

16. SCHEDULE OF MITIGATION

16.1 Introduction


All mitigation measures operational and decommissioning phases of the Cleanrath wind farm development are set out in the relevant chapters of the EIAR submitted as part of this substitute consent application. The mitigation implemented during construction has been summarised in the rEIAR which accompanies this application.

It is intended that the Operation and Environmental Management Plan (OEMP) (Appendix 4-3) will be updated where required throughout the operational phase. The Decommissioning Plan (Appendix 4-3) will be updated prior to the commencement of any decommissioning works and would be submitted to the Planning Authority for written approval.

All mitigation measures which will be implemented during the operational and decommissioning phases of the project are outlined in Table 16-1.

The mitigation proposals in the below format provided an easy to audit list that for review during the future phases of the project. The tabular format in which the below information is presented, can be further expanded upon during the course of future project phases to provide a reporting template for site compliance audits.

Table 16-1 All Mitigation Measures for Cleanrath wind farm development

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
<i>Operational Phase</i>				
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: <div>  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. </div>		
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	<p>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:</p> <ul style="list-style-type: none"> ➤ 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	<p>As part of peatland restoration works, the following water protection measures are proposed:</p> <ul style="list-style-type: none"> › 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	<p>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.</p> <p>Post construction monitoring included and will include the following surveys:</p> <ul style="list-style-type: none"> › 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
		<p>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.</p>		
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	<p>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.</p> <p>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).</p>		
MM 14	EIAR Chapter 5, 11 OEMP Section 3	<p>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:</p> <p>No plant used on site will be permitted to cause an on-going public nuisance due to noise.</p>		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
		<ul style="list-style-type: none"> › 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	<p>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:</p> <ul style="list-style-type: none"> › 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
		<p>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.</p> <p>› Training and supervision of operatives in proper techniques to reduce site noise, and self-monitoring of noise levels, if appropriate.</p>		
MM 19	<p>EIAR Chapter 14</p> <p>OEMP Section 3</p>	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	<p>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.</p> <p>The terms of the signed 2RN Protocol Document for the Cleanrath wind farm development will be adhered to throughout operation</p>		

Ref. No.	Reference Location	Mitigation Measure	Audit Result	Action Required
<i>Decommissioning Phase</i>				
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 pearl 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 brush 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	<p>The following mitigation measures are proposed to avoid release of hydrocarbons at the site:</p> <ul style="list-style-type: none"> › 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	<p>A Decommissioning Plan has been prepared (see Appendix 4-4) The following measures are proposed for the decommissioning phase:</p> <ul style="list-style-type: none"> › 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	<p>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.</p> <p>A traffic management plan has been prepared for the removal of cabling from cable duct on the grid connection route</p>		