

17. SCHEDULE OF MITIGATION

17.1 Introduction

All mitigation measures relating to the pre-commencement, construction and operational phases of the Proposed Development are set out in the relevant chapters of the EIAR submitted as part of the planning permission application.

It is intended that the CEMP will be updated where required prior to the commencement of the development, to include all mitigations measures, conditions and or alterations to the EIAR and application documents should they emerge during the course of the planning process and would be submitted to the Planning Authority for written approval.

All mitigation measures which will be implemented during the pre-commencement, construction and operational phases of the project are outlined in Table 17-1. The mitigation measures have been grouped together according to their environmental field/topic and are presented under the following headings:

- > Construction Management
- > Drainage Design and Management
- > Felling
- > Peat, subsoils and bedrock
- > Biodiversity
- > Ornithology
- > Noise
- > Air Quality/Dust
- > Traffic
- > Cultural Heritage

The mitigation proposals in the below format provides an easy to audit list that can be reviewed and reported on during the future phases of the project. The proposal for site inspections and environmental audits are set out in the Construction and Environmental Management Plan (CEMP) which is included as Appendix 4-4 of this EIAR. 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.

17.2

EIAR Mitigation and Monitoring Measures

Table 17-1 Schedule of Mitigation Cahermurphy Two Wind Farm

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
Pre-Commencement Phase					
MM1	Environmental Management	EIAR Chapter 4	The Contractor will be responsible for implementing the mitigation measures specified throughout the EIAR and compiled in the Audit Report which is included in the CEMP. The Contractor will also be responsible for ensuring that all construction staff understand the importance of implementing the mitigation measures. The implementation of the mitigation measures will be overseen by the environmental clerk of works or supervising hydrogeologists, environmental scientists, ecologists or geotechnical engineers, depending on who is best placed to advise on the implementation. The system of auditing referred to above ensures that the mitigation measures are maintained for the duration of the construction phase, and into the operational phase where necessary.		
MM2	Environmental Management	EIAR Chapter 4	The Environmental Clerk of Works will maintain responsibility for monitoring the works and Contractors/Sub-contractors from an environmental perspective. In addition, an Environmental Clerk of Works or Project Ecologist, Project Hydrologist, Project Geotechnical engineer will visit the site regularly and report to the Site Environmental Office.		
MM3	Environmental Management	EIAR Chapter 4	A Site Environmental Clerk of Works will oversee the site works and implementation of the Construction Environmental Management Plan (CEMP), and provide on-site advice on the mitigation measures necessary as necessary to ensure the project proceeds as intended. The level, detail and frequency of reporting expected from the Site Environmental Clerk of Works for the Construction Manager, developer's project manager, and any Authorities or other Agencies, will be agreed by parties where required prior to commencement of construction, and may be further adjusted as required during the course of the project.		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
MM4	Environmental Management- Invasive Species	CEMP Section 3	A baseline invasive species survey will be carried out at the site to identify the presence and location of any invasive species (listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) by a suitably qualified ecologist. If the presence of such species is found at or adjacent to the site, particularly in areas where excavation may be required, an invasive species management plan will be prepared for the site to prevent the introduction or spread of any invasive species within the footprint of the works. An invasive species management plan, if required, will set out best practice control methods.		
MM5	Roads	CEMP Section 2	Prior to commencing road construction movement monitoring posts should be installed in areas where the peat depth is greater than 2m.		
MM6	Drainage	CEMP Section 3	Interceptor drains should be installed upslope of the access road alignment to divert any surface water away from the construction area.		
MM7	Drainage	CEMP Section 3	Prior to commencement of works in sub-catchments across the site, main drain inspections will be completed to ensure ditches and streams are free from debris and blockages that may impede drainage		
MM8	Traffic Management Plan, Delivery Programme, pre-commencement road works	EIAR Chapter 15	<ul style="list-style-type: none"> ➤ A Pre-Construction Condition Survey – Where required by the local authority, a pre-condition survey of roads associated with the proposed development can be carried out immediately prior to construction commencement to record an accurate condition of the road at the time. Where required the timing of these surveys will be agreed with the local authority. ➤ A detailed Traffic Management Plan (TMP), will be provided specifying details relating to traffic management and included in the CEMP prior to the commencement of the construction phase of the proposed development. The TMP will be agreed with the local authority and An Garda Síochána prior to construction works commencing on site. The detailed TMP will include the following: 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<ul style="list-style-type: none"> <li data-bbox="846 359 1585 486">➤ Traffic Management Coordinator – a competent Traffic Management Co-ordinator will be appointed for the duration of the project and this person will be the main point of contact for all matters relating to traffic management. <li data-bbox="846 486 1585 782">➤ Delivery Programme – a programme of deliveries will be submitted to the County Council in advance of deliveries of turbine components to site. Liaison with the relevant local authorities and Transport Infrastructure Ireland (TII) will be carried out where required regarding requirements such as delivery timetabling. The programme will ensure that deliveries are scheduled in order to minimise the demand on the local network and minimise the pressure on the access to the site. <li data-bbox="846 782 1585 1045">➤ Information to locals – Locals in the area will be informed of any upcoming traffic related matters e.g. temporary lane/road closures (where required) or delivery of turbine components at night, via letter drops and posters in public places. Information will include the contact details of the Project Co-ordinator, who will be the main point of contact for all queries from the public or local authority during normal working hours. An "out of hours" emergency number will also be provided. <li data-bbox="846 1045 1585 1348">➤ A Pre and Post Construction Condition Survey – Where required by the local authority, a pre-condition survey of roads associated with the proposed development can be carried out immediately prior to construction commencement to record an accurate condition of the road at the time. A post construction survey will be carried out after works are completed to ensure that any remediation works are carried out to a satisfactory standard. Where required the timing of these surveys will be agreed with the local authority. All road surfaces and 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<p>boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers.</p> <ul style="list-style-type: none"> ➤ Liaison with the relevant local authority - Liaison with the Clare County Council Road Section and An Garda Siochana, will be carried out during the delivery phase of the large turbine vehicles, when an escort for all convoys will be required. Once the surveys have been carried out and “prior to commencement” status of the relevant roads established, (in compliance with the provisions of the CEMP), the Roads section will be informed of the relevant names and contact numbers for the Project Developer/Contractor Site Manager as well as the Site Environmental Manager. ➤ Implementation of temporary alterations to road network at critical junctions – at locations highlighted in section 15.1.8. In addition, in order to minimise the impact on the existing environment during turbine component deliveries the option of blade adaptor trailers can also be used where deemed necessary. Identification of delivery routes – These routes assessed in this EIAR will be agreed and adhered to by all contractors. ➤ Travel plan for construction workers – While the assessment above has assumed the worst case in that construction workers will drive to the site, the construction company will be required to provide a travel plan for construction staff, which will include the identification of routes to / from the site and identification of an area for parking within the construction compound. ➤ Delivery times of large turbine components - The management plan will include the proposal to deliver the large wind turbine 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<p>plant components at night in order to minimise disruption to general traffic during the construction stage.</p> <ul style="list-style-type: none"> ➤ Additional measures - Various additional measures will be put in place in order to minimise the effects of the development traffic on the surrounding road network including site and sweeping / cleaning of local roads as required. ➤ Re-instatement works - All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers. A roads conditions survey (and any other analyses) where requested by the Roads Section of the Council would be undertaken immediately prior to construction commencement of the project to assess the condition of the road network at that time and to agree any required works with the local authority. Where such a survey is requested by Clare County Council it would be repeated immediately after completion of the construction phase of the project in order to ensure that any reinstatement works were carried out to a satisfactory standard as required by the local authority. 		
MM9	Information to Local Residents	EIAR Chapter 15	Locals in the area will be informed of any upcoming traffic related matters e.g. temporary lane/road closures (where required) or delivery of turbine components at night, via letter drops and posters in public places. Information will include the contact details of the Project Co-Ordinator, who will be the main point of contact for all queries from the public or local authority during normal working hours. An "out of hours" emergency number will also be provided.		
Construction Phase					
<i>Construction Management</i>					
MM10	Health and Safety	EIAR Chapter 5	During construction of the Proposed Development, all staff will be made aware of and adhere to:		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<ul style="list-style-type: none"> ➤ Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005); ➤ Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007), as amended; ➤ Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. 291 of 2013), as amended; and ➤ Safety, Health and Welfare at Work (Work at Height) Regulations 2006 (S.I. No. 318 of 2006). <p>This will encompass the use of all necessary Personal Protective Equipment and adherence to the site Health and Safety Plan which will include measures to exclude members of the public from certain areas of the site during construction.</p>		
MM11	Health and Safety	EIAR Chapter 5	<p>The scale and scope of the project requires that a Project Supervisor Design Process (PSDP) and Project Supervisor Construction Stage (PSCS) are required to be appointed in accordance with the provisions of the Health & Safety Authority's 'Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2006'.</p> <p>The PSDP appointed for the construction stage shall be required to perform his/her duties as prescribed in the Safety, Health and Welfare at Work (Construction) Regulations. These duties include (but are not limited to):</p> <ul style="list-style-type: none"> ➤ Identify hazards arising from the design or from the technical, organisational, planning or time related aspects of the project; ➤ Where possible, eliminate the hazards or reduce the risks; ➤ Communicate necessary control measures, design assumptions or remaining risks to the PSCS so they can be dealt with in the Safety and Health Plan; ➤ Ensure that the work of designers is coordinated to ensure safety; 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<ul style="list-style-type: none"> ➤ Organise co-operation between designers; ➤ Prepare a written Safety and Health Plan; ➤ Prepare a safety file for the completed structure and give it to the client; and ➤ Notify the Authority and the client of non-compliance with any written directions issued 		
MM12	Health and Safety	EIAR Chapter 5	<p>The PSCS appointed for the construction stage shall be required to perform his/her duties as prescribed in the Safety, Health and Welfare at Work (Construction) Regulations. These duties include (but are not limited to):</p> <ul style="list-style-type: none"> ➤ Development of the Safety and Health Plan for the construction stage with updating where required as work progresses; ➤ Compile and develop safety file information ➤ Reporting of accidents / incidents; ➤ Weekly site meeting with PSCS; ➤ Coordinate arrangements for checking the implementation of safe working procedures. Ensure that the following are being carried out: ➤ Induction of all site staff including any new staff enlisted for the project from time to time; ➤ Toolbox talks as necessary; ➤ Maintenance of a file which lists personnel on site, their name, nationality, current Safe Pass number, current Construction Skills Certification Scheme (CSCS) card (where relevant) and induction date; ➤ Report on site activities to include but not limited to information on accidents and incidents, disciplinary action taken and PPE compliance; 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<ul style="list-style-type: none"> ➤ Monitor the compliance of contractors and others and take corrective action where necessary; and ➤ Notify the Authority and the client of non-compliance with any written directions issued. 		
MM13	Refuelling,	EIAR Chapter 4, 7, 9, 10 CEMP Section 3	On-site refuelling will be carried out using a mobile double skinned, banded fuel bowser. The fuel bowser, a double-axel custom-built refuelling trailer will be re-filled off site and will be towed around the site by a 4x4 jeep to where machinery is located. It is not practical for all vehicles to travel back to a single refuelling point, given the size of the cranes, excavators, etc. that will be used during the construction of the proposed wind farm development. The 4x4 jeep will also carry fuel absorbent material and pads in the event of any accidental spillages. The fuel bowser will be parked on a level area in the construction when not in use. Refuelling operations will be carried out only by designated trained and competent operatives holding a permit to refuel. Mobile anti-pollution measures such as drip trays and fuel absorbent mats will be used during all refuelling operations.		
MM14	Borrow Pits	EIAR Chapter 4	The borrow pits areas will be permanently secured and a stock-proof fence will be erected around the borrow pit areas to prevent access to these areas. Appropriate health and safety signage will also be erected on this fencing and at locations around the fenced area.		
MM15	Waste Materials	CEMP Section 3	A fully licensed waste contractor will be employed to remove waste from the site and will be required to provide documented records for all waste dispatches leaving the site of the proposed development.		
<i>Drainage Design and Management</i>					
MM16	Earthworks	EIAR Chapter 10	Avoid working during heavy rainfall and for up to 24 hours after heavy events to ensure drainage systems are not overloaded.		
MM17	Excavation Dewatering and	EIAR Chapter 10	<ul style="list-style-type: none"> ➤ If required, pumping of excavation inflows will prevent build-up of groundwater in the excavation; 	➤	➤

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
	Surface Water Quality		<ul style="list-style-type: none"> ➤ The interceptor drainage will be discharged to the existing drainage system or onto the bog surface; ➤ The pumped water volumes will be discharged via volume and sediment attenuation ponds adjacent to excavation areas, or via specialist treatment systems such as a “Siltbuster” unit; ➤ There will be no direct discharge to the existing drainage network and therefore no risk of hydraulic loading or contamination will occur; and, ➤ Daily monitoring of excavations by a suitably qualified person will occur during the construction phase. If high levels of seepage inflow occur, excavation work should immediately be stopped, and a geotechnical assessment undertaken. 		
MM18	Watercourse Buffers	EIAR Chapter 10	During the wind turbine construction phase a self-imposed buffer zone of 50 metres will be maintained for all streams where possible.		
MM19	Near Stream Works	EIAR Chapter 10	<ul style="list-style-type: none"> ➤ During the near stream construction work double row silt fences will be emplaced immediately down-gradient of the construction area for the duration of the construction phase. There will be no batching or storage of cement allowed in the vicinity of the crossing construction areas. ➤ As a further precaution, near stream construction work, will only be carried out during the period permitted by Inland Fisheries Ireland for in-stream works according to the Eastern Regional Fisheries Board (2004) guidance document “Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites”, i.e., May to September inclusive. This time period coincides with the period of lowest expected rainfall, and therefore minimum runoff rates. This will minimise the risk of entrainment of suspended sediment in surface water runoff, and transport via 		

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			this pathway to surface watercourses (any deviation from this will be done in discussion with the IFI)		
MM20	Drainage Swales	EIAR Chapter 10, Appendix 4-5	Swales will be used to intercept and collect run off from construction areas of the site during the construction phase, and channel it to settlement ponds for sediment attenuation as per the drainage design.		
MM21	Interceptor Drains	EIAR Chapter 10, Appendix 4-5	Interceptor drains will be installed up-gradient of any works areas to collect surface flow runoff and prevent it reaching excavations and construction areas of the site. It will then be directed to areas where it can be re-distributed over the ground as sheet flow as per the drainage design.		
MM22	Transverse drains	EIAR Chapter 10, Appendix 4-5	On steep sections of access road transverse drains ('grips') will be constructed where appropriate in the surface layer of the road to divert any runoff off the road into swales/roadside drains;		
MM23	Check dams	EIAR Chapter 10, Appendix 4-5	Check dams will not be used in any natural watercourses, only artificial drainage channels and interceptor drains. Check dams will be used along sections of access road drains to intercept silts at source		
MM24	Level Spreaders	EIAR Chapter 10, Appendix 4-5	Level spreaders will be constructed at the end of interceptor drains to convert concentrated flows in the drain into diffuse sheet flow on areas of vegetated ground.		
MM25	Settlement ponds	EIAR Chapter 10, Appendix 4-5	Settlement ponds, placed either singly or a pair in series, will buffer volumes of run-off discharging from the drainage system during periods of high rainfall, by retaining water until the storm hydrograph has receded, thus reducing the hydraulic loading to water courses as per the drainage design.		
MM26	Siltbuster	EIAR Chapter 10, Appendix 4-5	If the discharge water from construction areas fails to be of a high quality, then a filtration treatment system (such as a 'siltbuster' or similar equivalent treatment train (sequence of water treatment processes)) will be used to filter and treat all		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			surface discharge water collected in the dirty water drainage system. This will apply for all of the construction phase.		
MM27	Silt Fences	EIAR Chapter 10, Appendix 4-5	Silt fences will be emplaced within drains down-gradient of all construction areas. Silt fences are effective at removing heavy settleable solids. This will act to prevent entry to the existing drainage network of sand and gravel-sized sediment, released from excavation of mineral sub-soils of glacial and glacio-fluvial origin and entrained in surface water runoff. Inspection and maintenance of these structures during construction phase is critical to their functioning to stated purpose. They will remain in place throughout the entire construction phase.		
MM28	Silt Bags	EIAR Chapter 10, Appendix 4-5	Silt bags will be used where small to medium volumes of water need to be pumped from excavations (e.g. the proposed underpass locations). As water is pumped through the bag, most of the sediment is retained by the geotextile fabric allowing filtered water to pass through.		
MM29	Potential Release of Hydrocarbons	EIAR Chapter 10 CEMP Section 3	<ul style="list-style-type: none"> ➤ All plant will be inspected and certified to ensure they are leak free and in good working order prior to use on site; ➤ On-site re-fuelling of machinery will be carried out using a mobile double skinned fuel bowser. The fuel bowser, a double-axel custom-built refuelling trailer or truck will be re-filled off site and will be towed/driven around the site to where machinery are located. The 4x4 jeep/fuel truck will also carry fuel absorbent material and pads in the event of any accidental spillages. The fuel bowser will be parked on a level area in the construction compound when not in use and 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; ➤ Fuels stored on site will be minimised. Any storage areas will be bunded appropriately for the fuel storage volume for the time period of the construction; 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<ul style="list-style-type: none"> ➤ The electrical control building will be 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 will be fitted with a storm drainage system and an appropriate oil interceptor; ➤ An emergency plan for the construction phase to deal with accidental spillages will be contained within the Construction Environmental Management Plan. Spill kits will be available to deal with accidental spillages. 		
MM30	Plant and equipment inspections	EIAR Chapter 9	Site plant will be regularly inspected for leaks and fitness for purpose; and, an emergency plan for the construction phase to deal with accidental spillages will be contained within Environmental Management Plan. Spill kits will be available to deal with accidental spillages.		
MM31	Wastewater Disposal	EIAR Chapter 10	It is proposed to manage wastewater from the staff welfare facilities in the control buildings by means of a sealed storage tank, with all wastewater being tankered off site by permitted waste collector to wastewater treatment plants. It is not proposed to treat wastewater on-site.		
MM32	Concrete Deliveries and Management	EIAR Chapter 10, CEMP Section 3	No batching of wet-cement products will occur on site. Ready-mixed supply of wet concrete products will be used and where possible, pre-cast elements for culverts and concrete works will be used.		
MM33	Concrete Deliveries and Management	EIAR Chapter 10, CEMP Section 3	No washing out of any plant used in concrete transport or concreting operations will be allowed on-site.		
MM34	Concrete Deliveries and Management	EIAR Chapter 10, CEMP Section 3	Where concrete is delivered on site, only the chute need be cleaned, using the smallest volume of water possible. No discharge of cement contaminated waters to the construction phase drainage system or directly to any artificial drain or watercourse will be allowed. Chute cleaning water is to be directed into a		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			dedicated lined washout area. This lined area will be removed from site once the construction phase is complete.		
MM35	Concrete Deliveries and Management	EIAR Chapter 10, CEMP Section 3	Weather forecasting will be used to plan dry days for pouring concrete. Ensure pour site is free of standing water and plastic covers will be ready in case of sudden rainfall event		
MM36	Concrete Deliveries and Management	CEMP Section 3	Where possible pre-cast elements for culverts and concrete works will be used		
<i>Felling</i>					
MM37	Felling Licence	EIAR Chapter 4	Felling will be carried out under the terms of a licence application to the Forest Service, as per the Forest Service's policy on granting felling licenses for wind farm developments		
MM38	Clear felling of Coniferous Plantation	EIAR Chapter 4, CEMP Section 3	<ul style="list-style-type: none"> ➤ Works will be overseen by an ECoW. ➤ The extent of all necessary tree felling will be identified and demarcated with markings on the ground in advance of any felling commencing. ➤ All roads and culverts will be inspected prior to any machinery being brought on site to commence the felling operation. No tracking of vehicles through watercourses will occur. Vehicles will only use existing road infrastructure and established watercourse crossings. ➤ Existing drains that drain an area to be felled towards surface watercourses will be blocked, and temporary silt traps (which may include a combination of the drainage components outlined in Section 4.6.3) will be constructed to ensure collection of all silt within felling areas. These temporary silt traps will be cleaned out and backfilled once felling works are complete. This ensures there is no residual collected silt remaining in blocked drains after felling works are completed. 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<p>No direct discharge of such drains to watercourses will occur from within felling areas.</p> <ul style="list-style-type: none"> ➤ New collector drains and sediment traps will be installed during ground preparation to intercept water upgradient of felling areas and divert it away. Collector drains will be excavated at an acute angle to the contour (0.3%-3% gradient), to minimise flow velocities. ➤ All silt traps will be sited outside of buffer zones and have no direct outflow into the aquatic zone. Machine access will be maintained to enable the accumulated sediment to be excavated. Sediment will be carefully disposed of away from all aquatic zones. ➤ All new collector drains will taper out before entering the aquatic buffer zone to ensure the discharging water gently fans out over the buffer zone before entering the aquatic zone. ➤ Machine combinations, such as mechanical harvesters or chainsaw felling, will be chosen which are most suitable for ground conditions at the time of felling, and which will minimise soils disturbance; ➤ Mechanised operations will be suspended during and immediately after heavy rainfall. ➤ Where brash is required to form brash mats, it is to be laid out at harvesting stage to prevent soil disturbance by machine movement. ➤ Brash which has not been pushed into the soil may be moved within the site to facilitate the creation of mats in more demanding locations. ➤ Felling of trees will be pointed directionally away from watercourses. 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<ul style="list-style-type: none"> ➤ Felling will be planned to minimise the number of machine passes in any one area. ➤ Extraction routes, and hence brash mats, will be aligned parallel to the ground contours where possible. ➤ Harvested timber will be stacked in dry areas, and outside any 50-metre watercourse buffer zone. Straw bales and check dams to be emplaced on the down gradient side of timber storage sites. ➤ Branches, logs or debris will not be allowed to build up in aquatic zones. All such material will be removed when harvesting operations have been completed, but removing of natural debris deflectors will be avoided. 		
<i>Peat, Subsoils and Bedrock</i>					
MM39	Topsoil/Peat and Subsoil Excavation	EIAR Chapter 9	<ul style="list-style-type: none"> ➤ The peat and subsoil which will be removed during the construction phase will be localised to the wind farm infrastructure turbine location, substation and temporary compounds and access roads; ➤ The proposed development has been designed to avoid sensitive habitats within the application area; ➤ A minimal volume of peat and subsoil will be removed to allow for infrastructural work to take place in comparison to the total volume present on the site due to optimisation of the layout by mitigation by design. 		
MM40	Peat Instability and Failure	EIAR Chapter 9	<ul style="list-style-type: none"> ➤ Appointment of experienced and competent contractors; ➤ The site should be supervised by experienced and qualified personnel; 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<ul style="list-style-type: none"> ➤ Allocate sufficient time for the project (be aware that decreasing the construction time has the potential to increase the risk of initiating a peat movement); ➤ Prevent undercutting of slopes and unsupported excavations; ➤ Maintain a managed robust drainage system; ➤ Prevent placement of loads/overburden on marginal ground; ➤ Set up, maintain and report findings from monitoring systems; ➤ Ensure construction method statements are followed or where agreed modified/ developed; and, ➤ Revise and amend the Geotechnical Risk Register as construction progresses. 		
MM41	Erosion of Exposed Subsoils and Peat During Tree Felling and Construction works	EIAR Chapter 9 and Appendix 4-2	<ul style="list-style-type: none"> ➤ All excavated material will be completed in accordance with the Peat and Spoil Management Plan. Material will be moved over the least possible distance. ➤ Any excess peat will be moved to peat storage areas or will be temporarily surrounded by earthen berms to prevent erosion. This will prevent erosion of soil. Silt fences will be installed around temporary stockpiles to limit movement of entrained sediment in surface water runoff. The use of earthen berms and silt fencing around earthworks and spoil mounds will prevent egress of water from the works. 		
MM42	Erosion of Exposed Subsoils and Peat During Tree Felling and Construction works	EIAR Chapter 9	Any excess temporary mounded peat in storage for long periods will be surrounded by earthen berms or seeded at the earliest opportunity.		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
MM43	Erosion of Exposed Subsoils and Peat During Tree Felling and Construction works	EIAR Chapter 9	During tree felling brush mats will be used to support vehicles on soft ground, reducing peat and mineral soils erosion and avoiding the formation of rutted areas, in which surface water ponding can occur.		
Biodiversity					
MM44	Rhododendron Management Plant	EIAR Chapter 7 CEMP Section 3	<p>Where works are proposed along the proposed grid connection route which will directly impact on a particular stand of Rhododendron the following methods will be employed:</p> <ul style="list-style-type: none"> ➤ Digging: Where the stand is small enough removal will be carried out manually by hand. Where stands are too large to be completely removed the stand will need to be removed by digging. Removal will take place outside of the optimal seed dispersal period (Feb/March) and flowering season (Spring/Summer). The effectiveness of digging the stumps and root ball out is increased by removing all viable roots. This will be done manually or with an excavator. To avoid regrowth, stumps and root balls will be turned upside down and the soil should be brushed off the roots. ➤ Excavated Plant Material: Soil will be removed from excavated material and the material will be placed inverted on a root barrier membrane within the works area. This will be located >30m from any watercourse. The plant material will be stored here and allowed to completely dry out. Once dry, the rhododendron material shall be mulched on site and composted or burned. 		

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			<ul style="list-style-type: none"> ➤ An Environmental Clerk of Works (ECoW) or suitably qualified Ecologist will be required to monitor rhododendron management works. The ECoW shall confirm that the risk of contamination beyond the already contaminated area is avoided prior to the commencement of any works. Biosecurity measures on the site will stay in place until all works are completed. 		
MM45	Invasive Species	Appendix 7-4	<ul style="list-style-type: none"> ➤ Good construction site hygiene will be employed to prevent the introduction and spread of problematic invasive alien plant species (e.g. Himalayan balsam, Japanese knotweed etc.) by thoroughly washing vehicles prior to leaving the site. ➤ All plant and equipment employed on the construction site (e.g. excavator, footwear, etc.) will be thoroughly cleaned down using a power washer unit prior to arrival on site to prevent the spread of invasive plant species ➤ Wheel washing facilities will be provided at the site entrance. All washing must be undertaken in areas with no potential to result in the spread of invasive species. This process will be detailed in the contractor's method statement. ➤ Any soil, topsoil or stone material required on the site will be sourced from a stock that has been screened for the presence of any invasive species and where it is confirmed that none are present. 		
<i>Ornithology</i>					
MM46	Hen Harrier and Peatland Habitat Enhancement Plan	EIAR Chapter 8 and	Hen Harrier and Peatland Habitat Enhancement Plan will be implemented to enhance potential habitats and minimise potential habitat loss. Management prescriptions to be implemented by the applicant include:		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
		Appendix 8-8	<ul style="list-style-type: none"> ➤ Forestry and brash will be removed on the site and the area will be allowed to revert to open peatland habitat. Pre-mature felling of forestry will be undertaken in accordance with a felling licence, before the first breeding season of the construction phase of the project programme. This would allow time for the clear-felled site to revegetate in advance of the operational phase. ➤ Reinstatement of livestock proof fencing. ➤ Re-vegetation with native vegetation is therefore expected to occur naturally within the enhancement area. ➤ Forestry drainage channels will be blocked, using peat dams or plastic dams, as appropriate. In flat areas drain blocks should be placed every 15m and more frequently when accounting for a slope. ➤ Habitat maintenance of the enhancement area will involve the eradication of self-seeding conifers, and removal off-site. It is envisaged that the enhancement areas will require maintenance twice during the life of the wind farm, once during the construction phase and once after approximately 12 years. ➤ In the event of any invasive species being recorded within the area identified for enhancement measures, an invasive species management plan will be put in place to eradicate any stands of such species. A pre-commencement survey for invasive species to confirm the conditions predicted in this EIAR will be undertaken as part of preparatory work and if recorded an Invasive species management plan shall be prepared. ➤ Enhancement and maintenance works will be undertaken outside of the nesting season as per the Wildlife Act 1976, as amended. 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
MM47	Ornithology	EIAR Chapter 8	<ul style="list-style-type: none"> ➤ Taking a precautionary approach, it is proposed that construction works will commence outside the bird nesting season (1st of March to 31st of August inclusive). ➤ In addition, to avoid impacting breeding hen harrier along the grid connection route no construction works shall be undertaken within a 500m buffer (Forestry Commission Scotland 2006; Ruddock & Whitfield 2007) of the Doo Lough hen harrier territory. See Figure 1-1 in confidential appendix 8.7 for territory location. No works shall be permitted within the buffer between the 1st of March and the 31st of August or until it can be demonstrated that the nest is no longer occupied. ➤ The removal of woody vegetation will be undertaken in full compliance with Section 40 of the Wildlife Act 1976 – 2018. Where sections of woody vegetation are removed for the purposes of the junction and road upgrades, these will be replaced with suitable hedge/tree species which are common in the local context. ➤ During the construction phase, noise limits, noise control measures, hours of operation (i.e. dusk and dawn is high faunal activity time) and selection of plant items will be considered in relation to disturbance of birds. ➤ Plant machinery will be turned off when not in use. ➤ All plant and equipment for use will comply with the Construction Plant and Equipment Permissible Noise Levels Regulations 1996 (SI 359/1996) and other relevant legislation. ➤ An Ecological Clerk of Works (ECoW) will be appointed and will operate for the duration of construction works. Duties will include: 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<ul style="list-style-type: none"> ○ Undertake a pre-construction transect/walkover bird survey to ensure that significant effects on breeding birds will be avoided. ○ Inform and educate on-site personnel of the ornithological and ecological sensitivities within the Proposed Development site. ○ Oversee management of ornithological and ecological issues during the construction period and advise on ornithological issues as they arise. ○ Provide guidance to contractors to ensure legal compliance with respect to protected species onsite. ○ Liaise with officers of consenting authorities and other relevant bodies with regular updates in relation to construction progress. 		
Noise					
MM48	Best Practise Measures BS5528-1	EIAR Chapter 12	<p>Best Practice Mitigation Measures from BS5528-1 standard will be implemented for the duration of the construction phase:</p> <ul style="list-style-type: none"> ➤ Limiting the hours during which site activities likely to create high levels of noise or vibration are permitted; ➤ Establishing channels of communication between the contractor/developer, Local Authority and residents; ➤ Appointing a site representative responsible for matters relating to noise and vibration; ➤ Monitoring typical levels of noise and vibration during critical periods and at sensitive locations; ➤ Keeping site access roads even to mitigate the potential for vibration from lorries. 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<p>A variety of practicable noise control measures will also be employed. These include:</p> <ul style="list-style-type: none"> ➤ Selection of plant with low inherent potential for generation of noise and/ or vibration; ➤ Placing of noisy / vibratory plant as far away from sensitive properties as permitted by site constraints, and; ➤ Regular maintenance and servicing of plant items. 		
MM49	Blasting	EIAR Chapter 12	<p>The methods used to minimise impacts will consist of the following:</p> <ul style="list-style-type: none"> ➤ Restriction of hours within which blasting can be conducted (e.g. 09:00 – 18:00hrs). ➤ Notification to nearby residents before blasting starts (e.g. 24-hour written notification). ➤ The firing of blasts at similar times to reduce the ‘startle’ effect. ➤ On-going circulars informing people of the progress of the works. ➤ The implementation of an onsite documented complaints procedure. ➤ The use of independent monitoring by external bodies for verification of results. ➤ Trial blasts in less sensitive areas to assist in blast designs and identify potential zones of influence. 		
MM50	Rock Breaking	EIAR Chapter 12	<p>Where rock breaking is employed in relation to the proposed borrow pit location, the following are examples of measures that will be employed, where necessary, to mitigate noise emissions from these activities:</p>		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<ul style="list-style-type: none"> ➤ Fit suitably designed muffler or sound reduction equipment to the rock breaking tool to reduce noise without impairing machine efficiency. ➤ Ensure all leaks in air lines are sealed. ➤ Use a dampened bit to eliminate ringing. ➤ Erect acoustic screen between compressor or generator and noise sensitive area. When possible, line of sight between top of machine and reception point needs to be obscured. ➤ Enclose breaker or rock drill in portable or fixed acoustic enclosure with suitable ventilation. 		
<i>Air Quality/Dust</i>					
MM51	Dust Emissions	EIAR Chapter 5,11 CEMP Section 3	<ul style="list-style-type: none"> ➤ In periods of extended dry weather, dust suppression may be necessary along haul roads, site roads, around borrow pit areas and other infrastructure to ensure dust does not cause a nuisance. If necessary, water will be taken from stilling ponds in the site's drainage system and will be pumped into a bowser or water spreader to dampen down haul roads, borrow pit and site compounds to prevent the generation of dust where required. Water bowser movements will be carefully monitored to avoid, insofar as reasonably possible, increased runoff. ➤ All plant and materials vehicles shall be stored in dedicated areas (on site). ➤ Areas of excavation will be kept to a minimum, and stockpiling will be minimised by coordinating excavation, spreading and compaction. ➤ Turbines and construction materials will be transported to the site on specified haul routes only. ➤ The agreed haul route roads adjacent to the site will be regularly inspected for cleanliness and cleaned as necessary. 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<ul style="list-style-type: none"> ➤ The transport of construction materials to the site that have significant potential to cause dust, will be undertaken in tarpaulin or similar covered vehicles where necessary. ➤ The transport of dry peat and spoil, that has the significant potential to generate dust, to the on-site borrow pits will be minimised. If necessary, excavated peat and spoil will be dampened prior to transport to the borrow pits. 		
MM52	Exhaust Emissions	EIAR Chapter 5, Chapter 11	<ul style="list-style-type: none"> ➤ All construction vehicles and plant will be maintained in good operational order while onsite, thereby minimising any emissions that arise. ➤ Turbines and construction materials will be transported to the site on specified routes only unless otherwise agreed with the Planning Authority. ➤ Aggregate materials for the construction of site access tracks and all associated infrastructure will all be locally sourced, where possible, which will further reduce potential emissions. 		
MM53	Greenhouse Gas Emissions	EIAR Chapter 11	<ul style="list-style-type: none"> ➤ All construction vehicles and plant will be maintained in good operational order while onsite, thereby minimising any emissions that arise. ➤ Turbines and construction materials will be transported to the site on specified routes only unless otherwise agreed with the Planning Authority. ➤ The majority of aggregate materials for the construction of the proposed wind farm will be obtained from the three proposed borrow pits on the site of the Proposed Development. This will significantly reduce the number of delivery vehicles accessing the site, thereby reducing the amount of emissions associated with vehicle movements. 		
Traffic					

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
MM54	Traffic Management Co-Ordinator	EIAR Chapter 15	A competent Traffic Management Coordinator will be appointed for the duration of the project and this person will be the main point of contact for all matters relating to traffic management.		
MM55	Liaison with the relevant local authority	EIAR Chapter 15	Liaison with the relevant local authority including the roads section of local authorities that the delivery routes traverse and An Garda Síochána, during the delivery phase.		
MM56	Travel Plans for Construction Workers	EIAR Chapter 15	The construction company will be required to provide a travel plan for construction staff, which will include the identification of a routes to / from the site and identification of an area for parking.		
MM57	Temporary traffic signs	EIAR Chapter 15	Various additional measures will be put in place in order to minimise the effects of the development traffic on the surrounding road network including wheel washing facilities on site and sweeping / cleaning of local roads as required.		
<i>Cultural Heritage</i>					
MM58	Site Infrastructure	EIAR Chapter 14	<ul style="list-style-type: none"> ➤ Care will be taken to minimise damage to the townland boundary wall during the construction phase. ➤ The section of stone wall townland boundary which is to be removed to facilitate the construction of the met mast access road will be recorded by means of photographs and a written description prior to removal. ➤ Groundworks at the three specified townland boundary locations shall be monitored and any sub-surface traces of the townland boundaries shall be recorded by means of photographs, written descriptions and scale drawings if necessary. ➤ Sections of old field walls which are to be removed to facilitate the construction of access roads and other infrastructure will be recorded by means of photographs and written descriptions prior to removal. 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<ul style="list-style-type: none"> ➤ The gate post will be salvaged and reused at an appropriate location. 		
Operational Phase					
Health and Safety					
MM59	Health & Safety	EIAR Chapter 5	<p>Access to the turbines is through a door at the base of the structure, which will be locked at all times outside maintenance visits.</p> <p>Signs will be erected at suitable locations such as, amenity access points and carparks, setting out the conditions of public access under the relevant legislation and providing normal hours (and out of hours) contact details. 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.</p> <p>Signs will also be erected at suitable locations across the site as required for the ease and safety of operation of the wind farm. These signs include:</p> <ul style="list-style-type: none"> ➤ Buried cable route markers at 30m (maximum) intervals and change of cable route direction; ➤ Directions to relevant turbines at junctions; ➤ “No access to Unauthorised Personnel” at appropriate locations; ➤ Speed limits signs at site entrance and junctions; 		

Ref. No.	Reference Heading	Location	Mitigation Measure	Audit Result	Action Required
			<ul style="list-style-type: none"> ➤ “Warning these Premises are alarmed” at appropriate locations; ➤ “Danger HV” at appropriate locations; ➤ “Warning – Keep clear of structures during electrical storms, high winds or ice conditions” at site entrance; ➤ “No unauthorised vehicles beyond this point” at specific site entrances; and <p>Other operational signage required as per site-specific hazards.</p>		
MM60	Decommissioning	CEMP Section 2.5	A decommissioning plan will be agreed with the local authorities three months prior to decommissioning the Proposed Development.		
Traffic Management					
MM61	Roads	EIAR Chapter 15	A Post Construction Condition Survey – Where required by the local authority, a post construction survey will be carried out after works are completed to ensure that any remediation works are carried out to a satisfactory standard. Where required the timing of these surveys will be agreed with the local authority. All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers		
Drainage Management Plan					
MM62	Drainage Inspection	EIAR Chapter 10, CEMP Section 3	➤ Monitoring the effectiveness of drainage measures installed during the construction phase will continue to be monitored into the operational phase. Any excess build-up of silt levels at dams, the settlement pond, or any other drainage features that may decrease the effectiveness of the drainage feature, will be removed.		