident e.g. an investigative report, formulation of alternative works methodologies or environmental sampling, and will advise the Operators Controller as appropriate.

3.3 Dust Control

Dust can be generated from on-site activities during operation such as travelling on site roads during prolonged periods of dry weather. The extent of dust generation will depend on the type of activity undertaken, the location, the nature of the dust, i.e. soil, and the weather. In addition, dust dispersion is influenced by external factors such as wind speed and direction and/or, periods of dry weather. Site traffic movements also have the potential to generate dust as they travel along the haul route.

Proposed measures to control dust include:

- Any site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions;
- The designated public roads outside the site and along the main transport routes to the site will be regularly inspected by the Site Manager for cleanliness, and cleaned as necessary;
- Material handling systems and material storage areas will be designed and laid out to minimise exposure to wind;
- Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods;
- The transport of soils or other material, which has significant potential to generate dust, will be undertaken in tarpaulin-covered vehicles where necessary;
- All site traffic will have speed restrictions on un-surfaced roads to 15 kph;
- Daily inspection of the site to examine dust measures and their effectiveness.
- When necessary, sections of the haul route will be swept using a truck mounted vacuum sweeper; and,

Given the reduced scale of traffic movement during operations in comparison to the construction phase, it is not anticipated that impacts associated with dust from site traffic will be experienced during operation when considering no significant impact was experienced during construction. However, the appropriate mitigation has been provided above for implementation as required.

3.4 Noise Control

The operation of plant and machinery, including site vehicles, is a source of potential impact that will require mitigation at all locations within the site. Proposed measures to control noise include:

- Diesel generators will be enclosed in sound proofed containers to minimise the potential for noise impacts;
- Plant and machinery with low inherent potential for generation of noise and/or vibration will be selected. All plant and equipment to be used on-site will be modern equipment and will comply with the European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations;
- Regular maintenance of plant will be carried out in order to minimise noise emissions. Particular attention will be paid to the lubrication of bearings and the integrity of silencers;

- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the works;
- Compressors will be of the "sound reduced" models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers;
- Machines, which are used intermittently, will be shut down during those periods when they are not in use;
- Training will be provided by the Site Manager to drivers to ensure smooth machinery operation/driving, and to minimise unnecessary noise generation; and,
- Local areas of the haul route will be condition monitored and maintained, if necessary.

Given the reduced scale of plant and equipment that will be used during operations in comparison to the construction phase, it is not anticipated that impacts associated with noise from plant and equipment will be experienced during operation when considering no significant impact was experienced during construction. However, the appropriate mitigation has been provided above for implementation as required.

3.5 Traffic Management

A Traffic Management Plan (TMP) was prepared for the construction phase of the wind farm and is included in the Construction and Environmental Management Plan (CEMP, Appendix 2) included as Appendix 4-4 of the rEIAR. The TMP will be adopted for the operational phase as required although, the peatland habitat restoration is the only significant works proposed for the operational phase that will require its implementation. The ongoing turbine and general site maintenance will be completed by personnel using normal road going vehicles with an average of 3 vans on a normal day for the operational phase.

3.6 Environmental Management Implementation

3.6.1 Roles and Responsibilities

The Site Manager will be the project focal point relating to operation-related environmental issues.

In general, the Site Manager will maintain responsibility for monitoring site operations and Contractors/Sub-contractors from an environmental perspective. The Site Manager will act as the regulatory interface on environmental matters. The Site Manager will be responsible for reporting to and liaising with Cork County Council and other statutory bodies as required.

The Operation Controller will be responsible for employing the services of a suitably qualified ecologist, ornithologist and any other suitably qualified professionals as required throughout the operational phase.

3.6.2 Health and Safety

During the operational phase there will be ongoing maintenance of the wind turbines and associated infrastructure. Access to the turbines is through a door at the base of the structure, which will be locked at all times outside maintenance visits. ESB retains the rights to access the grid connection cables and substation as part of their routine infrastructure inspections.

Staff associated with the project will conduct frequent visits, which will include inspections to establish whether any signs have been defaced, removed or are becoming hidden by vegetation or foliage, with prompt action taken as necessary.

An Operational and Maintenance Health and Safety Plan has been prepared for the wind farm and is included as Appendix A.

3.7 Monitoring of Surface Water Quality

3.7.1 Monthly Laboratory Analysis Sampling

Monthly sampling for laboratory analysis for a range of parameters as adopted during pre-commencement and construction phases has continued for 6 months (although sample events were not completed in March and April 2020 due to the Covid-19 restrictions) after construction was completed Sampling will now continue quarterly into the operational phase for a period of one year.

It should be noted that additional monitoring locations were added during the construction phase and theses additional locations will continue to be sampled as appropriate. Flow monitoring will continue for a period of 12 months post construction of the wind farm and will be then be the subject of a review. The supervising hydrologist will monitor and advise on the readings being received from the testing laboratory.

Laboratory analysis of a range of parameters with relevant regulatory limits and EQSs will continue throughout the operational phase for each watercourse e.g. at SW-A – SW-C as outlined in Figure 3-1. All samples will be sent for analysis to an independent laboratory.

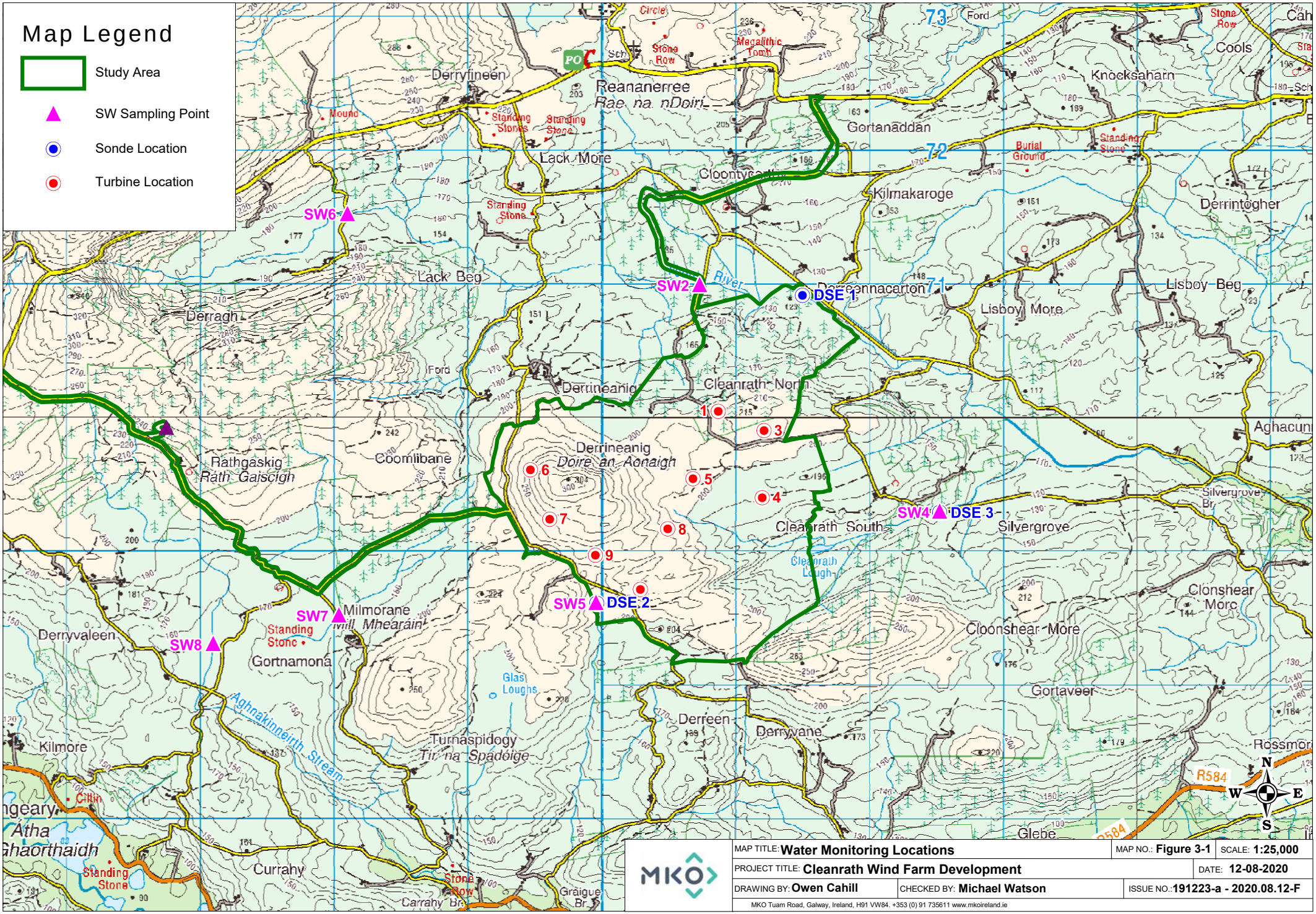
3.7.2 Continuous Turbidity Monitoring

Turbidity monitors or sondes have been installed at locations surrounding the wind farm site as outlined in Figure 3-1. The sondes provide continuous readings for turbidity levels in the watercourse and are scheduled for removal at the next quarterly surface water sampling event.

3.7.3 Monitoring Parameters

The analytical determinants of the monitoring programme (including limits of detection and frequency of analysis) will be as per S.I. No. 272 of 2009 European Communities Environmental Objectives (Surface Waters) Regulations, S.I. No. 722 of 2003 European Communities (Water Policy) Regulations and European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009. The likely suite of determinants will include:

- pH (field measured)
- Electrical Conductivity (field measured)
- Temperature (field measured)
- Dissolved Oxygen (field measured)
- Turbidity (NTU) (sonde measured)
- Flow (m/s)
- Total Suspended Solids (mg/l)



MAP TITLE: **Water Monitoring Locations**		MAP NO.: **Figure 3-1**	SCALE: **1:25,000**
PROJECT TITLE: **Cleanrath Wind Farm Development**			DATE: **12-08-2020**
DRAWING BY: **Owen Cahill**	CHECKED BY: **Michael Watson**	ISSUE NO.: **191223-a - 2020.08.12-F**	

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- Ammoniacal Nitrogen as NH3 (mg/l)
- Ammoniacal Nitrogen as NH4 (mg/l)
- Nitrite (NO2) (mg/l)
- Ortho-Phosphate (P) (mg/l)
- Nitrate (NO3) (mg/l)
- Phosphorus (unfiltered) (mg/l)
- Chloride (mg/l)
- BOD

3.8 Environmental Awareness and Training

3.8.1 Environmental Induction

The Environmental Induction will be integrated into the general site induction on a case by case basis for each member of staff employed on-site depending on their assigned roles and responsibilities on site. Where necessary, the Environmental Induction will as a minimum include:

- A copy of the OEMP and discussion of the key environmental risks and constraints;
- A discussion of the applicable Works Method Statement;
- The roles and responsibilities of staff, including contractors, in relation to environmental management; and,
- An outline of the Environmental Incident Management Procedure.

3.8.2 Toolbox Talks

Toolbox talks would be held by the Site Manager at the commencement of each day, or at the commencement of new activities particularly during the peatland habitat restoration works. The aims of the toolbox talks are to identify the specific work activities that are scheduled for that day or phase of work. In addition, the necessary work method statements and sub plans would be identified and discussed prior to the commencement of the day's activities.

Site meetings would be held on a regular basis involving all site personnel. The objectives of site meetings is to discuss the coming weeks activities and identify the relevant work method statements and sub plans that will be relevant to that weeks activities. Additionally, any non-compliance identified during the previous week would also be discussed with the aim to reduce the potential of the same non-compliance reoccurring.

4. MITIGATION PROPOSALS

All mitigation measures relating to the operational phases of the Cleanrath wind farm development were set out in the various sections of the Environmental Impact Assessment Report (EIAR) which accompanies this substitute consent application.

This section of the OEMP groups together all of the mitigation measures presented in the planning documentation. The mitigation measures are presented in the following pages.

By presenting the mitigation proposals in the below format, it is intended to provide an easy to audit list that can be reviewed and reported on during the operational phase of the project. The tabular format in which the below information is presented, can be further expanded upon during the course of operation and provides a reporting template for site compliance audits.

Table 4-1 Mitigation Measures

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
		Operational Phase		
MM1	EIAR Chapter 6 OEMP Section 2	A habitat restoration and enhancement plan has been prepared to mitigate for peatland habitat loss		
MM2	EIAR Chapter 4 OEMP Section 2	An additional hectare of immature forestry will be removed to provide an area of enhanced peatland. Any further felling proposed for the site will be the subject of a Limited Felling Licence (LFL) application to the Forest Service. Replanting will be undertaken for any further felling		
MM3	EIAR Section 6,	The removal of woody vegetation will be undertaken in full compliance with Section 40 of the Wildlife Act 1976 – 2018.		
MM4	EIAR Chapter 8	As part of peatland restoration works, the following measures are proposed: › Brash removed during the restoration process should be stored up slope of the cleared area, to provide a buffer to surface water flows which may have the potential to erode, During tree felling brash mats will be used to support vehicles on soft ground, reducing peat and mineral soils erosion and avoiding the formation of rutted areas.		
MM5	EIAR Chapter 8, 9	Wherever possible, vehicles will be refuelled off-site, particularly for regular road-going vehicles. On-site refuelling of machinery will be carried out at designated refuelling areas at various locations throughout the site. Heavy Plant and		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
	OEMP Section 3	Machinery will be refuelled on site by a fuel truck. This will only take place for a short period during peatland habitat restoration works.		
MM6	REIAR Chapter 8	The electrical control building was bunded appropriately to the volume of oils likely to be stored, and to prevent leakage of any associated chemicals and to groundwater or surface water. The bunded area was fitted with a storm drainage system and an appropriate oil interceptor;		
MM7	EIAR Chapter 6 OEMP Section 3	The operational phase drainage of the development has been operated in full accordance with the design and mitigation measures that are fully described in Section 9.6 of Chapter 9: 'Water' and in the Operation and Environmental Management Plan. In addition, the same measures will be employed during any future operation. The Habitat Restoration Plan that is provided in Appendix 6.8 provides details of additional measures that will be implemented to protect water quality during the operation of the wind farm and the felling associated with the habitat restoration should it be granted permission.		
MM8	EIAR Chapter 9	Various combinations/adaptations of the runoff control and drainage management measures during the operational phase are employed at the site depending on the local conditions and topography: › Natural vegetation filters are used regularly across the site where the local drainage and topography allowed attenuation of surface water runoff. › Where possible, interceptor drains are installed up-gradient of infrastructure to collect clean surface runoff, in order to minimise the amount of runoff reaching areas where suspended sediment could become entrained. It is now directed to areas where it can be re-distributed onto natural vegetation.		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
		Swales/roadside drains are used to collect runoff from access roads and turbine hardstanding areas of the site, likely to have entrained suspended sediment, and channeled it onto natural vegetation.		
MM9	EIAR Chapter 9	As part of peatland restoration works, the following water protection measures are proposed: › Brash removed during the restoration process will be stored up slope of the cleared area, to provide a buffer to surface water flows which may have the potential to erode; › During tree felling brash mats will be used to support vehicles on soft ground, reducing peat and mineral soils erosion and avoiding the formation of rutted areas; and, › Drain blocking and use of silt fencing and check dams until stabilisation has taken place.		
MM 10	EIAR Chapter 7	Operational monitoring at the Cleanrath wind farm development commenced in January 2020 and continued into May 2020. Appendix 7-6 of this EIAR contains the Post-Construction Bird Monitoring Programme. Post construction monitoring included and will include the following surveys: › Flight activity surveys: Vantage Point Surveys › Breeding Bird Surveys: Adapted Brown & Shephard. › Winter Walkover Surveys › Breeding Raptor surveys › Hen Harrier Winter Roost Surveys		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
		› Targeted bird collision surveys (corpse searches) were/will be undertaken with training dogs. The surveys included detection and scavenger trials, to correct for these two biases and ensure the resulting data is robust.		
MM 11	EIAR Section 6	All mitigation measures as specified by the survey report and derogation licence was implemented by the client. Compensation habitat was provided to replace the relatively small area of habitat affected by the development and no significant impact on Kerry slug populations was predicted to occur as a result of this development.		
MM 12	EIAR Chapter 7	Following the precautionary principle and in accordance with the SNH (2019) guidelines, any future operation of the wind farm will be the subject of ongoing monitoring as described in Appendix 6-4. If, following monitoring, there is any uncertainty as to the impacts on bat species, mitigation will be implemented		
MM 13	EIAR Chapter 5 OEMP Section 3	During the operational phase there will be ongoing maintenance of the wind turbines and associated infrastructure. Access to the turbines is through a door at the base of the structure, which is locked at all times outside maintenance visits. An Operational and Maintenance Health and Safety Plan has been prepared for the wind farm and is included as Appendix A of the OEMP (Appendix 4-3).		
MM 14	EIAR Chapter 5, 11 OEMP Section 3	Best practice measures for noise control will be adhered to onsite during the operational phase of the Cleanrath wind farm development in order to mitigate the slight short-term negative impact associated with this phase of the development. These measures included: › No plant used on site will be permitted to cause an on-going public nuisance due to noise.		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
		› The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations. › All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract. › Compressors will be attenuated models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools were fitted with suitable silencers. › Machinery that will be used intermittently will be shut down or throttled back to a minimum during periods when not in use. › During the course of the construction programme, supervision of the works will be undertaken to ensure compliance with the limits detailed in Chapter 11 using methods outlined in British Standard BS 5228-1:2014+A1:2019 Code of practice for noise and vibration control on construction and open sites – Noise.		
MM 15	EIAR Chapter 5 OEMP Section 3	In periods of extended dry weather, dust suppression may be necessary along haul roads within the site to ensure dust does not cause a nuisance during use of plant or machinery. Where necessary, water will be spread with a bowser or water spreader to dampen down haul roads and the temporary site compound to prevent the generation of dust. Silty or oily water will not be used for dust suppression		
MM 16	EIAR Chapter 5 OEMP Section 2	All mitigation as outlined under noise and vibration, dust, traffic, visual amenity and shadow flicker in the EIAR, will be implemented in order to reduce insofar as possible impacts on residential amenity at properties located in the vicinity of the Cleanrath wind farm development works, including along the turbine and construction materials haul route.		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
		The installed wind turbines have been fitted with shadow flicker control units to allow the turbines to be controlled to prevent the occurrence of shadow flicker at properties surrounding the wind farm where necessary.		
MM 17	EIAR Chapter 10 OEMP Section 3	Any vehicles or plant brought onsite during the operational phase will be maintained in good operational order that comply with the Road Traffic Acts 1961 as amended, thereby minimising any emissions that arise.		
MM 18	EIAR Chapter 5, 11 OEMP Section 3	Best practice measures for noise control was adhered to onsite during the construction phase of the Cleanrath wind farm development in order to mitigate the slight short-term negative impact associated with this phase of the development. The measures include: › Sensitive location of equipment, taking account of local topography and natural screening. › Working methods: construction noise was controlled by prescribing that standard construction work was restricted to the specified working hours. Any construction work carried out outside of these hours shall be restricted to activities that did not generate noise of a level that may cause a nuisance. The phasing of works had also been designed with regard to avoidance of noise impacts. › Plant was selected taking account of the characteristics of noise emissions from each item. All plant and machinery used on the site shall comply with E.U. and Irish legislation in relation to noise emissions. The timing of on- and off-site movements of plant near occupied properties was controlled. › Operation of plant: all construction operations shall comply with guidelines set out in British Standard documents 'BS 5338: Code of Practice for Noise		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
		Control on Construction and Demolition Sites' and 'BS5228: Part 1: 1997: Noise & Vibration Control on Construction and Open Sites'. The correct fitting and proper maintenance of silencers and/or enclosures, the avoidance of excessive and unnecessary revving of vehicle engines, and the parking of equipment in locations that avoid possible effects on noise-sensitive locations were employed. › Training and supervision of operatives in proper techniques to reduce site noise, and self-monitoring of noise levels, if appropriate.		
MM 19	EIAR Chapter 14 OEMP Section 3	For a period of three weeks, a number of HGVs and excavator delivery vehicles will come to site as part of peatland habitat restoration works. These works will be undertaken in accordance with the Traffic Management Plan prepared for the construction phase which is included within Appendix 4-4 of the remedial EIAR		
MM 20	EIAR Chapter 14	In the event of further scoping responses being received from the EIA consultees, the comments of the consultees and any mitigation measures are considered during operation of the Cleanrath wind farm development, subject to the outcome of the Substitute Consent process. The terms of the signed 2RN Protocol Document for the Cleanrath wind farm development will be adhered to throughout operation		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
		Decommissioning Phase		
MM 21	EIAR Chapter 4	Prior to the end of the operational period the Decommissioning Plan (Appendix 4-4) will be updated in line with decommissioning methodologies that may exist at the time and will agreed with the competent authority at that time.		
MM 22	DP Section 3	Prior to decommissioning, a suitably qualified ecologist will complete an invasive species survey of the berms that will be temporarily removed during decommissioning at the turbine delivery accommodation roadway and the junction upgrade adjacent to the sawmill in Cloontycarthy. The invasive species survey will also be undertaken along the cable route to identify invasive species at joint bay locations where excavation to expose the cabling for removal will be required.		
MM 23	EIAR Chapter 9	Best guidance in relation to protection of freshwater pear mussel (FPM) sites will be followed from guidance document Forestry and Freshwater Pearl Mussel Requirements – Site Assessment and Mitigation Measures (Draft).		
MM 24	EIAR Section 6	All mitigation measures as specified by the survey report and derogation licence or any revision or renewals of this licence was implemented by the client. Compensation habitat was provided to replace the relatively small area of habitat affected by the development and no significant impact on Kerry slug populations was predicted to occur as a result of this development.		
MM 25	EIAR Chapter 6	Trees did not be replanted in the future within the felled areas. In areas of felling close to turbine bases brash was removed from the site, where not required for the upgrade of existing roads and to prevent rutting of the ground surface during felling operations, and management was put in place to keep the growth of regenerating scrubby/bushy vegetation down.		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
MM 26	EIAR Chapter 4 DP Section 2	On removal of turbines, the covering of the foundation will be completed using material imported to site as the required quantity of material does not currently exist at the site. The imported soil will be spread and graded over the foundation using a tracked excavator and revegetation enhanced by spreading of an appropriate seed mix to assist in revegetation and accelerate the resumption of the natural drainage management that will have existed prior to any construction		
MM 27	EIAR Chapter 4 DP Section 3	The following mitigation measures are proposed to avoid release of hydrocarbons at the site: › Road-going vehicles will be refuelled off site wherever possible; › On-site refuelling will be carried out at designated refuelling areas at various locations throughout the site. Machinery will be refuelled directly by a fuel truck that will come to site as required › Only designated trained and competent operatives will be authorised to refuel plant on site. › Fuel volumes stored on site should be minimised. Any fuel storage areas will be bunded appropriately; › The plant used will be regularly inspected for leaks and fitness for purpose; and, › An emergency plan for the decommissioning phase to deal with accidental spillages will be developed (refer to Section 4) Spill kits will be available to deal with and accidental spillage in and outside the refuelling area. › A programme for the regular inspection of plant and equipment for leaks and fitness for purpose will be developed at the outset of the decommissioning phase.		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
MM 28	EIAR Section 7	A Decommissioning Plan has been prepared (see Appendix 4-4) The following measures are proposed for the decommissioning phase: › During the decommissioning phase, disturbance limitation measures will be as per the construction phase (see Chapter 7 of the rEIAR). › Plant machinery will be turned off when not in use. › All plant and equipment for use will comply with the Construction Plant and the European Communities (Noise Emission by Equipment for Use Outdoors) Regulations 2001 (S.I. No. 632 of 2001). › A project ecologist will be appointed to oversee the decommissioning phase, with similar duties to those outlined above during the construction phase.		
MM 29	EIAR Chapter 14 DP Section 3	The Traffic Management Plan has been prepared to consider the decommissioning as a standalone project. The removal of turbines from site will be undertaken for a specialist haulier. The traffic management arrangements although similar to that implement for turbine delivery as outlined in the rEIAR will be agreed in advance of decommissioning (early or after 25 years of operation) with the competent authority. A traffic management plan has been prepared for the removal of cabling from cable duct on the grid connection route		

5. MONITORING PROPOSALS

All monitoring proposals relating to the operational phases of the Cleanrath wind farm development were set out in the various sections of the Environmental Impact Assessment Report (EIAR) which accompanies this substitute consent application.

This section of the OEMP groups together all of the monitoring proposals presented in the planning documentation. The monitoring proposals are presented in the following pages.

By presenting the monitoring proposals in the below format, it is intended to provide an easy to audit list that can be reviewed and reported on during the operational phase of the project. The tabular format in which the below information is presented, can be further expanded upon during the course of operation to provide a reporting template for site compliance audits.

Table 5-1 Schedule of Monitoring Proposals

Ref. No.	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
Operational Phase & Decommissioning Phases					
MX1	EIAR Chapter 4 OEMP Section 3	Monthly sampling for laboratory analysis for a range of parameters as adopted during pre-commencement and construction phases has continued for 6 months (although sample events were not completed in March and April 2020 due to the Covid-19 restrictions) after construction was completed Sampling will now continue quarterly into the operational phase for a period of one year	Quarterly	As Necessary	Site Manager
MX2	EIAR Chapter 4 OEMP Section 3	Turbidity monitors or sondes have been installed at locations surrounding the wind farm site as outlined in Figure 3-1. The sondes provide continuous readings for turbidity levels in the watercourse and are scheduled for removal at the next quarterly surface water sampling event	Ongoing	As Necessary	Site Manager
MX3	EIAR Chapter 7	Operational monitoring at the Cleanrath wind farm development commenced in January 2020 and continued into May 2020. The programme of works monitored and will continue to monitor parameters associated with collision, displacement/barrier effects and habituation during the lifetime of the project. Surveys commenced in January 2020 of Years 1. Thereafter surveys will be scheduled to coincide with Years 2, 3, 5, 10 and 15 of the lifetime of the wind farm. Monitoring measures were broadly based on guidelines issued by the Scottish Natural Heritage (SNH, 2009). Post construction monitoring included and will include the following surveys:			

Ref. No.	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
		› Flight activity surveys: Vantage Point Surveys › Breeding Bird Surveys: Adapted Brown & Shephard. › Winter Walkover Surveys › Breeding Raptor surveys › Hen Harrier Winter Roost Surveys › Targeted bird collision surveys (corpse searches) were/will be undertaken with training dogs. The surveys included detection and scavenger trials, to correct for these two biases and ensure the resulting data is robust.			
MX4	EIAR Chapter 4, 6	Post-construction surveys for badger and otter will be completed on the site for five years. These surveys will be undertaken following the same scope and methodology as proposed for the pre-construction surveys. All results will be sent to the Planning Authority and to the NPWS.	Annually for 5 years	Annually	Project Ecologist
MX5	EIAR Chapter 4, 6	The Kerry Slug Management Plan will be implemented in full, as will the conditions of the derogation licence. This provides for post-construction surveys that cover a five year period	Annually for 5 years	Annually	Project Ecologist
MX6	EIAR Chapter 4, 6	Post-construction monitoring and reporting programmes for birds (particularly Hen Harrier and Merlin), otter, badger and Kerry slug shall be submitted to, and agreed in writing with, the planning authority prior to commencement of	As required	As required	Project Ornithologist

Ref. No.	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
		development. The surveys shall be undertaken by suitably qualified and experienced specialists. Surveys shall be completed annually for a period of five years following commissioning of the wind farm and copies of the reports to the planning authority shall also be submitted to the National Parks and Wildlife Service.			
MX7	EIAR Chapter 5, 11	Post commissioning of the proposed turbine units it is recommended that the noise monitoring detailed in the relevant section of this report is repeated with a view to confirming that the operational units are compliant with the relevant day and night time noise criteria curves as presented in the body of this assessment. If this study work identifies any exceedances of the appropriate criteria relevant corrective actions will be taken/implemented.	Once	As required	Site Manager
MX8	DP Section 3	The Site Manager in consultation with the ECoW will be responsible for employing the services of a suitably qualified ecologist and any other suitably qualified professionals as required throughout the decommissioning works.	As required	As required	Site Manager
MX9	EAIR Chapter 6 DP Section 3	Prior to decommissioning, a suitably qualified ecologist will complete an invasive species survey of the berms that will be temporarily removed during decommissioning at the turbine delivery accommodation roadway and the junction upgrade adjacent to the sawmill in Cloontycarthy. The invasive species survey will also be undertaken along the cable route to identify invasive species at joint bay locations	As required	As required	Project Ecologist

Ref. No.	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
		where excavation to expose the cabling for removal will be required.			
MX10	EAIR Chapter 6	Current and ongoing bat monitoring being conducted on site, where turbines are operating in sleep mode, will be utilised in conjunction with the 2015 bat survey findings. This will be used to assess bat activity patterns and to inform the design of any advanced site-specific mitigation requirements, including curtailment if deemed necessary, to ensure that there are no significant residual effects on bat species.	As required	As required	Project Ecologist

6. COMPLIANCE AND REVIEW

6.1 Site inspections and Environmental Audits

Routine inspections of site operations will be carried out on a daily and weekly basis by the Site Manager to ensure all controls to prevent environmental impacts, relevant to the operational activities taking place at the time, are in place.

Environmental inspections will ensure that the works are undertaken in compliance with this OEMP and all other planning application documents. The Site Manager will be suitably trained to undertake environmental site inspections.

6.2 Auditing

An Environmental audit will first be carried out monthly during the operational phase of the Cleanrath wind farm development to ensure the operational phase mitigation measures that are still in place as required are adequate.

In contrast to monitoring and inspection activities, audits are designed to shed light on the underlying causes of non-compliance, and not merely detect the non-compliance itself. In addition, audits are the main means by which system and performance improvement opportunities may be identified. Environmental audits will be carried out by the Site Manager on behalf of the Operation Controller. It is important that an impartial and objective approach is adopted. Environmental audits will be conducted at planned intervals to determine whether the OEMP is being properly implemented and maintained. The results of environmental audits will be provided to project management personnel.

6.3 Environmental Compliance

The following definitions shall apply in relation to the classification of Environmental Occurrences during the operation of the wind farm:

Environmental Near Miss: An occurrence which if not controlled or due to its nature could lead to an Environmental Incident.

Environmental Incident: Any occurrence which has potential, due to its scale and nature, to migrate from source and have an environmental impact beyond the site boundary.

Environmental Exceedance Event: An environmental exceedance event occurs when monitoring results indicate that limits for a particular environmental parameter (as indicated in the Environmental Monitoring Programme) has been exceeded.

An exceedance will immediately trigger an investigation into the reason for the exceedance occurring and the application of suitable mitigation where necessary.

Exceedance events can be closed out on achieving a monitoring result below the assigned limit for a particular environmental parameter.

Environmental Non-Compliance: Non-fulfilment of a requirement and includes any deviations from established procedures, programs and other arrangements related to the OEMP.

6.4 Corrective Action Procedure

A corrective action is implemented to rectify an environmental problem on-site. Corrective actions will be implemented by the Site Manager. Corrective actions may be required as a result of the following;

- Environmental Audits;
- Environmental Inspections and Reviews;
- Environmental Monitoring;
- Environmental Incidents; and,
- Environmental Complaints.

A Corrective Action Notice will be used to communicate the details of the action required to the main contractor. A Corrective Action Notice is a form that describes the cause and effect of an environmental problem on site and the recommended corrective action that is required. The Corrective Action Notice, when completed, will include details of close out and follow up actions.

If an environmental problem occurs on site that requires immediate attention direct communications between the Site Manager will be conducted. This in turn will be passed down to the site staff involved. A Corrective Action Notice will be completed at a later date.

6.5 Operation and Environmental Management Plan Review

This OEMP will be reviewed after every 6 months of operation and may also require updating after the substitute consent process to comply with any conditions should substitute consent be granted.

APPENDIX A

OPERATIONAL AND MAINTENANCE HEALTH AND SAFETY PLAN

Cleanrath Wind Farm Ltd.

Operational and Maintenance H&S Plan and Scheduled Activities Jan 2020 – Dec 2020

Document prepared by WFSO Ltd. for Cleanrath Wind Farm, Inchigeelagh, Co Cork

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The content of this report is for the exclusive use for the Cleanrath Wind Farm and Cleanrath 38kV Substation. If other parties, choose to rely on the contents of this report they do so at their own risk.

This document has been prepared by

……

Eamonn Lyons,
WFSO Ltd. Operators Controller,
Cleanrath Wind Farm.

This document has been approved by

…….
Christopher Murnane,
PSDP / PSCS Manager,
WFSO Ltd.

Contents

1.0 Introduction

The Health and Safety Plan has been prepared for the works associated with the maintenance and upkeep of Cleanrath Wind Farm, Inchigeelagh, Co Cork. The plan has been prepared in accordance with the requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2013.

WFSO Ltd. is committed to the philosophy that all accidents are preventable and that the prevention of accidents through identification and control of the hazards inherent in the work being undertaken is a primary objective for all operations and maintenance projects undertaken at Cleanrath Wind Farm. The purpose of the plan is to describe the arrangements that are in place for OEM activities planned on-site during 2020 and to ensure the health and safety of all personnel involved in these activities. The PSDP / PSCS Manager will retain the master copy of this document. Documents and files associated with this plan will be held by the wind farm operations manager. The PSDP / PSCS Manager's office is located at Lissarda Industrial Estate, Lissarda, Co. Cork and the operations manager's office will be located on site in the Cleanrath wind farm.

Scope

Operation and maintenance activities at Cleanrath Wind farm come under the definition of "construction work" under the Safety, Health and Welfare at Work Act 2005. WFSO Ltd. has put in place a procedure for managing the PSDP / PSCS role for these works. Operations management on site will ensure that all procedures are adhered to and executed in an appropriate manner.

The works to which this plan applies are listed in Appendix 3. This plan is reviewed and revised as required every year in advance of the commencement of scheduled maintenance activities for the forthcoming calendar year and is valid for just over one year. It is not anticipated that new projects may arise during the 12-month period.

WFSO ltd. recognize that each individual activity will have hazards which will be specific to that task. This plan requires that tasks are risk assessed and a method statement prepared by the appropriate contractor. The PSDP / PSCS will review method statements in advance of works to ensure that a safe system of work is being employed. This task specific review and details of any additional specific control measures to be employed will be included in Appendix 4 which details the hazards of particular risk thought likely to occur during the completion of this plan. All operatives visiting the site are to complete an online site induction beforehand whereby they can upload training certificates and following successful completion of the induction they will be able to download a copy of;

- Cleanrath Site Layout
- Cleanrath Emergency Procedures
- Catastrophic Event Flowchart

2.1 Approach

To ensure a consistent and efficient approach, different work types and methods for ensuring a safe system of work have been defined for the site as follows:

Work Type 1 (Routine maintenance)

- Approximately 90% of turbine related work involves minor repairs, component replacement, troubleshooting, adjustment etc. These works will often require access to the nacelle. The works can be either planned or reactive (e.g. to a fault condition). Work is carried out by trained technicians from either the turbine manufacturer or an appointed OEM contractor. These works do not have a large design element as replacement of turbine components is done on a "like for like" basis. The work comes under the definition of "construction work" and involves particular risks (working at height, high voltage) and so requires appointment of Project Supervisors.

Approach

The site will operate under the Nordex Wind Turbine Safety Rules (Revision 3). WFSO will act as the Operational Controller for the site and no work will commence on a turbine unless WFSO are happy to "hand over control" of a turbine to an Approved Technician (AT).

The Approved Written Procedures (AWP), associated Risk Assessments and Method statements for these works will be reviewed by the PSDP / PSCS at the start of the contract period. Any new AWPs or amendments to existing AWPs will be reviewed as they occur. The method statements will typically consist of standard operation and maintenance procedures from the turbine manufacturers which will have been previously risk assessed by the turbine manufacturers. The PSDP / PSCS will document this review process, review any deficiencies in the procedure with the turbine vendor and carry forward any specific control actions to the construction stage safety and health plans for the appropriate site.

On receipt of method statements from a contractor, the PSDP / PSCS will review and ensure that:

- It details the work to be undertaken
- Includes a formal risk assessment
- Clearly identifies the area in which the work will happen
- Lists the plant and equipment that will be used for the work
- Clearly identifies hazards and controls in place
- There is First Aid provision

If there is any doubt about the contents of the method statements, these will be sent for further review by the WFSO Health and Safety Advisor.
Once the induction, training and certification details of contractor personnel assigned to a type 1 work task are in order AND the standard method statement for the task has been pre-approved by the PSDP / PSCS AND the work is to be carried out without deviation to that method

statement THEN work will be authorized by the PSDP / PSCS remotely using the WFSO Controller System as described in Section 8.1 of this document. Following authorization, the PSDP / PSCS will periodically inspect on-site the implementation of the safe working procedures and will address any non-compliance with approved method statements as appropriate. WFSO Ltd. will carry out monthly H&S inspections which will cover all aspects on the site from signage, to roads condition, to substation inspection, etc.

Work Type 2 (Major Turbine maintenance)

- Approximately 10% of turbine related work involves major repair works such as large component replacement or blade repair. These works typically involve additional sub-contractors such as crane companies and may involve other specialist sub-contractors. Approval of the contractors will be based on the procedure described in Section 7 of this document.
- The work is generally planned in advance. The work may have a design element (e.g. design of the crane lift). The work comes under the definition of "construction work" and involves particular risks (working at height, high voltage, lifting heavy prefabricated components) and so requires appointment of Project Supervisors

Approach

Method statements for these works will be reviewed by the PSDP / PSCS before work commences. Method statements will typically consist of standard turbine OEM procedures but there will be elements which may be specific to the exact task being carried out at the particular location i.e. the method statement will take account of site and task specific risks. The PSDP / PSCS will review the method statements, document this review process, action any deficiencies in the procedure with the turbine vendor and any other contractors before authorising the works.

The PSDP / PSCS will be present at the site at the commencement of the works to ensure that a safe system of work is being employed and that all PSDP / PSCS duties are addressed and periodically inspect the works thereafter.

Typically for these works, the turbine supplier will be appointed as the PSDP / PSCS for the works area in question for the duration of the works with WFSO Ltd. onsite and offering assistance where required.

Work Type 3 (Non-Turbine Contractor Works)

- General site maintenance work which involves road repairs, unblocking of drains, control building maintenance works
- Repair and maintenance activities within the onsite substation and HV switching which will typically involve electrical subcontractors (employed either by the client directly or by the turbine service contractor).

The above works comes under the definition of "construction work" and involve particular risks (working at height, high voltage) and so requires appointment of Project Supervisors.

Approach

Method statements for these works will be reviewed by the PSDP / PSCS before work commences. The method statements will typically be specific to the exact task being carried out at the particular location and will take account of site and task specific risks. The PSDP / PSCS will document this review process, review any deficiencies and action them with the contractors before authorising the works. The PSDP / PSCS will be present at the site at the commencement of the works by any new contractor to ensure that a safe system of work is being employed and that all PSDP / PSCS duties are addressed.

Work Type 4 [Operations Staff Works]

- The WFSO operations team is trained in working at height and is involved periodically in climbing turbines for the purpose of inspection, audit or contractor supervision.

These works involve the risks of working at height and working in the proximity of high voltage but do not come under the definition of "construction works" under the construction regulations.

Approach

The PSDP / PSCS will ensure that WFSO staff are inducted at the particular site and will authorize personnel to access the site remotely using the WFSO Work Authorization System. (Note Risk Assessment of these activities will be covered under the WFSO Safety Statement)

3. Project Details

3.1 Location

The site is located at the Cleanrath Wind farm, Inchigeelagh, Cork and is shown on the map in Appendix 1.

3.2 Nature of Work

A list of the works to be carried out is detailed in Appendix 3.

3.3 Information for Inclusion in the Safety File

Due to the nature of the work which involves routine maintenance it is not expected that a significant amount of information necessary for inclusion in the safety file should be generated during this project WFSO as the PSDP / PSCS shall ensure that the checklist attached in Appendix 3 is updated on an annual basis and information identified as being necessary for inclusion shall be added to the safety file.

3.4 Cleanrath Substation

3.4.1 Location

Accident Area: Cleanrath

Site Entrance Co-ordinates:

- Irish Grid: E 120600 N 71674
- GPS (degree/decimal): Lat: 51.89192 Lon: -9.1541867
- GPS (deg/min/sec): N: 51° 53' 30.9" W 9° 9' 15.1"

- **Closest Eircode: P12 H289**
- **Closest townland: Cloontycarthy**

Directions from Macroom to Cleanrath

- After going straight through Macroom from the Cork city side continue following the road west for 6.00km until you reach Moon's bar.
- Take the left at Moon's bar.

- Continue following this road for another 5.5km until you reach a left-hand turn:

- Continue on this road until you reach a T junction. Take the right-hand turn.

- After 1.00km at the next junction turn right. Directly after the house with the Eircode **P12 H289**.

- The entrance will be 0.3km down this road on the left-hand side.

3.4.2 Nature of work

A list of all work to be carried out is detailed in Appendix 7.

3.4.3 Information for inclusion in the Safety File

This 38kV substation serves all sections of the wind farm. Due to the nature of the work which involves routine maintenance it is not expected that a significant amount of information necessary for inclusion in the safety file should be generated during this project. WFSO as the PSDP / PSCS shall ensure that the checklist attached in Appendix 5 is updated on an annual basis and information identified as being necessary for inclusion shall be added to the safety file. The PSDP / PSCS requires no lone working on any electrical equipment in the substation.

4. The Environment

4.1 Access and Egress

Parking is available on site at the base of each turbine and in front of the substation. All cars should reverse into the chosen parking space. Access to the turbines is along a farm laneway and through two gates which are normally closed. All gates should be left in the state they were found. The access way is in continuous use for farming or bog activities.

4.2 Existing Services

All turbines are serviced by a single substation at Cleanrath which is in turn connected to an interconnector. As a result, there are underground cables present on the site. These are outlined on the as built services drawing in the Safety File. Should works be planned which may affect existing services on the site the exact location will be verified before work commences. Works likely to affect existing services are not envisaged as part of the existing scope of works to be undertaken under this plan. Overhead cables are present on potential access routes to the site and may affect the bringing to site of equipment such as cranes.

4.3 Site Access

Construction and maintenance activities will be restricted to daylight hours unless otherwise agreed with the PSDP / PSCS. Works will be scheduled so as to minimize disruption to local traffic and the ongoing agricultural activities on the Wind farm.

4.4 Other activities on-site

The normal functions of the farm will continue throughout the project. Where there are, any potential impact arising from works being by PSDP / PSCS before commencing carried out under this plan and agricultural activities, this will be coordinated by the PSDP / PSCS. The site operator will collaborate and coordinate with all personnel who will have accesses to roads on site to gain entry to forestry. Any non-day to day activities will need to be assessed and passed

4.5 Storage of plant and materials

Storage of plant and materials whilst on site shall only be in designated areas which will be pre-agreed with the PSDP / PSCS prior to works commencing. All materials shall be stored in a safe and tidy manner. Whilst on-site, contractors will be expected to maintain the site in a clean and tidy fashion. It is expected that all parts used in service and a small number of electrical and mechanical components will be store in the storage facilities provided to Nordex by WFSO. Nordex have a bunded storage cabin located next to the site office which is used to house COSHH plant and equipment.

4.6 Disposal of waste

Disposal of all waste from the construction activities must be in compliance with all relevant statutory provisions. The PSDP / PSCS requires contractors to ensure that all waste which is generated is disposed of in an appropriate manner. Waste generated should be removed from the site every evening. Oils and Coolants withdrawn from Turbines will be stored in the storage facility on site and will be disposed of by Nordex under their environmental standard.

4.7 Security arrangements

The works involved in this project will not generally require additional security arrangements to be put in place.
Contractors are required to erect appropriate signage and barriers at the area of work to ensure that persons do not enter the work area during works or after hours.
In accordance with normal safety procedures within the industry contractors shall also be obliged to ensure that exclusion zones are established and maintained during crane activities and when overhead working is taking place.

5. Management Arrangements

5.1 Construction Regulations Duty Holders

Client:
Inchee Energy Supply Ltd.,
Lissarda,
Co. Cork, Ireland.

PSDP / PSCS:
WFSO Ltd.,
Lissarda Industrial Estate.
Lissarda,
Co. Cork, Ireland.
PSDP / PSCS Manager Christopher Murnane (086 7955083).

5.2 PSDP / PSCS Manager Responsibilities

Mr. Christopher Murnane, will be PSDP / PSCS manager with assistance from the WFSO Ltd. team.

5.3 Relevant Legislation

The legislation that is relevant to this project is as follows:
Safety, Health and Welfare at Work (SHWW) Act, 2005.
Safety, Health and Welfare at Work (Construction) Regulations, 2013.
Safety, Health and Welfare at Work (General Applications) Regulations, 2007.
Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001.
European Communities (Classification, Packaging and Labeling and notification of Dangerous Substances) (Amendment) Regulations, 2006.

6. Informing Contractors

The PSDP / PSCS will manage the flow of information to inform the contractors and others of health and safety issues. The means of distributing information to contractors on the site are as follows:

- Site specific induction is given to the work force as well as any other personnel who require access to the site.
- Development and review of this safety and health plan when required.
- Review of contractor's site-specific safety statements, method statements and risk assessments
- Conducting site audits of safety compliance and awareness.

Ensuring that information concerning particular risks which are likely to be encountered during the completion of these works and which have been identified at design stage are included in this plan and are considered by contractors when preparing safe systems of work

7. Contractor Selection Procedures

Contractors are obliged to assess their sub-contractors and suppliers and submit documentation to this effect when requesting approval for the sub-contractor. The PSDP / PSCS will monitor the compliance of individual contractors with site safety rules and approved method statements and will issue any appropriate directions to contractors as necessary. All contractors will be requested to provide the following information prior to starting work at Cleanrath Wind Farm:

- All relevant Training records for personnel who will work at Cleanrath.
- Method Statements and Risk Assessments for Maintenance at Cleanrath.
- Contact Details for personnel who will carry out work at Cleanrath.
- Insurance Certificates and Up to date Safety Statement.

8. Works Authorization and Coordination

8.1 Work Authorization Procedure

Approval to work will be based on detailed approved method statements and risk assessments for the works. A formal written permit to work system will not be in operation for this project. Approval to visit the site and work on the site must be sought and granted through the WFSO Operational Controller with online inductions completed before coming to site.

The turbines on the wind farm are operated under Nordex Wind Turbine Safety Rules and WFSO Operations are appointed as the Operational Controller. Nordex, the HV Operator and any contractor or personnel visiting Cleanrath wind farm for the purposes of work, inspection or testing on the wind farm plant or infrastructure must notify the WFSO duty Operational Controller of their presence before entering the wind farm.

Personnel entering the wind farm will provide the following information:

- work party details,
- reason for visit,
- expected finish time,
- any known issues or work being undertaken at the wind farm
- Relevant AWPs or ROPs where work is being carried out under the WTSRs.
- All non WTSR activity happening on site, the WFSO Operational Controller should have prior notice of the work, personnel involved and have been supplied with Risk Assessments and Method Statements where appropriate.

The WFSO Operational Controller Contact Number **is 021 7355898.** Notification of all planned work on site should be emailed to wfsoteam@tunkeydev.com .WFSO Operational Controller will use a Work Order system so that each package of work can be assigned a number for reference and record keeping.

8.2 Design Changes

Contractors will not undertake any design stages without seeking the approval of the PSDP / PSCS. Where a change in design is identified as being necessary this shall be brought to the immediate attention of the PSDP / PSCS manager. Contractors are required to notify any changes to the design as early as possible to ensure that sufficient time to assess the impact of this change is allowed.

8.3 Contractor Co-ordination

Where a number of contractors are working in one area or on one system the contractors are required to cooperate with the PSDP / PSCS in ensuring that all works being undertaken on site are coordinated. Where potential conflicts arise, this should be brought to the immediate attention of the PSDP / PSCS.
The PSDP / PSCS manager may arrange meetings with contractors at which safety and co-ordination issues will be discussed so that works is coordinated and a safe schedule of work is implemented.

9. Risk Management (Including Particular Risks)

9.1 Particular Risks Identified During the Design Stage

The SHWW Construction Regulations requires that the PSDP / PSCS includes in this plan specific measures concerning work which involves a particular risk, including but not limited to any risk referred to in Schedule 1 of the Regulations. Information which has been identified during the design stage and which is contained within the Preliminary Safety and Health plan is included in Appendix 4 and must be taken into account by those working on the site. In reviewing drafted safe systems of work the PSDP / PSCS will also consider any particular risks which have been identified in the Preliminary safety and Health Plan by the PSDP or Designers.

9.2 Other Significant Hazards

There may be other significant hazards which have been identified by the designers during the design process. For each of these contractors will be required to assess and control these hazards during the completion of construction activities. This information must be documented in a method statement which will need to be reviewed and approved by the PSDP / PSCS prior to the commencement of the work on-site.

9.3 Change of Construction Method/Design

No deviation from approved method statements will be undertaken without obtaining appropriate written approval of the revised method statement. Implementation of non-approved change represents a significant general hazard. The PSDP / PSCS reserves the right to halt any construction activity which deviates significantly from the activity as set out in a method statement.

9.4 Work Involving Hazardous Substances

Contractors shall be responsible for obtaining Safety Data Sheets and producing suitable and sufficient written risk assessments of all risks associated with the use of hazardous substances. The content of the risk assessments shall be communicated with all workers that are working with or affected by the substances. Copies of all hazardous substance Safety Data Sheets shall be made available to the PSDP / PSCS manager prior to bringing such a chemical on-site.

10. Emergency Procedures

10.1 General Emergency Procedures

10.1.1 Fire- No Personnel in WTG or Building (employee or member of public)

Immediate Reporting Checklist		
Contact	Telephone number	Tick box
Fire and rescue	999 or 112	
Site manager	00353 86 4109155	
Nordex Lead Technician	00353 86 7719707	
OEM	0049 40 30030 1820	

Emergency Procedures - Steps to Take		
Step	Actions to complete	Tick box
1.	On receiving the call assure the caller to be calm and follow your instructions.	
2.	Ask caller for a full description of the incident, if there are any injuries and to confirm what emergency services or if additional assistance is required	
3.	Inform the caller that you are going to call emergency services/additional assistance. Instruct the caller to go to assembly point if safe to do so or make their immediate area as safe as possible. Instruct the caller you will phone them back as soon as possible.	
4.	Raise alarm with the emergency services passing on all information we have received from the caller about the incident. Give the emergency services the following information: • OC phone number • Incident controllers phone number • Site address & gate entrance coordinates • Nearest Eircode to site entrance	
5.	Contact other people on site and inform them of the situation and ask for assistance where possible or to meet the emergency services at the site entrance where possible	
6.	Contact the site manager and inform him of the situation	
7.	Contact the OEM to inform them of the situation.	
8.	Contact ESB/NCC to see if they have any workers at their side of the substation	
9.	Call back the incident controller and inform them of what assistance is on the way	
10.	If safe to so, ask for the HV trip button to be pushed in the substation	

Actions to Complete When No Staff on Site
In the instance of a fire starting in a WTG or a building and there is no one present on site; a member of the public is most likely to be the one to raise the alarm and directly call fire and rescue services or else they will contact the control room number which is present on site. In this case the fire and rescue services will access the site using the signage or will be directed by the party reporting the fire. Under these circumstances the operational controller is to assume the role of the incident controller until the site manager can attend the site and take control

Follow Up Action- Steps to Take		
Steps	Follow up action	Tick box
1.	Contact site manager and get update.	
2.	Contact OEM and give feedback from site manager	
3.	Complete incident report form and send to site manager	
4.	Contact initial caller and ensure everything is OK and thank them for their help.	

10.1.2 Fire- Personnel in WTG Or Building (Employee or Member of Public)

Immediate Reporting Checklist		
Contact	Telephone number	Tick box
Fire and rescue	999 or 112	
Site manager	00353 86 4109155	
Nordex Lead Technician	00353 86 7719707	
Nordex Area Manager	00353 87 2893344	

Emergency Procedures - Steps to Take		
Step	Actions to complete	Tick box
1.	On receiving the call assure the caller to be calm and follow your instructions.	
2.	Ask caller for a full description of the incident, if there are any injuries and to confirm what emergency services or if additional assistance is required	
3.	Inform the caller that you are going to call emergency services/additional assistance. Instruct the caller to go to assembly point if safe to do so or make their immediate area as safe as possible. Instruct the caller you will phone them back as soon as possible. If normal exit routes are blocked, instruct the caller to exit the turbine using the escape/self-rescue kit if safe to do so	
4.	Raise alarm with the emergency services passing on all information we have received from the caller about the incident. Give the emergency services the following information: • OC phone number • Incident controllers phone number • Site address & gate entrance coordinates • Nearest Eircode to site entrance	
5.	Contact other people on site and inform them of the situation and ask for assistance where possible or to meet the emergency services at the site entrance where possible	
6.	Contact the site manager and inform him of the situation	
7.	Contact the OEM to inform them of the situation.	
8.	Contact ESB/NCC to see if they have any workers at their side of the substation	
9.	Call back the incident controller and inform them of what assistance is on the way. Instruct them to: 1. Nominate a person or person to establish a secure exclusion zone 2. If safe to do so, operate the emergency HV switch in the substation control room 3. If possible, nominate someone to meet the emergency services at the site entrance/nearest village	

Follow up action- Steps to take		
Steps	Follow up action	Tick box
1.	Contact site manager and get update.	
2.	Contact OEM and give feedback from site manager	
3.	Complete incident report form and send to site manager	
4.	Contact initial caller and ensure everything is OK and thank them for their help.	

10.1.3 Fire- Moorland or Forest (Employee or Member of Public)

Immediate Reporting Checklist		
Contact	Telephone number	Tick box
Fire and rescue	999 or 112	
Site manager	00353 86 4109155	
Nordex Lead Technician	00353 86 7719707	
Nordex Area Manager	00353 87 2893344	

Emergency Procedures - Steps to Take		
Step	Actions to complete	Tick box
1.	On receiving the call assure the caller to be calm and follow your instructions.	
2.	Ask caller for a full description of the incident, if there are any injuries and to confirm what emergency services or if additional assistance is required	
3.	Inform the caller that you are going to call emergency services/additional assistance. Instruct the caller to go to assembly point if safe to do so or make their immediate area as safe as possible. Instruct the caller you will phone them back as soon as possible.	
4.	Raise alarm with the emergency services passing on all information we have received from the caller about the incident. Give the emergency services the following information: • OC phone number • Incident controllers phone number • Site address & gate entrance coordinates • Nearest Eircode to site entrance	
5.	Contact other people on site and inform them of the situation and ask for assistance where possible or to meet the emergency services at the site entrance where possible	
6.	Contact the site manager and inform him of the situation	
7.	Contact the OEM to inform them of the situation.	
8.	Contact ESB/NCC to see if they have any workers at their side of the substation	
9.	Call back the incident controller and inform them of what assistance is on the way. Ask them to: 1. If safe to do so evacuate adjacent buildings and WTG by raising alarm. 2. Nominate a person or person to establish a secure exclusion zone 3. If safe to do so, operate the emergency HV switch in the substation control room 4. If possible, nominate someone to meet the emergency services at the site entrance/nearest village	

Actions to complete when no staff on site
In the instance of a fire-starting moorland or forest and there is no one present on site, a member of the public is most likely to be the one to raise the alarm and directly call fire and rescue services or else they will contact the control room number which is present on site. In this case the fire and rescue services will access the site using the signage or will be directed by the party reporting the fire. Under these circumstances the operational controller is to assume the role of the incident controller until the site manager can attend the site and take control

Follow up action- Steps to take		
Steps	Follow up action	Tick box
1.	Contact site manager and get update.	
2.	Contact OEM and give feedback from site manager	
3.	Complete incident report form and send to site manager	
4.	Contact initial caller and ensure everything is OK and thank them for their help.	

10.1.4 Fire- Vehicle or Plant (Employee or Member of Public)

Immediate Reporting Checklist		
Contact	Telephone number	Tick box
Fire and rescue	999 or 112	
Site manager	00353 86 4109155	
Nordex Lead Technician	00353 86 7719707	
OEM	0049 40 30030 1820	

Emergency Procedures - Steps to Take		
Step	Actions to complete	Tick box
1.	On receiving the call assure the caller to be calm and follow your instructions.	
2.	Ask caller for a full description of the incident, if there are any injuries and to confirm what emergency services or if additional assistance is required If safe to do so, ask them to make a brief attempt to fight the fire.	
3.	Inform the caller that you are going to call emergency services/additional assistance. Instruct the caller to go to assembly point if safe to do so or make their immediate area as safe as possible. Instruct the caller you will phone them back as soon as possible.	
4.	Raise alarm with the emergency services passing on all information we have received from the caller about the incident. Give the emergency services the following information: • OC phone number • Incident controllers phone number • Site address & gate entrance coordinates • Nearest Eircode to site entrance	
5.	Contact other people on site and inform them of the situation and ask for assistance where possible or to meet the emergency services at the site entrance where possible	
6.	Contact the site manager and inform him of the situation	
7.	Contact the OEM to inform them of the situation.	
8.	Contact ESB/NCC to see if they have any workers at their side of the substation	
9.	Call back the incident controller and inform them of what assistance is on the way. Ask them to: 1. If safe to do so evacuate adjacent buildings and WTG by raising alarm. 2. Nominate a person or person to establish a secure exclusion zone 3. If safe to do so, operate the emergency HV switch in the substation control room If possible, nominate someone to meet the emergency services at the site entrance/nearest village	

Actions to Complete When No Staff on Site
In the instance of a fire-starting in a vehicle or plant and there is no one present on site, a member of the public is most likely to be the one to raise the alarm and directly call fire and rescue services or else they will contact the control room number which is present on site. In this case the fire and rescue services will access the site using the signage or will be directed by the party reporting the fire. Under these circumstances the operational controller is to assume the role of the incident controller until the site manager can attend the site and take control

Follow Up Action- Steps to Take		
Steps	Follow up action	Tick box
1.	Contact site manager and get update.	
2.	Contact OEM and give feedback from site manager	
3.	Complete incident report form and send to site manager	
4.	Contact initial caller and ensure everything is OK and thank them for their help.	

10.1.5 Injury- Walking Casualty (Employee or Member of Public)

Immediate Reporting Checklist		
Contact	Telephone number	Tick box
Fire and rescue	999 or 112	
Site manager	00353 86 4109155	
Nordex Lead Technician	00353 86 7719707	
Nordex Area Manager	00353 87 2893344	

Emergency Procedures - Steps to Take		
Step	Actions to complete	Tick box
1.	On receiving the call assure the caller to be calm and follow your instructions.	
2.	Ask caller for a full description of the incident, if there are any injuries and to confirm what emergency services or if additional assistance is required.	
3.	If emergency services are not required, ask the caller: 1. If they are suitably trained, to give first aid using the first aid kit if available. 2. Ask them if possible, to go to the substation and wait for further assistance. Using Baze, check to see if there are other people available on site to assist. Arrange for the casualty to be collected and brought to the nearest hospital/doctor for treatment if required. If there is any doubt as to the seriousness of an injury, medical treatment must always be sought.	
3(A).	Inform the caller that you are going to call emergency services/additional assistance. Instruct the caller to go to assembly point if safe to do so or make their immediate area as safe as possible. Instruct the caller you will phone them back as soon as possible.	
4.	Raise alarm with the emergency services passing on all information we have received from the caller about the incident. Give the emergency services the following information: • OC phone number • Incident controllers phone number • Site address & gate entrance coordinates • Nearest Eircode to site entrance	
5.	Contact other people on site and inform them of the situation and ask for assistance where possible or to meet the emergency services at the site entrance where possible	
6.	Contact the site manager and inform him of the situation	
7.	Contact the OEM to inform them of the situation.	
8.	Contact ESB/NCC to see if they have any workers at their side of the substation	
9.	Call back the incident controller and inform them of what assistance is on the way	

Actions to complete when no first aid staff on site
All work parties should include at least Two persons trained in first aid; however, should a situation arise where suitably trained staff are not available to render first aid, a suitably trained person is to attend site immediately; where this cannot be achieved within 30 minutes the casualty is to be conveyed to the nearest medical facility. During any delay in attending to the casualty, first aid advice is to be given by telephone by the operational controller or by emergency services.

Follow up action- Steps to take		
Steps	Follow up action	Tick box
1.	Contact site manager and get update.	
2.	Contact OEM and give feedback from site manager	
3.	Complete incident report form and send to site manager	
4.	Contact initial caller and ensure everything is OK and thank them for their help.	

10.1.6 Injury- Stretcher Casualty (Employee or Member of Public)

Immediate Reporting Checklist		
Contact	Telephone number	Tick box
Fire and rescue	999 or 112	
Site manager	00353 86 4109155	
Nordex Lead Technician	00353 86 7719707	
Nordex Area Manager	00353 87 2893344	

Emergency Procedures - Steps to Take		
Step	Actions to complete	Tick box
1.	On receiving the call assure the caller to be calm and follow your instructions.	
2.	Ask caller for a full description of the incident, if there are any injuries and to confirm what emergency services or if additional assistance is required	
3.	Inform the caller that you are going to call emergency services/additional assistance. Instruct the caller to go to assembly point if safe to do so or make their immediate area as safe as possible. Instruct the caller you will phone them back as soon as possible.	
4.	Raise alarm with the emergency services passing on all information we have received from the caller about the incident. Give the emergency services the following information: • OC phone number • Incident controllers phone number • Site address & gate entrance coordinates • Nearest Eircode to site entrance	
5.	Contact other people on site and inform them of the situation and ask for assistance where possible or to meet the emergency services at the site entrance where possible	
6.	Contact the site manager and inform him of the situation	
7.	Contact the OEM to inform them of the situation.	
8.	Contact ESB/NCC to see if they have any workers at their side of the substation	
9.	Call back the incident controller and inform them of what assistance is on the way Instruct the caller to: 1. Prepare the casualty for evacuation and await assistance 2. Evacuate the casualty using evacuation equipment stored at your location; if this is inappropriate due to the nature of the injury, ask the caller to monitor the casualty and await assistance Transfer the casualty to the emergency services when they are in attendance.	

Actions to Complete by Operational Controller
All work parties should include at least Two persons trained in first aid and evacuation equipment is located in the nacelle of each WTG; however, should a situation arise where suitably trained staff are not available to render First aid or manage the casualty, suitably trained personnel must attend the situation to provide assistance. Emergency services must always be dispatched to site. During any delay in attending to the casualty, first aid advice is to be given by telephone by the operational controller or by emergency services.

Follow Up Action- Steps to Take		
Steps	Follow up action	Tick box
1.	Contact site manager and get update.	
2.	Contact OEM and give feedback from site manager	
3.	Complete incident report form and send to site manager	
4.	Contact initial caller and ensure everything is OK and thank them for their help.	

10.1.8 Injury- Fatality (Employee or Member of Public)

Immediate Reporting Checklist		
Contact	Telephone number	Tick box
Fire and rescue	999 or 112	
Site manager	00353 86 4109155	
Nordex Lead Technician	00353 86 7719707	
Nordex Area Manager	00353 87 2893344	

Emergency Procedures - Steps to Take		
Step	Actions to complete	Tick box
1.	On receiving the call assure the caller to be calm and follow your instructions.	
2.	Ask caller for a full description of the incident, if there are any injuries and to confirm what emergency services or if additional assistance is required	
3.	Inform the caller that you are going to call emergency services/additional assistance. Instruct the caller to go to assembly point if safe to do so or make their immediate area as safe as possible. Instruct the caller you will phone them back as soon as possible.	
4.	Raise alarm with the emergency services passing on all information we have received from the caller about the incident. Give the emergency services the following information: • OC phone number • Incident controllers phone number • Site address & gate entrance coordinates • Nearest Eircode to site entrance	
5.	Contact other people on site and inform them of the situation and ask for assistance where possible or to meet the emergency services at the site entrance where possible	
6.	Contact the site manager and inform him of the situation	
7.	Contact the OEM to inform them of the situation.	
8.	Contact ESB/NCC to see if they have any workers at their side of the substation	
9.	Call back the incident controller and inform them of what assistance is on the way Instruct caller to: 1. Arrange for the emergency services to be met at the site entrance and escort them to site. 2. If it is safe to do so, make the plant safe and isolate the equipment from all sources of energy supply 3. Secure the scene of the accident by establishing an exclusion zone Remain at the scene until the necessary support is in attendance, then transfer control of the incident to the emergency services that are in attendance.	

Follow up action- Steps to take		
Steps	Follow up action	Tick box
1.	Contact site manager and get update.	
2.	Contact OEM and give feedback from site manager	
3.	Complete incident report form and send to site manager	
4.	Contact initial caller and ensure everything is OK and thank them for their help.	

10.1.9 Adverse Weather (Employee or Member of Public)

Immediate Reporting Checklist		
Contact	Telephone number	Tick box
Fire and rescue	999 or 112	
Site manager	00353 86 4109155	
Nordex Lead Technician	00353 86 7719707	
Nordex Area Manager	00353 87 2893344	

Emergency Procedures - Steps to Take		
Step	Actions to complete	Tick box
1.	If the weather exceeds the safe parameters, immediately contact all parties on site (find on Bazefield) and advise that the cease all works and proceed to a safe area.	
2.	Contact site manager and inform him of the situation	
3.	Contact OEM and inform them of the situation	
4.	Instruct all parties to stay in CLEANRATH substation and monitor condition using Scada or lightning detection.	
5.	If conditions continue to get worse evacuate site full on earliest safe opportunity.	
6.	Instruct parties to ensure access gate is fully locked and no access is permitted	
7.	Confirm all parties have left site	
8.	Should weather conditions deteriorate to the extent that it is unsafe to attempt to leave site, instruct all parties to stay in substation until it's possible to leave.	

Actions to Complete When No Staff on Site
If the Weather Conditions Exceed the Safe Parameters, Contact Site Manager to Advise That No Work May Proceed and Access to Site Is to Be Restricted. Also, Prevent Transfer of Control for All Assets at Site Until Conditions Are Safe. For Planned Work, Site Manager Is to Notify Working Parties in Advance to Prevent Attempt of Access.

Follow Up Action- Steps to Take		
Steps	Follow up action	Tick box
1.	If a dangerous event has occurred, complete incident report form and send to relevant parties.	
2.	Infor site manager of all actions taken and downtime due to adverse weather.	

10.1.10 Adverse Weather (Overspeed) - Personnel in WTG Or Building (Employee or Member of Public)

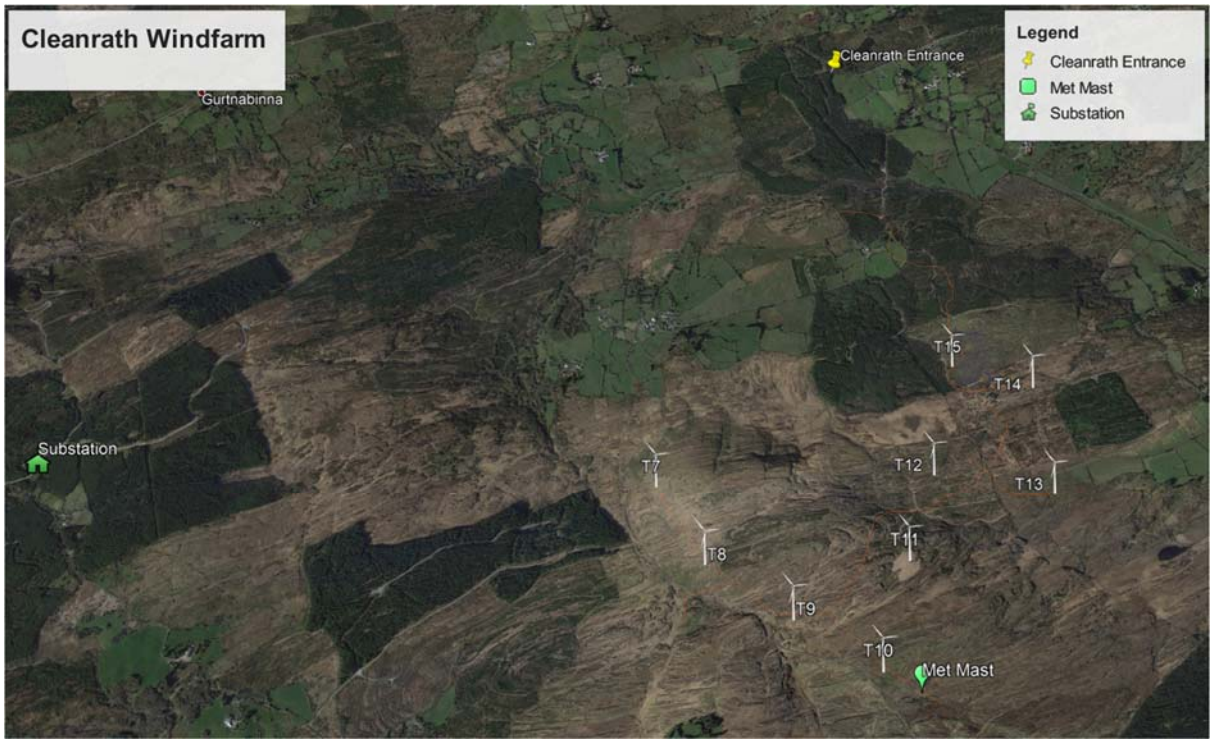
Emergency Procedures - Steps to Take		
Step	Actions to complete	Tick box
1.	Instruct caller to: 1. Cease all operations and evacuate the site by the route furthest from the affected turbine if safe to do so 2. Instruct all personnel to proceed to the furthest assembly point from the overspeed at CLEANRATH windfarm 3. Inform neighboring windfarm. 4. Secure the site and post sentries at all likely points of access	
2.	Instruct OEM to remove all turbines from service via Scada	
3.	Contact site manager and inform them of the situation	

Immediate Reporting Checklist		
Contact	Telephone number	Tick box
Fire and rescue	999 or 112	
Site manager	00353 86 4109155	
Nordex Lead Technician	00353 86 7719707	
Nordex Area Manager	00353 87 2893344	

Actions to Complete When No Staff on Site
In the instance of a turbine over-speed and there is no one present on site, a member of the public is most likely to be the one to raise the alarm and directly call fire and rescue services or else they will contact the control room number which is present on site. Under these circumstances the operational controller is to assume the role of the incident controller until the site manager can attend the site and take control

Follow up action- Steps to take		
Steps	Follow up action	Tick box
1.	Contact site manager and check if situation is under control	
2.	Complete incident report form.	

10.2 Site Entrance Coordinates



Turbine and Entrance Co-Ordinates.

Cleanrath	Irish Grid		GPS (Degree Decimal)		GPS (Degree Min Sec)					
	Easting	Northing	Latitude	Longitude	Latitude (N)			Longitude (W)		
					Deg	Min	Sec	Deg	Min	Sec
Entrance	120600	71674	51.89192	-9.15419	51	53	30.9	9	9	15.1
T7	119446	69620	51.8733	-9.17047	51	52	23.9	9	10	13.7
T8	119610	69251	51.87	-9.168	51	52	12	9	10	4.8
T9	119952	68981	51.86763	-9.16297	51	52	3.5	9	9	46.7
T10	120288	68725	51.86537	-9.15804	51	51	55.3	9	9	28.9
T11	120493	69178	51.86947	-9.15517	51	52	10.1	9	9	18.6
T12	120682	69553	51.87287	-9.15251	51	52	22.3	9	9	9
T13	121200	69411	51.87167	-9.14496	51	52	18	9	8	41.8
T14	121213	69913	51.87618	-9.14488	51	52	34.3	9	8	41.6
T15	120871	70057	51.87743	-9.14988	51	52	38.7	9	8	59.6
Substatio	116745	69916	51.87556	-9.20975	51	52	32	9	12	35.1
Mast	120416	68562	51.86393	-9.15614	51	51	50.1	9	9	22.1

10.3 Directions to Cork University Hospital

Site Entrance Turbines 7 - 15

Access information

Directions from Cork University Hospital to Cleanrath Substation.

Directions from Macroom to Cleanrath

- After going straight through Macroom from the Cork city side continue following the road west for 6.00km until you reach Moon's bar.
- Take the left at Moon's bar.
- Continue on this road of 12.00km and the windfarm entrance will be on your left-hand side.
- The site entrance will be 1.00km before the house with the Eircode **P12 N704**.
- The substation is located past the entrance for turbine 6.

11. Notification of Accidents/Dangerous Occurrences

All Contractors shall inform the Project Supervisor for the Construction Stage of any accidents/dangerous occurrences immediately and without unreasonable delay in accordance with the SHWW (General Application) Regulations 2007.

The PSDP / PSCS shall investigate all accidents, incidents and near misses which occur on the site including all accidents involving contractor personnel. The PSDP / PSCS Manager shall be responsible for ensuring that any action items which are raised are closed out as soon as possible. The PSDP / PSCS manager shall ensure that full and comprehensive records of all accident, incident and near miss report and investigations are maintained on file.

12. Welfare Arrangements

The site compound being provided is in the Cleanrath Substation. Provided in the compound is a toilet, an office with broadband and a stores facility for spare parts for the turbines.

13. Information and Training

13.1 Site Induction

A site-specific online induction has been developed by the PSDP / PSCS Manager and this is to be completed by all operatives before proceeding onto the windfarm site. During this induction operatives, will be able to upload a copy of their training certificates for review.

Once the induction has been successfully completed, operatives will be able to download a copy of:

- Cleanrath Site Layout
- Cleanrath Emergency Procedures
- Catastrophic Event Flowchart

13.2 Toolbox Talks

Toolbox talks will take place when deemed necessary by risk assessment or method statement. Where required they shall involve the PSDP / PSCS Manager, Contractor Supervisor and the work force that are involved in the work activity. In addition to giving the employees information on a specific topic, the supervisor will encourage feedback and questions from the operatives.

Records of toolbox talks will be made and be passed to the PSDP / PSCS manager. The records will include the Supervisor's name, topic discussed, attendee's names and signatures and the questions raised, complete with the answers given and any remaining concerns of the employees and supervisors.

13.3 Statutory training

In order to comply with the provisions made under regulations 4, 19, 25 and 29 of the SHWW (Construction) Regulations 2013, The PSDP / PSCS requires that all employees working on this project are in possession of a valid FAS Safe Pass card prior to commencing works on-site.

WFSO Operation's further requires that all plant operators be in possession of a valid registration card (Construction Skills Certification Scheme, or accredited equivalent). The particulars of this card shall be in compliance with schedule 4 of the SHWW (Construction) Regulations 2013. It is the contractor's responsibility to ensure that valid training records for all employees are provided to the PSDP / PSCS Manager prior to an employee commencing work on-site.

14. Consultation with People on Site

Employees will be consulted through the site induction's and site safety meetings. Given the small number of employees likely to be on site at any one time it is not considered likely that a safety representative will be nominated. However, employees are encouraged to make the PSDP / PSCS Manager aware of any issues which concern health and safety on site. Should the number of employees on-site exceed 20 people the PSDP / PSCS Manager shall facilitate the election and appointment of a site safety representative in accordance with the relevant legislation.

15. Site Rules

Site Rules are detailed in Appendix 2. A copy of these site rules shall be made available to all employees at induction. Site rules may also be posted in the project area.

16. Safety File

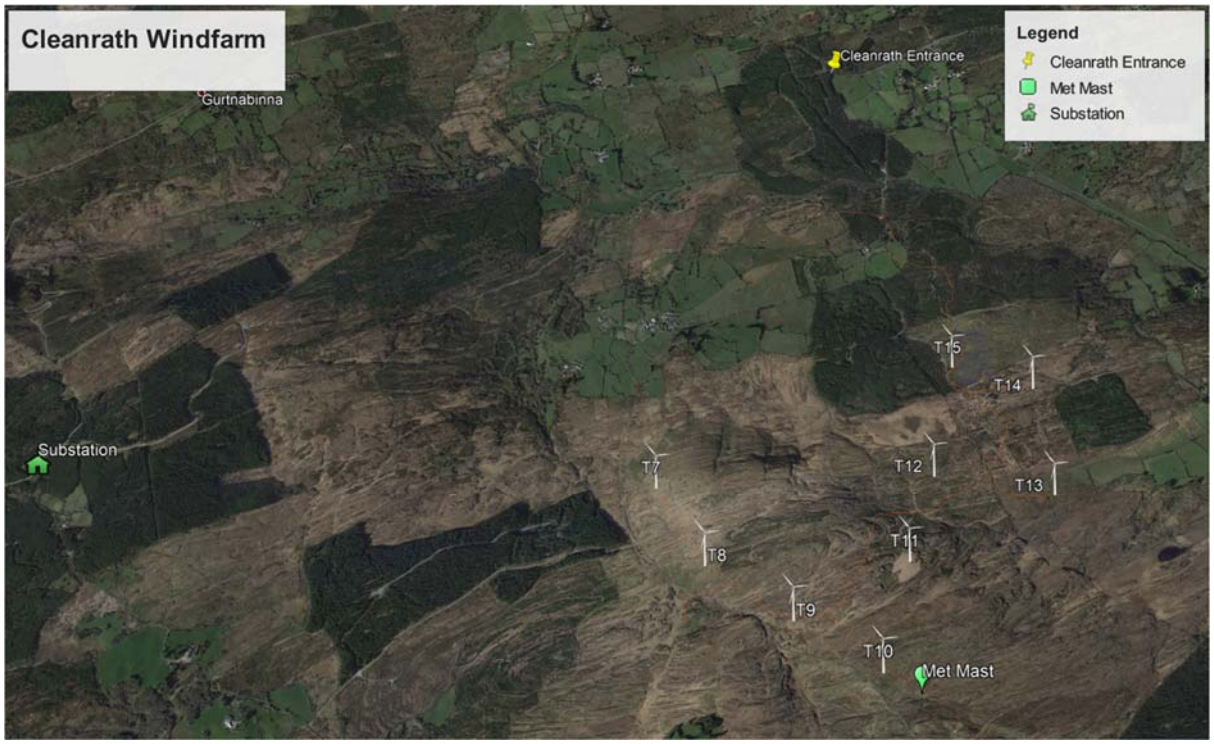
It is not envisaged that any additions to the safety file will be required as all replacements will be on a like for like basis, however any changes will be recorded. Contractors are required to provide details to the PSDP / PSCS Manager for inclusion in the Safety file. In particular, any modification to services must be redlined on to the master site drawings / documents and included in the Safety file. This should be done immediately after the modification is made. Operation and maintenance manuals for equipment are required for any new equipment installed on the Windfarm. Specifications and data sheets for materials are required.

17. Arrangements for Monitoring (Inspections/Audits)

The PSDP / PSCS will monitor the Contractor's health and safety activities. This monitoring will involve inspections appropriate to the scale and complexity of the works. The inspection will be led by the PSDP / PSCS manager or his representative and involve representatives from the contractor's supervisory staff.

The results of inspections and audits will be published and reviewed by the PSDP / PSCS manager and the contractor supervisors. The PSDP / PSCS Manager will ensure that corrective actions are subsequently completed

Appendix 1: Site Location Drawing



Appendix 2: Construction and Maintenance Projects Site Rules

(A) Personnel Identification & Safety Induction

All personnel must attend site induction, signing on completion that they understand the site rules.

(B) Personal Protective Equipment

It is a mandatory requirement for all construction and maintenance personnel and their visitors including vendors and truck drivers to wear the following protective equipment at all times on site.
Safety Boots
Hi-Visibility Vests
Hard Hats
Gloves
For certain specific tasks personnel, will also be required to additional PPE such as eye/hearing protection, personal fall arrest equipment and respiratory protection.

(C) Smoking

SMOKING is not permitted in enclosed areas at Cleanrath Wind Farm. Smoking is only allowable in external areas but is not allowed whilst working. In addition, all cigarettes and matches must be properly quenched to eliminate potential bush fires.

(D) Clean-up

A daily clean-up of all areas is required to prevent the accumulation of combustible materials such as paper, wood, etc.

(E) Compressed Gas

Secure all compressed gas cylinders in an upright position so they cannot be knocked over. Do not drop from a height. Close the main cylinder valve when left unattended for extended period of time. Compressed gas cylinders should be stored in a safe manner when not in use. Flammable gas cylinders should be fitted with flash back arrestors when in use.

(F) Motor Vehicles

Only authorized vehicles are allowed onsite. Authorization must be sought from the PSDP / PSCS. Speed limits within the site access roads are restricted to 15 kmph.

(G) Alcoholic beverages and Drugs

The consumption of alcohol or drugs is strictly prohibited. Any person found under the influence of either substance will be escorted from the project.

(H) Eating

The eating of food of any kind on site is prohibited other than in contractor's own vehicles. And in the compounds provided

(I) Tools and Equipment

Contractors are responsible for providing all of their own tools and equipment. They are also responsible for ensuring that this equipment is kept in a safe and usable manner. Contractors will also be responsible for ensuring that tools are stored in safe location when not in use.

(J) Transport of Fuels / Solvents

The transport of any liquid type solvent onto site for construction and maintenance purposes must be in an appropriate type, fully labeled container. An appropriate type container does not mean soft drink bottles or such like. Specific permission must be obtained from the PSDP / PSCS prior to bringing in and storing any flammable liquid.

(K) Contractors Safety Management

Contractors shall have a safety statement that is in compliance with statutory and company policy and shall implement effective safety programs accordingly. Contractors shall manage the activities of their own employees. Contractors must also co-operate with each other and the PSDP / PSCS, any areas of contention should be immediately brought to the attention of the PSDP / PSCS for resolution.

(L) Contractor Responsibilities

Each new Contractor employee arriving at the work site shall be clearly instructed on the contents of the contractor's safety statement and their role in emergencies. Before being allowed to commence work, contractor's employees shall be made fully aware of the potential hazards of their particular working environment. Hazardous areas must be explained and identified to the employees.

Contractor's employees shall be made fully aware of the safety regulations applicable to the work site including the smoking regulations, traffic/parking restrictions etc., and properly instructed regarding the danger of handling hazardous materials with which they may be involved.

Contractors shall ensure that employees are provided with appropriate personal protective equipment (at no cost to the employees). The equipment shall be used in accordance with job requirements and replaced as necessary.

All Contractors equipment and tools shall be kept in a good and safe condition and be inspected at regular intervals as determined by the company. They should be replaced when, damaged or broken and never used on work for which they were not designed. Contractors will be required to conduct risk assessments and submit detailed written method statements for part, or all of their scope of operations as required by the PSDP / PSCS.

(M) PSDP / PSCS Roles & Responsibilities

The PSDP / PSCS will monitor and enforce these rules and regulations. If necessary, PSDP / PSCS Supervision may stop or suspend all or part of a Contractors operation when safety hazards or poor work practices exist. Such suspension may remain in effect until all discrepancies are corrected.

(N) Contractors Supervision

Contractor's Supervision will be held responsible for:

- Maintaining safe working conditions with their work crews.
- Correcting unsafe practices of his workmen and instructing same in proper methods.
- Enforcement of the wearing of personal protective equipment as deemed necessary for the job being performed.
- Attending safety meetings as required.
- Setting a good example for all personnel.
- Reporting all injuries and incidents involving bodily harm, property damage and near misses regardless of the craft involved.
- Assisting in accident investigations when required.
- Instructing new employees on job specific safe work practice, procedures and ensuring they are familiar with safety features of tools and equipment used.
- Continually inspecting work locations as work is in progress. Noting and take corrective action on any discrepancies.

(O) Employees Responsibilities

Every employee is responsible for their own safety and the safety of other personnel on the project. Every employee is responsible for ensuring work is carried out in a safe manner. It is therefore necessary for each employee to know and adhere to all applicable regulations which apply to them and to identify and report hazards. It is also important that accidents, incidents and near misses are reported to avoid reoccurrence. The responsibilities of the employees shall include but not be limited to the following:

- Carry out their duties in a safe manner with due regard to safety.
- Work in compliance with statutory regulations and the instructions of their supervisors and comply with safe working practices and procedures.
- Maintain tools and equipment in good work order and report defects to supervision.
- Obtain necessary work permits and abide by their respective requirements.
- Report all unsafe acts or conditions including near misses without delay to supervision.
- Wear personal protective equipment and clothing correctly as and when required and maintain these in good order.
- Reports any accident, incident or, near miss to their immediate supervisor without delay.

Appendix 3: Tasks Scheduled for Completion under This Plan

No.	Activity	Details
1	Routine maintenance to the wind turbine machinery and systems	There are two types of turbine on site. • N117 3.6MW • N117 2.4MW The N100 & N117 will require different maintenance schedules and these are given in detail in Appendix 6 Nordex will carry out this work under the wind turbine safety rules version 3
2	Closure of original snag items	There are a number of outstanding snags on numerous Turbines and are to be repaired by Nordex to meet their specifications.
3	High Voltage switching equipment maintenance.	The High Voltage electrical switching equipment will undergo routine maintenance during the year by a company called H&MV and it is expected that this work will be completed during the summer and the work will last one week.
4	Site Infrastructure upkeep	• All roads will be maintained to a high standard on site. This will involve spraying and general maintenance work and will be carried out when required by an appointed contractor. • Site welfare unit's sewage system to be emptied and maintained by an appointed contractor. This work will commence when required by the appointed contractor. • Site drainage will be constantly monitored to ensure no blockages occur in any silt traps work carried out weekly by site operation manager
5	Health and Safety Audit	Two Health and safety Audits will be carried out by WFSO. Christopher Murnane the PSDP / PSCS Manager will conduct monthly Audits on site.

Appendix 4: Items of Particular Risk Thought Likely to Arise During Planned Activities

Work which puts persons at work at risk of -

(a) Falling from a height, where the risk is particularly aggravated by the nature of the work, process or environment.
Identified Work Activities:

- Work on the fairing of the nacelle.
- Routine maintenance activities requiring access to the roof of the nacelle.
- Mitigation measures taken / required:
- Detailed method statements are required for working at height during turbine maintenance or snagging activities.
- Competence and Experience of Crane Company engaged by contractor to be addressed prior to any crane operations.

(b) Burial under earth falls where the risk associated with working in an excavation is aggravated by the nature of the work, process or environment.

Identified Work Activities:
It is not envisaged that this risk will occur.

Mitigation measures taken / required:
None required

(c) Engulfment in swampland where the risk is aggravated by the nature of the work, process or environment

Identified Work Activities:
It is not envisaged that this risk will occur.

Mitigation measures taken / required:
None required b

Work which puts persons at work at risk from chemical or biological substances constituting a particular danger to the safety and health of such persons or involving a statutory requirement for health monitoring.

Identified Work Activities:

- Works involving cleaning, degreasing of component parts of turbines.
- Maintenance activities involving oils or lubricants

Mitigation measures taken / required:

- Safe systems of work identifying and risk assessing the chemicals to be used during these works to be developed by the contractor during these works.
- Appropriate means of disposing of chemically contaminated waste material to be identified by the contractor prior to commencement of works.

Work with ionising radiation requiring the designation of controlled or supervised areas as defined in Directive 96/29/Euratom.

Identified Work Activities:
It is not envisaged that this risk will occur.
Mitigation measures taken / required:
None required

Work near high voltage power lines.

Identified Work Activities:
At Site:

- Underground cables on site supplying power from the turbines to the substation
- Overhead cables present on access routes to the site.

Mitigation measures taken / required:

- All contractors must verify the extent and location of all existing services and take all appropriate precautions in respect of these services before carrying out any work. The approach of contractors to the carrying out of any excavations must be in accordance with the HSA "Code of Practice for Avoiding Danger from Underground Services" and must be detailed in a method statement. Work in the vicinity of ESB cables must be coordinated with ESB in advance and the appropriate permissions sought and precautions taken.
- For works or any ancillary works in the vicinity of HV lines the contractor must take all measures to deal with the risks and ensure that the ESB Guidance on working near Overhead Lines is fully complied with.
- When bringing high loads or machinery to site a road survey must be completed to ensure that adequate clearance is in place to ensure safe access to the site for all machinery.

Work exposing persons at work to the risk of drowning

Identified Work Activities:

- Water samples to be taken from specific rivers on site

Mitigation measures taken / required:

- Employee must notify PSDP / PSCS manager of when the work is starting and when job is complete.
- PSDP / PSCS manager to have detailed maps of sample locations.
- Proper standing banks to be allocated where employee is competent to withdraw water from the river

Work on wells, underground earthworks and tunnels.

Identified Work Activities:
None envisaged.

Mitigation measures taken / required:
None required

Work carried out by divers at work having a system of air supply.

Identified Work Activities:
None envisaged

Mitigation measures taken / required:
None required

Work carried out in a caisson with a compressed-air atmosphere.

Identified Work Activities:
None Envisaged

Mitigation measures taken / required:
None required

Work involving the use of explosives.

Identified Work Activities:
None Envisaged.

Mitigation measures taken / required:
None required

Work involving the assembly or dismantling of heavy prefabricated components.

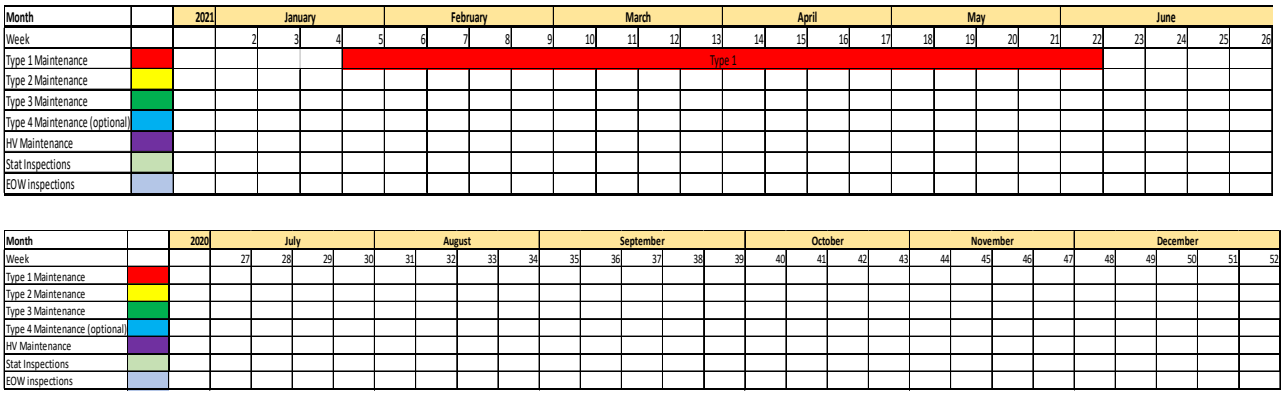
Identified Work Activities:
It is not envisaged that this risk will occur.
Mitigation measures taken / required:
None required

Appendix 5: Information for Inclusion in the Safety File

1. **General Health and Safety**
   - 1.1. Operational and Maintenance H&S Plan and Emergency Procedure Documents
     - 1.1.1. H&S plan
     - 1.1.2. Catastrophic Event Flowchart
     - 1.1.3. Emergency Plan
     - 1.1.4. Emergency Response Plan
     - 1.1.5. Layout
     - 1.1.6. Site Access Procedure
     - 1.1.7. Word documents
   - 1.2. Site Inductions
   - 1.3. AF1 & AF2 Documents
   - 1.4. Site Documents
     - 1.4.1. AWP's
     - 1.4.2. As Builds
     - 1.4.3. Site Layout
     - 1.4.4. Accident Incident Register
     - 1.4.5. Turbine Conformity Certs
   - 1.5. Statutory Inspections
   - 1.6. Health and Safety Audits
   - 1.7. Windfarm Company Documents
     - 1.7.1. Safety Statement
     - 1.7.2. WFSO RAMS

Call Operational Controller for Most Recent Documents (021 7355 898)

Appendix 6 Site Plan for Scheduled Maintenance 2020



Appendix 7 Tasks planned for Completion Cleanrath Substation

No.	Activity	Details
1	High voltage Switching	• All switching will be conducted to contractor's HMV Telemess procedures. Lock out systems will be in operation this is included in Appendix 8 • PSDP / PSCS will be notified on any switching taking place on site.
2	SCADA	• Data files to be backed up weekly on a Monday. • Faults on system will require specialist attention any such work will be reviewed by the PSDP / PSCS.
3	Fire Alarm	• Routine inspections and service will take place on all detectors and panel once every three months first service due is in March. Any faults and extra works required will be inspected before completion by PSDP / PSCS.
4	Security Alarm	• One-year service on system. It is planned that this work will be carried out in September. • Any further works to be accessed by PSDP / PSCS and passed before work completion

5	Transformers	• Oil samples to be taken on all transformers this work will commence in the summer • Routine service to also be carried out once a year and the summer months is scheduled for this also.
6	HV Circuit Breaker	• All CB's will need to be greased and serviced on a yearly basis. This work will coincide with transformers inspections in the summer months.
7	Forestry	• Coillte will have full access to all roads through the site they shall inform the PSDP / PSCS on entering and leaving the site.

Appendix 8 Telemess Procedures at Substation

GENERATOR INTERFACES (WINDFARMS) – User's Guide

Each DG (Dispersed Generation) must nominate their Operators, whether their own staff or an Electrical Contractor's staff. In the case of dealing with Wind Generation these must be approved Windfarm Operators. These names must be advised in writing to the controller of the ESB's System. The nominated Operators must be contactable within one hour and be at the DG site within two hours

Note: Approved Windfarm Operator = DeCorkd as competent to act as an Operator by the Windfarm owner/Management and have successfully completed Telemess Assessment.

ESB's Operations staff must never operate customer's equipment – except in a life-threatening situation.

The Telemess procedure requires six Telemess to disconnect the Windfarm and another six to reconnect the Windfarm from the system.

The Windfarm Operations staff must be familiar with their own electrical installation, and in particular they must know how to operate their own equipment, use of voltage detectors, and how and when to apply earths to their own equipment.

The ESB Operator in Charge should be familiar with the type of switchgear used by a Dispersed Generator – including the switching and earthing mechanisms – and be satisfied re same.

ESB and the Dispersed Generation staff will familiarize themselves with the installation by carrying out a site visit and checking that the installation is as shown on the SLD.

ESB Operator in Charge must be the first to apply Main Earths.

ESB Operator in Charge must be the first to connect to the system.

To Disconnect a Windfarm the Telemess procedure is as follows:

Telemess

1. The Windfarm Operator gives a Request for Disconnection to the ESB Operator in Charge.

2. The ESB Operator in Charge then receives permission from the Controller of the System to proceed with the switching. The ESB Operator in Charge then gives a Request for Disconnection to the Windfarm Operator.
This must include the statement "Do Not Apply Main Earths".

The Windfarm Operator disconnects at 20kV & at 38kV.
The Windfarm Operator applies a HOLD OFF notice at the 20kV side,
(ESB Operator in Charge may have to remove a DANGER LOCK to allow this.)

3. The Windfarm Operator gives a Proof of Disconnection to the ESB Operator in charge. The ESB Operator OPENS the ESB incomer to the Windfarm & applies a HOLD OFF to the DL.ESB Operator in Charge checks for loss of Voltage then applies Main Earths with Main Earth Notice.

4. The ESB Operator in Charge then gives a Request for Application of Main Earths (RAME) to the Windfarm Operator. The Windfarm Operator checks for Loss of Voltage, Applies Main Earth & affixes a Main Earth Notice. (ESB Operator in Charge may have to remove a DANGER LOCK to allow this. If so the DANGER LOCK should be re-applied after Main Earths are applied)

5. The Windfarm Operator then gives a Proof of Application of Main Earths to the ESB Operator in Charge.

6. The ESB Operator in Charge then gives an overall Proof of Disconnection to the Windfarm Operator. Windfarm Operator will now fit a Not to Be Operated notice on all LV supplies.

THIS TELEMESS PROCEEDURE CANNOT AND MUST NOT BE SHORTENED IN ANY WAY

To Reconnect a Windfarm the Telemess procedure is as follows:

The Windfarm Operator removes all Local Earths ONLY and all Not to Be Operated notices.

Telemess

1 The Windfarm Operator gives a Request for Connection (which includes a Proof of Readiness in the body of the text) to the ESB Operator in Charge. A Declaration of Fitness may be required by the Controller of the ESB System prior to permission being given to allow re-connection of plant.

2 The ESB Operator in Charge then receives permission from the Controller of the System to proceed with the switching. The ESB Operator in Charge then gives a Request for Removal of Main Earth to the Windfarm Operator (which includes the statement Do Not
Remove any Hold Off notice & Do Not Connect)

The Windfarm Operator removes the Main Earth notice & OPENS the Main Earth switch. (ESB Operator in Charge may have to remove a DANGER LOCK for this. If so the lock should be refitted once the Main Earth is removed)

4 The Windfarm Operator then gives a Proof of Removal of Main Earth to the ESB Operator in Charge.

The ESB Operator in Charge removes the Main Earth Notice & Main Earth from the ESB side of the 110kV Cubicle, then Removes the HOLD OFF notice from the DL.
Following a verbal request from the Windfarm Operator the ESB Operator in Charge then Closes the DL.

4 The ESB Operator in Charge then gives a Request for Connection to the Windfarm Operator to allow removal of HOLD OFF notice (which includes the statement DO NOT CLOSE the CB at this stage.

The Windfarm Operator removes the HOLD OFF from the 20kV side and racks back in the CB, but Does Not Close the CB.

5: The Windfarm Operator then gives a Proof of Connection to the ESB Operator in Charge.

6: The ESB Operator in Charge then gives an overall Proof of Connection to the Windfarm Operator.

The Windfarm Operator may now under normal operating procedure with ESB Networks as the 110kV system controller for permission to close their 38kV CB.
THIS TELEMESS PROCEEDURE CANNOT AND MUST NOT BE SHORTENED IN ANY WAY.

APPENDIX B

PEATLAND HABITAT RESTORATION PLAN

Peatland Restoration and Management Plan

Cleanrath Wind Farm, Co. Cork

DOCUMENT DETAILS

Client:	**Cleanrath Windfarm Ltd.**
Project Title:	**Cleanrath Wind Farm, Co. Cork**
Project Number:	**180511**
Document Title:	**Peatland Restoration and Enhancement Plan**
Document File Name:	**PREP F – 2020.07.17 – 191223a**

Prepared By:

MKO
Tuam Road
Galway
Ireland
H91 VW84

Planning and Environmental Consultants

Rev	Status	Date	Author(s)	Approved By
01	Final	17/07/2020	DMN	PR

Table of Contents

1. INTRODUCTION

1.1 Background

The EIAR that was prepared for this application prescribed the provision of a Habitat Restoration and Enhancement Plan to offset the loss of peatland habitats that are within the footprint of the subject development. The development footprint is located on 4.13 hectares of peatland habitat. This is less than Cleanrath wind farm development was originally predicted in the original application as two turbines have not been constructed. The peatland habitats on which the windfarm is located consists primarily of a mosaic of Wet Heath, Blanket Bog and Acid Flush with outcropping of Exposed siliceous rock (ER1). The areas of deep peat within the study area have been avoided in the design of the development and all areas that are within the construction footprint have been degraded through extensive grazing of sheep, cattle and/or horses, drainage, peat cutting, forestry or scrub encroachment.

This Peatland Restoration and Management Plan (PRMP) provides details of where measures will be employed to improve the ecological quality of the peatland habitats that are located outside the construction footprint but within the control of the windfarm developer.

The development has resulted in the loss of peatland habitat, associated with Turbines T3, T6, T7, part of T8, T9 & T10. Therefore, this Peatland Restoration and Management Plan (PRMP) provides for the restoration of forestry land, that has been planted on peatland mosaic habitats, back to this peatland habitat.

The extent of lands subject to peatland restoration are shown in Figure 1.1. This includes areas of forestry felling located around Turbines T1, 3, 5 and 8 as well as an additional area of 1.06 hectares of forestry located to the south of T8. Following the implementation of the measures outlined in this report, to offset the loss of peatland habitat, there will be no net loss of peatland habitats on the site.

The bog restoration programme described in this report will be implemented in accordance with the published guidelines and best practice such as the guidelines arising from the EU–LIFE/Coillte '*Irish Blanket Bog Restoration Project*" (2002-2007)', Scottish Natural Heritage (SNH)'s guidance note Planning for development: *What to consider and include in Habitat Management Plans* (Version 2, January 2014).

2. PEATLAND RESTORATION AND ENHANCEMENT

2.1 Forestry Felling and Peatland Restoration Around Turbines

As shown in Figure 1.1, it is proposed to reinstate areas of coniferous plantation forestry around turbines T1, 3, 5 and 8. These areas have been felled as part of the construction phase of the wind farm, however, some areas will require further maintenance to complete to the required reinstatement to peatland. As shown in Plate 2.3, areas where plantation forestry have been removed, still comprise of peatland vegetation beneath the conifers. In order to facilitate the reestablishment of peatland vegetation within these areas and maintain an effective hydrological regime, the following measures are proposed in these areas:

- Removal of brash from felled areas off-site.
- Drain blocking will be undertaken on a local scale in the immediate surroundings of felled plantation by installing dams at drainage ditches (largely remnant semi-functioning conifer forest drains) to maintain, enhance and restore the favorable baseline hydrological and ecological conditions at each site location. Drains can be dammed using peat dams.
- No additional drainage to be installed in proximity to these habitat areas during the lifetime of the development.
- The use of off road vehicles on the site will be restricted to the existing tracks.
- No application of chemical and organic fertilisers or herbicides and pesticides will be undertaken within the development footprint.
- Self-seeded conifers from adjacent conifer plantation areas will be cleared and removed (by hand or brushcutter) from the newly created peatland reinstatement areas on an ongoing basis during the operational phase.

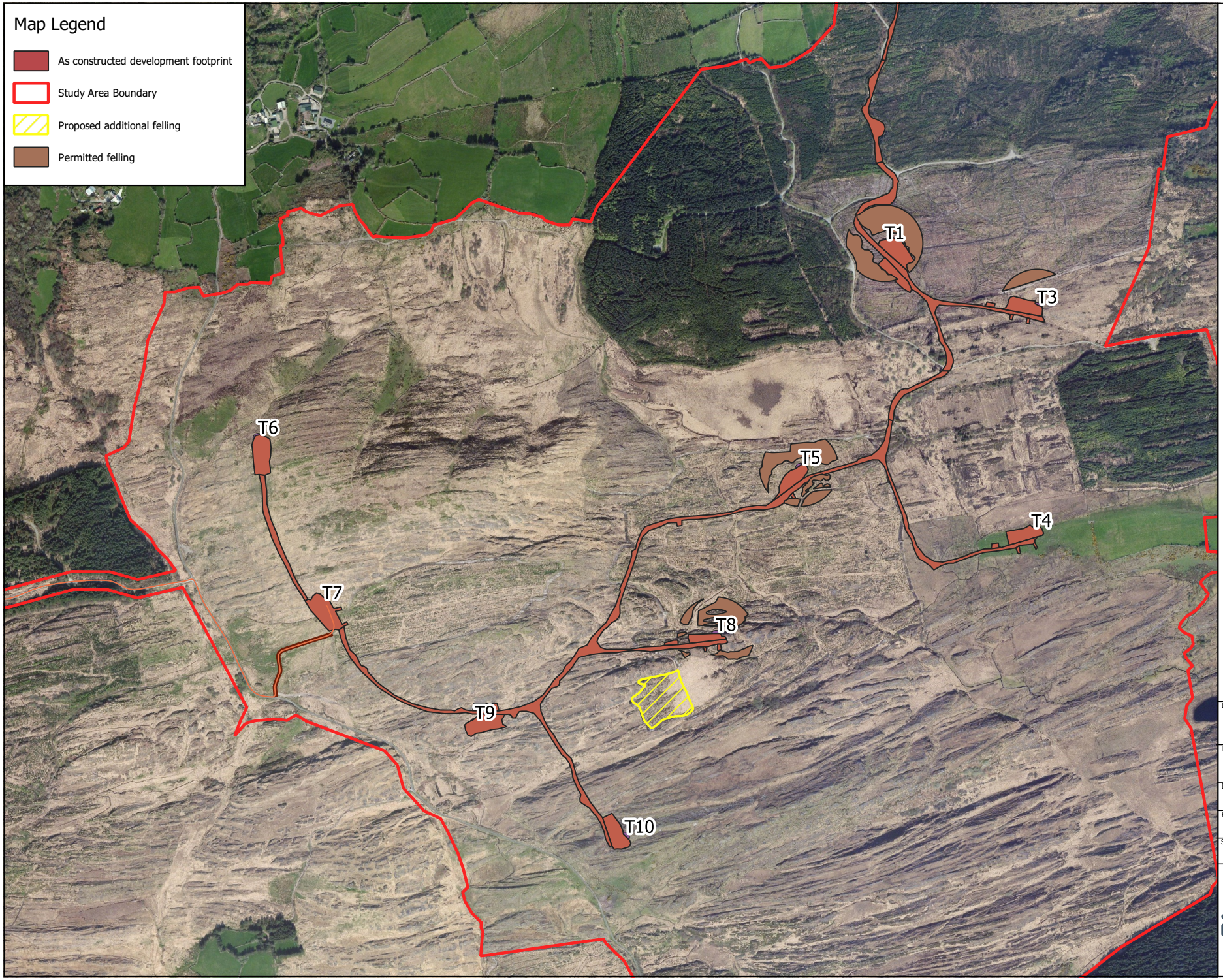
Plate 2.1 Example of forestry felling already undertaken to the north of T8 with typical peatland vegetation remaining beneath the conifers.

2.2 Additional Forestry Felling for Peatland Restoration

In order to achieve the required peatland restoration area, additional lands, comprising of immature forestry, located outside of the immediate development footprint will be acquired and restored to peatland habitat. The area identified as most appropriate for peatland restoration is located to the south of Turbine no. 8, see Figure 1.1. An example of the forestry occurring at this location is provided in Plate 2.2. The lands were chosen as the forestry is immature, the vegetation occurring beneath the conifers comprises of typical peatland species (see Plate 2.3) and could therefore successfully be reinstated to peatland if the conifer crop was sympathetically removed.

Plate 2.2 Location chosen for tree removal and restoration to bog, located to the south of T8.

Plate 2.3 Example of intact peatland vegetation occurring within existing forestry plantation



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N

Drawing Title
Proposed peatland restoration area

Project Title
Cleanrath WindFarm

Drawn By	DMN
DMN	PR
Project No.	Drawing No.
191223a	Figure 1.1
Scale	Date
1:11061	1.07.2020

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Planning and Environmental Consultants
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Ireland, H91 VW84
+353 (0) 91 735611
email:info@mkoireland.ie
Website: ww.mkoireland.ie

The management techniques to be undertaken within the replacement area located south of Turbine no. 8 are as follows:

- All coniferous forestry will be felled.
- Following tree felling operations, brash material will be removed off-site and disposed of appropriately to a suitable location.
- Drains will be blocked, where appropriate, using peat dams or plastic dams, see Plate 2.4 & 2.5.
- No additional drainage to be installed in proximity to this habitat during the lifetime of the subject development.
- The planting of forestry will not be permitted in this area.
- No vehicular access will be permitted to or within the dedicated peatland reinstatement area once all initial works are completed.
- Self-seeded conifers from adjacent conifer plantation areas will be cleared and removed (by hand or brushcutter) from the newly created peatland reinstatement areas on an ongoing basis, following the felling of the existing forestry.
- Peat extraction within the proposed peatland reinstatement area will not be permitted.
- Burning and dumping will not be permitted.
- No application of chemical and organic fertilisers or herbicides and pesticides will be undertaken within the development footprint.

Plate 2.4 Example of peat dams to be used for on-site drain blocking.

Plate 2.5 Example of plastic dams to be used for on-site drain blocking.

2.3 Management of peatlands adjacent to windfarm infrastructure

In addition to the reinstatement measures proposed above, this plan also sets out measures that will enhance the existing peatlands that surround the wind farm development. These are listed below:

- Burning and dumping will not be permitted.
- Application of artificial fertilisers within rehabilitation or enhancement areas will be prohibited.
- The planting of forestry will not be permitted. There is currently forestry activity in the vicinity of the development and conifer seedlings are encroaching on the site on an annual basis during the lifetime of the windfarm development.
- Seedlings of coniferous or other trees or any invasive plants will be removed from this area on an annual basis during the lifetime of the windfarm development.
- Scrub species including Gorse (*Ulex europaeus*) and Bramble (*Rubus fruticosus* agg.) will be removed on an annual basis during the lifetime of the windfarm development.
- No vehicular access will be permitted to or within the dedicated habitat rehabilitation area once all initial works are completed.
- The rehabilitation area will be monitored to assess the success of the rehabilitation plan.
- Where possible, drains will be blocked to restore the natural hydrology of the blanket bog in the area.

2.4 Timing of Works

Replacement works will be conducted in line with the provisions of the Wildlife Acts 1979-2012 as amended.

2.5 Monitoring

To confirm that habitat restoration and enhancement has been successful, all areas of restored vegetation will be monitored post-restoration, monitoring results reported and any criteria failures

identified and corrective actions implemented as part of the Cleanrath Operational Environmental Management Plan (OEMP) for the development.

Visual inspections of restored areas within the application site will be carried out biannually during the first two years after restoration to check for potential soil erosion or movement and degradation of replaced turves. Vegetation monitoring will be carried out in years 1, 3, 5 and 10 after restoration. Monitoring will involve the following:

Surface peat assessment

An assessment of the physical state of the surface peat with regard to:

- Percentage bare peat not covered by vegetation;
- Moisture status (qualitative);
- Intactness (e.g. presence of visible cracking in surface peat; and
- General stability (e.g. presence of peat erosion).

Vegetation sampling

- A number of fixed relevé sites (i.e. permanent quadrats) will be set up in areas where active management is proposed of previously forested areas. Baseline data will be recorded prior to the commencement of habitat management activities set out in this outline plan. The character of each relevé will be recorded (e.g. species proportions present, vegetation structure and height) and photographs will be taken of each relevé from a fixed point. These relevés will then be re-examined during years 1, 3, 5 and 10 following restoration in order to establish the extent of habitat improvement resulting from management practices.

Hydrological monitoring

- Water levels within areas where drains are blocked will be recorded bi-annually for two years. A number of phreatic stand pipes will be installed (prior to restoration) to allow monitoring of water levels within both the restoration and enhancement areas. In this way, any positive impacts on the local hydrology can be verified and quantified.

The efficacy of the habitat rehabilitation and enhancement measures employed will be reviewed in years 1, 3, 5 and 10 following commencement of the plan on the basis of the results of vegetation sampling and water level readings from the managed areas. Analysis of the data collected will be the basis for a review of the measures and techniques employed.

2.5.1 Monitoring of existing reinstated peatlands adjacent to existing infrastructure

Following the completion of the existing development, the roadside verges, berms and banks of hardstand infrastructure were capped with peat material. This material was initially removed during construction and temporarily stored adjacent to the development footprint for final reinstatement. This reinstatement has therefore further minimised the overall peatland loss associated with the development footprint by reinstating areas of temporarily disturbed ground adjacent to the infrastructure, see Plate 2.6. Many of these areas have begun to revegetate naturally, with purple moor-grass (*Molinia caerulea*) becoming established. In addition, some areas within temporarily disturbed ground were also reseeded with an appropriate upland seed mix to facilitate more rapid vegetation establishment.

The post construction monitoring associated with the peatland restoration measures outlined above will also continue to monitor the continued revegetation of these areas of temporally disturbed ground and

where required, additional measures will be implemented to ensure establishment of peatland vegetation and reduce noxious weeds.

Plate 2.6 Example of reinstated site access track verge with stripped peat material showing signs of revegetation with purple moor-grass (Molinia caerulea) and other grass species.

2.6 Reporting

Reports detailing the monitoring works carried out, the results obtained and a review of their success, along with any suggestions for amendments to the plan will be prepared in years 1, 3, 5 and 10 following commencement of the plan's implementation.

3. BIBLIOGRAPHY

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