16. SCHEDULE OF MITIGATION AND MONITORING PROPOSALS

16.1 Introduction

All mitigation and monitoring measures relating to the pre-commencement, construction, operational and decommissioning phases of the Proposed Development are set out in the relevant chapters of this EIAR.

All mitigation which will be implemented during the various phases of the project are presented in Table 16-1 below. 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
- Noise and Vibration
- Air Quality/Dust
- Cultural Heritage
- Traffic

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.

All monitoring measures which will be implemented during the pre-commencement, construction, operational and decommissioning phases of the project are outlined in Table 16-2. All monitoring measures were set out in the relevant chapters of this EIAR. The monitoring proposals are presented in terms of the monitoring requirement, frequency of monitoring and the mechanism for reporting results where applicable. By presenting the monitoring proposals in the below format, it is intended to provide a monitoring schedule that can be reviewed and tracked during all phases of the project to ensure all the required monitoring is completed as required.

It is intended that the CEMP will be updated where required prior to the commencement of construction to include all mitigations and monitoring 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.

16.2 EIAR Mitigation Measures

Table 16-1 Schedule of Mitigation

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
Pre-Commencement Phase					
MM1	Environmental Management	EIAR Section 4	All proposed site activities will be provided for in a Construction Environmental Management Plan (CEMP), prepared prior to the commencement of any operations onsite. The CEMP will set out all measures necessary to ensure works are carried out in accordance with the mitigation measures set out in the EIAR and will set out the monitoring and inspections procedures and frequencies.		
MM2	Environmental Management	EIAR Section 4	The ECoW will maintain responsibility for monitoring the construction works and audit the implementation of the CEMP.. In addition, a Project Ecologist, Project Hydrologist, Project Archaeologist, Project Geotechnical Engineer will visit the site regularly and report to the ECoW.		
MM3	Environmental Management	CEMP Section 4	A Site ECoW 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 ECoW 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.		
MM4	Surface Water Quality	CEMP Section 4	Baseline water quality field testing and laboratory analysis will be undertaken where required prior to commencement of felling and construction at the site. The		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			baseline monitoring programme will be subject to agreement with Clare County Council. Baseline laboratory analysis of a range of parameters with relevant regulatory limits and EQSs will also be undertaken as per water monitoring programme for the Proposed Development and each primary watercourse along the route.		
MM5	Birds	EIAR Section 7 CEMP Section 5	A Project Ecologist will be appointed. The responsibilities and duties of the Project Ecologist will include the following: › 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 area. › 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.		
MM6	Birds	EIAR Section 7	Pre-commencement bird surveys will be undertaken prior to the initiation of works at the Site. The survey will include a thorough walkover survey to a 500m radius of the development footprint and/or all works areas, where access allows. If winter roost sites or breeding activity of birds of high conservation concern is identified, the roost or nest site will be located, and earmarked for monitoring at the beginning of the first winter season or breeding season (respectively) of the construction phase. If it is found to be active during the construction phase no works shall be undertaken within a 500m buffer in line with best practise. No works shall be permitted within the buffer until it can be demonstrated that the roost or nest is no longer occupied.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM7	Concrete Deliveries	EIAR Section 4	The arrangements for concrete deliveries to the site will be discussed with suppliers before work starts, agreeing routes, prohibiting on-site washout of trucks and discussing emergency procedures.		
MM8	Site Drainage Plan	EIAR Section 4 CEMP Section 4	The Project Hydrologist will prepare detailed drainage design before construction commences.		
MM9	Preparative Site Drainage Management,	EIAR Section 4 CEMP Section 4	The detailed drainage design will specify all materials and equipment necessary to implement the drainage measures effectively, which will be brought on site in advance of any works commencing. An adequate quantity of straw bales, clean stone, terram, stakes, etc. will be kept on site at all times to implement the detailed drainage design measures as necessary. The detailed drainage measures will be installed prior to, or at the same time as the works they are intended to drain.		
MM10	Pre-emptive site drainage management	EIAR Section 9 CEMP Section 4	The works programme for the groundworks part of the construction phase of the project will also take account of weather forecasts and predicted rainfall in particular.		
MM11	Drainage Inspection	CEMP Section 3	Prior to commencement of works in sub-catchments across the site main drain inspections will be competed to ensure ditches and streams are free from debris and blockages that may impede drainage.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM12	Drainage Maintenance	EIAR Section 4 CEMP Section 4	An inspection and maintenance plan for the drainage system on site will be prepared in advance of commencement of any works. Regular inspections of all installed drainage systems will be necessary, especially after heavy rainfall, to check for blockages, and ensure there is no build-up of standing water at parts of the systems where it is not intended. The inspection of the drainage system will be the responsibility of the site ECoW or the Project Hydrologist.		
MM13	Earthworks	CEMP Section 3	Drainage and associated pollution control measures will be implemented onsite before the main construction works commence. Where possible drainage controls will be installed during seasonally dry ground conditions. This will reduce the possibility of impact on surface waters by suspended sediment released during construction and entrained in surface run-off.		
MM14	Earthworks	EIAR Section 9 NIS Section 5	A 50-metre buffer zone will be maintained around hydrological features and 10m to main drains during construction where possible. With the exception of road crossings of streams and associated culvert construction, no development infrastructure, vehicle or plant movement, construction activity or stock-piling of construction materials or construction waste will take place within this zone, and no vegetation will be removed from within this zone.		
MM15	Felling	EIAR Section 4, 7	Construction will not commence during the Breeding Bird season from March to August inclusive. If breeding activity is identified, the nest site will be located, and no works shall be undertaken within a 500m buffer (Forestry Commission Scotland 2006; Ruddock & Whitfield 2007). No works shall be permitted within the buffer until it can be demonstrated that the nest is no longer occupied.		
MM16	Flora & Fauna	EIAR Section 6	Areas of suitable marsh fritillary habitat will be fenced off or clearly marked prior to the commencement of any site works under the guidance and supervision of a suitably qualified Ecological Clerk of Works (ECoW). This is particularly important		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			where the site access track, south of T2, occurs in close proximity to a known colony: › Pre-commencement surveys will be undertaken for marsh fritillary to determine long term trends of the population within the site. › Vegetation structure and suitability will be monitored following the NBDC survey methodology (NBDC, 2020). › Pollinator enhancement measures through habitat creation, as described in the Biodiversity Management Plan. › Habitat condition monitoring will be undertaken during construction and in year 1 post construction to ensure that there are no negative effects on marsh fritillary habitat.		
MM17	Invasive Species Management	EIAR Section 6 CEMP Section 3	A pre-construction invasive species survey will be undertaken a part of the proposed project. This will provide updated data in advance of any construction given the intervention time period between the original survey work and any future grant of permission/ construction. Measures will be in place to prevent the spread of these species during the proposed works. In addition, all necessary precautions will be taken to prevent the introduction of invasive species to the site from elsewhere.		
MM18	Archaeology	EIAR Section 13	The following areas should be subject to pre-construction stage licensed archaeological testing: › Proposed new roads in non-forested areas › Turbine bases and hardstands for T3, T5, T6 and T7 › Proposed Borrow pit south of T5 › Sections of proposed cable route that traverse green field sections › A report on the results of the testing should be undertaken prior to the commencement of development and submitted to the relevant authorities › Archaeological monitoring of ground works during construction. A report on the results of the monitoring shall be compiled and submitted to the relevant authorities on completion of the project.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM19	Archaeology	EIAR Section 13	One monument subject to statutory protection as defined in the Record of Monuments and is located within the EIAR site boundary for the Proposed Development. It consists of a multiple stone circle (CL031-052) located at Curraghodea townland at ITM E512804, N680240. Proposed Mitigation Measure: › A 30m exclusion zone should be established by the contractor under the supervision of the appointed archaeologist prior to construction. The exclusion zone should be marked with permanent fence posts and durable high-visibility fencing with 'Keep Out' signage.		
MM20	Archaeology	EIAR Section 13	The National School (RPS 637) is located within the EIAR study area boundary. Although the structure is located within the EIAR boundary, it is not located within the footprint of any proposed infrastructure. The structure will not be directly impacted by any of the proposed construction works. Proposed Mitigation Measures: › The structure and its location should be highlighted in the CEMP as an environmental constraint so that the area can be avoided during construction works.		
MM21	Archaeology	EIAR Section 13	One structure of local cultural / built heritage merit was noted within the EIAR boundary and consists of a road bridge along the regional road R460 on the Letterkelly - Cloghaun Beg townland boundary. The structure is located 58m to the west of the proposed cable route. Proposed Mitigation Measures: › The structure and its location should be highlighted in the CEMP as an environmental constraint so that the area can be avoided during construction works.		
MM22	Archaeology	EIAR Section 13	A derelict stone house was recorded during the field survey along cable route at ITM E512924, N679668 in the townland of Letterkelly. The structure is located 12m to the east of the proposed cable route. Mitigation measures are required in order to avoid such effects. Proposed Mitigation Measures include:		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			› The structure and its location should be highlighted in the CEMP as an environmental constraint so that the area can be avoided during construction works. › A buffer zone of 10m from the house should be established by the contractor and directed by the appointed archaeologist prior to construction. The buffer zone should be marked with fencing and Keep Out signage.		
MM23	Human Health	EIAR Section 5	Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. Local access to properties will also be maintained throughout any construction works and local residents will also be supplied with the number of the works supervisor in order to ensure that disruption will be kept to a minimum		
Construction Phase					
Construction Management					
MM24	Health and Safety	EIAR Section 5 CEMP Section 4	During construction of the Proposed Development, all staff will be made aware of and adhere to the Health & Safety Authority's *'Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2006'*. This will encompass the use of all necessary Personal Protective Equipment and adherence to the site Health and Safety Plan. Health and safety guidelines for working within and around electrical substations and overhead lines will be adhered to on site.		
MM25	Health and Safety	EIAR Section 4, 5 CEMP Section 2	› Stock-proof fencing will be erected around the borrow pits if deemed necessary to prevent uncontrolled access to these areas. Appropriate health and safety signage will also be erected on this fencing and at locations around the site. › Fencing will be erected in areas of the site where uncontrolled access is not permitted.		
MM26	Health and Safety	EIAR Section 5	Signs will also be erected at suitable locations across the site as required for the ease and safety of operation of the proposed renewable energy development. These signs include:		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			› Buried cable route markers at appropriate 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; › "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 › Other operational signage required as per site-specific hazards.		
MM27	Wastewater Management	EIAR Section 4 ,9 CEMP Section 4	Temporary port-a-loo toilets and toilets located within a staff portacabin will be used during the construction phase. Wastewater from staff toilets will be directed to a sealed storage tank, with all wastewater being tankered off site by permitted waste collector to wastewater treatment plants. There will also be a water supply on site for hygiene purposes. The wastewater will be transported off site by a waste management contractor holding valid waste collection permits under the Waste Management (Collection Permit) Regulations, 2007 (as amended)		
MM28	Wastewater Management	CEMP Section 9	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.		
MM29	Refuelling	EIAR Section 4, 8, 9 NIS Section 5 CEMP Section 3, 5	› On-site refuelling will be carried out using a mobile double skinned, bunded 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 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		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			competent operatives. Mobile anti-pollution measures such as drip trays and fuel absorbent mats will be used during all refuelling operations. › Fuels stored on site will be minimised. Storage areas where required will be bunded appropriately for the fuel storage volume for the time period of the construction and fitted with a storm drainage system and an appropriate oil interceptor; › The plant used during construction will be regularly inspected for leaks and fitness for purpose; › An emergency plan for the construction phase to deal with accidental spillages is contained within section 5 of the CEMP. Spill kits will be available to deal with and accidental spillage in and outside the re-fuelling area.		
MM30	Road Maintenance and resurfacing	EIAR Section 4, 8, 9 NIS Section 5 CEMP Section 3, 5	All waste tar material arising from the chipping and resurfacing of the temporary construction access road will be removed off-site and taken to licenced waste facility		
MM31	Plant and Equipment Inspections	CEMP Section 3	A programme for the regular inspection of plant and equipment for leaks and fitness for purpose will be developed at the outset of the construction phase.		
MM32	Temporary water supply and onsite sanitation	EIAR Section 4 CEMP Section 2	Water supply for the site office and other sanitation will be brought to site and removed after use from the site to be discharged at a suitable off-site treatment location		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM33	Pre-emptive site drainage management	EIAR Section 9 CEMP Section 3	The works programme for the groundworks part of the construction phase of the project will also take account of weather forecasts and predicted rainfall in particular. The following forecasting systems are available and will be used on a daily basis at the site to direct proposed construction activities: › General Forecasts, Meteo Alarm, 3-hour Rainfall Maps, Rainfall Radar Images, Consultancy Service › Works will be suspended if forecasting suggests either of the following is likely to occur: ○ >10 mm/hr (i.e. high intensity local rainfall events); ○ >25 mm in a 24-hour period (heavy frontal rainfall lasting most of the day); or, ○ >half monthly average rainfall in any 7 days. Prior to works being suspended the following control measures should be completed: › Secure all open excavations; › Provide temporary or emergency drainage to prevent back-up of surface runoff; and, › Avoid working during heavy rainfall and for up to 24 hours after heavy events to ensure drainage systems are not overloaded.		
MM34	Protection of Watercourses	EIAR Section 9 CEMP Section 3	Silt traps will be strategically placed down-gradient within forestry drains near streams. The main purpose of the silt traps and drain blocking is to slow water flow, increase residence time, and allow settling of silt in a controlled manner.		
MM35	Protection of Watercourses	EIAR Section 4 & 9	The Inland Fisheries Ireland (2016): Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters will be adopted and Inland Fisheries Ireland stipulated that measures should be in place with regard to protection of watercourses during construction of the Proposed Development, including:		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
		NIS Section 5	❯ There be no drainage or other physical interference with the bed or bank of any watercourse without prior consultation with IFI. ❯ Suspended solids and or hydrocarbon contaminated site run-off waters are controlled adequately so that no pollution of surface waters can occur. More specifically IFI feels the following issues should be addressed ○ Identifying and zoning the project for environmental impact should a peat slip occur ○ Setting out contingency plan should a peat movement occur. ○ Setting out a plan for the control of silt in such a scenario, including measures to be put in place at the initial stages of construction. ❯ In the event of any watercourse crossings being bridged or culverted the following general criteria should apply, ○ The free passage of fish must not be obstructed. ○ The original slope of the riverbed should be maintained with no sudden drops on the downstream side. ○ Bridges are preferable to culverts. ○ In the event of a crossing being in excess of 30cm in width IFI should be consulted prior to works commencing. ○ All instream works should be carried out only in the April-September period.		
MM36	Surface Water Quality	CEMP Section 4	Monthly laboratory analysis of a range of parameters with relevant regulatory limits and EQSs will be undertaken as per water monitoring programme for the Proposed Development and each primary watercourse along the route. This will not be restricted to just these locations around the proposed renewable energy development site with further sampling points added as deemed necessary by the ECoW in consultation with the Project Hydrologist and Site Manager. In-situ field monitoring will be completed on a Monthly basis. In-situ field monitoring will also be completed after major rainfall events, i.e. after events of >25mm rainfall in any 24-hour period. The Project Hydrologist will monitor and advise on the readings collected by in-situ field monitoring.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM37	Concrete Deliveries and Management	EIAR Section 4, 9 NIS Section 5	Only ready-mixed concrete will be used during the construction phase, with all concrete being delivered from local batching plants in sealed concrete delivery trucks.		
MM38	Concrete Deliveries and Management	EIAR Section 4 NIS Section 5	› No washing out of any plant used in concrete transport or concreting operations will be carried out onsite. When concrete is delivered to site, only the chute of the delivery truck will be cleaned, using the smallest volume of water necessary, before leaving the site. › Concrete trucks will be directed back to their batching plant for washout. › Any solid contents that will have been cleaned down from the chute will have solidified and can be broken up and disposed of along with other construction waste.		
MM39	Concrete Deliveries and Management	EIAR Section 4 NIS Section 5	No concrete will be transported around the site in open trailers or dumpers so as to avoid spillage while in transport.		
MM40	Concrete Deliveries and Management	EIAR Section 4	Clearly visible signs in prominent locations will be placed close to concrete pour areas specifically stating washout of concrete lorries is not permitted on the site		
MM41	Concrete Deliveries and Management	EIAR Section 4	Main pours will be planned days or weeks in advance. Large pours will be avoided when prolonged periods of heavy rain are forecast.		
MM42	Concrete Deliveries and Management	EIAR Section 4	Concrete pumps and machine buckets will be restricted from slewing over watercourses while placing concrete.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM43	Concrete Deliveries and Management	EIAR Section 4	Excavations will be sufficiently dewatered before concreting begins. Dewatering will continue while concrete sets.		
MM44	Concrete Deliveries and Management	EIAR Section 4	Covers will be available for freshly placed concrete to avoid the surface washing away in heavy rain.		
MM45	Concrete Deliveries and Management	EIAR Section 4 CEMP Section 3	Surplus concrete after completion of a pour will be returned to the concrete suppliers batching plant for recycling.		
MM46	Road Cleanliness	EIAR Section 4. CEMP Section 3	A road sweeper will be available if any section of the public roads were to be dirtied by trucks associated with the Proposed Development.		
Drainage Design and Maintenance					
MM47	Drainage Planning	EIAR Section 9	Construction of the site drainage system will only be carried out during periods of low rainfall, and therefore minimum runoff rates. This will minimise the risk of entrainment of suspended sediment in surface water runoff, and transport via this pathway to surface watercourses. Construction of the drainage system during this period will also ensure that attenuation features associated with the drainage system will be in place and operational for all subsequent construction works.		
MM48	Watercourse Buffers	EIAR Section 4. CEMP Section 3	All discharges from the proposed works areas will be made over vegetation filters at a minimum of 50m from streams and lakes respectively.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM49	Water Discharge	EIAR Section 4	There will be no direct discharges to any natural watercourses, with all drainage waters being dispersed as overland flows.		
MM50	Wastewater Management	EIAR Section 4. CEMP Section 3	During the construction phase, a self-contained port-a-loo with an integrated waste holding tank will be used on site for toilet facilities. This will be maintained by the service contractor as required and will be removed from the site on completion of the construction phase.		
MM51	Borrow Pit Drainage	EIAR Section 4, 9	During the construction phase of the project, it will be necessary to keep the borrow pit area free of standing water while rock is still being extracted. This will be achieved by using a mobile pump, which will pump water into the same series of drains, settlement ponds with a level spreader, siltbuster or equivalent, which will receive the water from the single outlet		
MM52	Drainage Swales,	EIAR Section 4, 9 CEMP Section 3	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.		
MM53	Interceptor Drains,	EIAR Section 4, 9 CEMP Section 3	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.		
MM54	Check Dams	EIAR Section 4, 9 CEMP Section 3	Check dams will not be used in any natural watercourses, only artificial drainage channels and interceptor drains. The check dams will be installed at regular intervals along interceptor drains to restrict flow velocity, minimise channel erosion and promote sedimentation behind the dam as per the drainage design.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM55	Level Spreaders,	EIAR Section 4. CEMP Section 3	A level spreader will be constructed at the end of each interceptor drain to convert concentrated flows in the drain into diffuse sheet flow on areas of vegetated ground. The levels spreaders will be located downgradient of any proposed works areas in locations where they are not likely to contribute further to water ingress to construction areas of the site.		
MM56	Piped Slope Drains	EIAR Section 4	Piped slope drains will be used to transfer water away from areas where slopes are too steep to use level spreaders and will only remain in place for the duration of the construction phase		
MM57	Vegetation Filters	EIAR Section 4, 9	Vegetation filters, that is areas of existing vegetation, accepting drainage water issuing from level spreaders as sheet flow, will remove any suspended sediment from water channelled via interceptor drains or any remaining sediment in waters channelled via swales and settlement ponds.		
MM58	Settlement Ponds	EIAR Section 4, 9 CEMP Section 3	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.		
MM59	Dewatering Silt Bag	EIAR Section 4, 9 CEMP Section 3	Silt bags will be used where small to medium volumes of water need to be pumped from excavations. As water is pumped through the bag, the majority of the sediment is retained by the geotextile fabric allowing filtered water to pass through. Silt bags will be used with natural vegetation filters or sedimats Sediment entrapment mats, consisting of coir or jute matting, will be placed at the silt bag location to provide further treatment of the water outfall from the silt bag. Sedimats will be secured to the ground surface using stakes/pegs. The sedimat will extend to the full width of the outfall to ensure all water passes through this additional treatment measure.		
MM60	Siltbuster	EIAR Section 4, 9	A “siltbuster” or similar equivalent piece of equipment will be available to filter any water pumped out of excavation areas if necessary, prior to its discharge to stilling ponds or swales.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			Siltbusters are mobile silt traps that can remove fine particles from water using a proven technology and hydraulic design in a rugged unit.		
MM61	Culvert Upgrades	EIAR Section 4, 9	The following mitigation is proposed for completion of wind farm culvert upgrades: › Where possible pre-cast elements for culverts and concrete works will be used; › All new proposed culverts and proposed culvert upgrades will be suitably sized for the expected peak flows in the watercourse; › In all cases, culverts will be oversized to allow mammals to pass through the culvert. › Culverts will be installed with a minimum internal gradient of 1% (1 in 100). Smaller culverts will have a smooth internal surface. Larger culverts may have corrugated surfaces which will trap silt and contribute to the stream ecosystem. Depending on the management of water on the downstream side of the culvert, large stone may be used to interrupt the flow of water. › All culverts will be inspected regularly to ensure they are not blocked by debris, vegetation or any other material that may impede conveyance › All proposed new stream crossings will be bottomless or clear span culverts and the existing banks will remain undisturbed. No in-stream excavation works are proposed and therefore there will be no direct impact on the stream at the proposed crossing location; › Where the proposed underground cabling route follows an existing road or road proposed for upgrade, the cable will pass over or below the culvert within the access road; › All guidance / mitigation measures proposed by the OPW or the Inland Fisheries Ireland is incorporated into the design of the proposed crossings; › 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		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			sediment in surface water runoff, and transport via this pathway to surface watercourses (any deviation from this will be done in discussion with the IFI); › 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; and, › All new river/stream crossings will require a Section 50 application (Arterial Drainage Act, 1945). The river/stream crossings will be designed in accordance with OPW guidelines/requirements on applying for a Section 50 consent.		
MM62	Silt Fences,	EIAR Section 4, 9.	› Silt fences will be emplaced within drains down-gradient of all construction areas. › They will remain in place throughout the entire construction phase. › Silt fences will be installed as single, double or a series of triple silt fences, depending on the space available and the anticipated sediment loading. › The silt fence designs follow the technical guidance document 'Control of Water Pollution from Linear Construction Projects' published by CIRIA (Ciria, No. C648, 1996). Up to three silt fences may be deployed in series. › All silt fencing will be formed using Terrastop Premium or equivalent silt fence product. › Silt fences will be inspected regularly to ensure water is continuing to flow through the fabric, and the fence is not coming under strain from water backing up behind it		
MM63	Sediment disposal	EIAR Section 4	Sediment that is removed from settlement ponds, check dams, silt bags etc. as part of routine maintenance will be carefully disposed of away from all aquatic zones or will be transported off-site for disposal.		
MM64	Excavation seepages and treatment	EIAR Section 4, 9	› Appropriate interceptor drainage, to prevent upslope surface runoff from entering excavations will be put in place; › If required, pumping of excavation inflows will prevent build-up of water in the excavation;		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			› The interceptor drainage will be discharged to the site constructed drainage system or onto natural vegetated surfaces and not directly to surface waters; › The pumped water volumes will be discharged via volume and sediment attenuation ponds adjacent to excavation areas, along with use of more specialist treatment systems such as a Siltbags; › There will be no direct discharge to surface watercourses, and therefore no risk of hydraulic loading or contamination will occur; › Silt traps will be placed in the existing drains upstream of any streams where construction works / tree felling is taking place, and these will be diverted into proposed interceptor drains, or culverted under/across the works area; › Runoff from individual turbine hardstanding areas will be not discharged into the existing drain network but discharged locally at each turbine location through stilling ponds and buffered outfalls onto vegetated surfaces; › Buffered outfalls which will be numerous over the site will promote percolation of drainage waters across vegetation and close to the point at which the additional runoff is generated, rather than direct discharge to the existing drains of the site; and, › Drains running parallel to the existing roads requiring widening will be upgraded, widening will be targeted to the opposite side of the road. Velocity and silt control measures such as check dams, sand bags, oyster bags, straw bales, flow limiters, weirs, baffles, silt fences will be used during the upgrade construction works. Regular buffered outfalls will also be added to these drains to protect downstream surface		
Felling					
MM65	Felling Licence	EIAR Section 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		
MM66	Clear felling of Coniferous Plantation	EIAR Section 9	Mitigation measures which will reduce the risk of entrainment of suspended solids and nutrient release in surface watercourses comprise best practice methods (from the guidance listed above) which are set out as follows:		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			› Machine combinations (i.e. hand-held or mechanical) will be chosen which are most suitable for ground conditions at the time of felling, and which will minimise soils disturbance; › Trees will be cut manually inside the 50m buffer and using machinery to extract whole trees only; › Checking and maintenance of roads and culverts will be on-going through any felling operation. No tracking of vehicle through watercourses will occur, as vehicles will use road infrastructure and existing watercourse crossing points. Where possible, existing drains will not be disturbed during felling works; › Ditches which drain from the proposed area to be felled towards existing surface watercourses will be blocked, and temporary silt traps will be constructed. No direct discharge of such ditches to watercourses will occur. Drains and sediment traps will be installed during ground preparation. Collector drains will be excavated at an acute angle to the contour (~0.3%-3% gradient), to minimise flow velocities. Main drains to take the discharge from collector drains will include water drops and rock armour, as required, where there are steep gradients, and should avoid being placed at right angles to the contour; › Sediment traps will be sited in drains downstream of felling areas. Machine access will be maintained to enable the accumulated sediment to be excavated. Sediment will be carefully disposed of in an area within the borrow pit where all rock has been excavated . Where possible, all new silt traps will be constructed on even ground and not on sloping ground; › In areas particularly sensitive to erosion or where felling inside the 50 metre buffer is required, it will be necessary to install double or triple sediment traps; › Double silt fencing will also be put down slope of felling areas which are located inside the 50 metre buffer zone; › All drainage channels will taper out before entering the aquatic buffer zone. This ensures that discharged water gently fans out over the buffer zone before entering the aquatic zone, with sediment filtered out from the flow by ground		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			vegetation within the zone. On erodible soils, silt traps will be installed at the end of the drainage channels, to the outside of the buffer zone; › Drains and silt traps will be maintained throughout all felling works, ensuring that they are clear of sediment build-up and are not severely eroded. Correct drain alignment, spacing and depth will ensure that erosion and sediment build-up are minimized and controlled; › Brash 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. Brash mat renewal will take place when they become heavily used and worn. Provision will be made for brash mats along all off-road routes, to protect the soil from compaction and rutting. Where there is risk of severe erosion occurring, extraction will be suspended during periods of high rainfall; › Timber will be stacked in dry areas, and outside a local 50 metre watercourse buffer. Straw bales and check dams to be emplaced on the down gradient side of timber storage/processing sites; › Works will be carried out during periods of no, or low rainfall, in order to minimise entrainment of exposed sediment in surface water run-off; › No crossing of streams by machinery will be permitted and only travel perpendicular to and away from stream will be allowed; › Checking and maintenance of roads and culverts will be on-going through the felling operation; › Refuelling or maintenance of machinery will not occur within 100m of a watercourse. Mobile bowser, drip kits, qualified personnel will be used where refuelling is required; › A permit to refuel system will be adopted at the site; and, › 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 care will be taken to avoid removing natural debris deflectors		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM67	Clear Felling of Coniferous Plantation	EIAR Section 9	Silt traps will be strategically placed down-gradient within forestry drains near streams. The main purpose of the silt traps and drain blocking is to slow water flow, increase residence time, and allow settling of silt in a controlled manner. The following items shall be carried out during pre-felling inspections and after: › Communication with tree felling operatives in advance to determine whether any areas have been reported where there is unusual water logging or bogging of machines; › Inspection of all areas reported as having unusual ground conditions; › Inspection of main drainage ditches and outfalls. During pre-felling inspections the main drainage ditches shall be identified. Ideally the pre-felling inspection shall be carried out during rainfall; › Following tree felling all main drains shall be inspected to ensure that they are functioning; › Extraction tracks nears drains need to be broken up and diversion channels created to ensure that water in the tracks spreads out over the adjoining ground; › Culverts on drains exiting the site will be unblocked; and, › All accumulated silt will be removed from drains and culverts, and silt traps, and this removed material will be deposited away from watercourses to ensure that it will not be carried back into the trap or stream during subsequent rainfall		
MM68	Clear Felling of Coniferous Plantation	EIAR Section 9	Sampling will be completed before, during (if the operation is conducted over a protracted time) and after the felling activity. The 'before' sampling should be conducted within 4 weeks of the felling activity commencing, preferably in medium to high water flow conditions. The "during" sampling will be undertaken once a week or after rainfall events. The 'after' sampling will comprise as many samplings as necessary to demonstrate that water quality has returned to pre-activity status (i.e. where an impact has been shown). Criteria for the selection of water sampling points include the following: › Avoid man-made ditches and drains, or watercourses that do not have year round flows, i.e. avoid ephemeral ditches, drains or watercourses;		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			› Select sampling points upstream and downstream of the forestry activities; › It is advantageous if the upstream location is outside/above the forest in order to evaluate the impact of land-uses other than forestry; › Where possible, downstream locations should be selected: one immediately below the forestry activity, the second at exit from the forest, and the third some distance from the second (this allows demonstration of no impact through dilution effect or contamination by other land-uses where impact increases at third downstream location relative to second downstream location); and, › The above sampling strategy will be undertaken for all on-site sub-catchments streams where tree felling is proposed. › Also, daily surface water monitoring forms will also be utilised at every works site near any watercourse. These will be taken daily and kept on site for record and inspection		
Peat, Subsoils and Bedrock					
MM69	Erosion of Exposed Subsoils and Peat	EIAR Section 9	The works programme for the construction stage of the development will also take account of weather forecasts and predicted rainfall in particular. Large excavations and movements of peat/subsoil or peat stripping will be suspended or scaled back if heavy rain is forecast. The extent to which works will be scaled back or suspended will relate directly to the amount of rainfall forecast.		
MM70	Peat Management	EIAR Section 4, 9	Peat removed from turbine locations and access roads will be used for landscaping, side-cast at appropriate locations and placed within the proposed borrow pit. Where possible, the upper vegetative layer will be placed with the vegetation of the sod facing the right way up to encourage growth of plants and vegetation at the surface of the re-instated borrow pits. › During the initial placement of peat and subsoil, silt fences, straw bales and biodegradable matting will be used to control surface water runoff from the reinstatement areas. 'Siltbuster' treatment trains will be employed if previous treatment is not to a high quality. › Drainage from peat reinstatement areas will ultimately be routed to an oversized swale and a number of stilling ponds pond and a 'Siltbuster' with		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			appropriate storage and settlement designed for a 1 in 100 year 6 hour return period before being discharged to the on-site drains. › Peat/subsoil reinstatement areas will be sealed with a digger bucket and vegetated as soon possible to reduce sediment entrainment in runoff. Once re-vegetated and stabilised peat/subsoil reinstatement areas will no longer be a potential source of silt laden runoff.		
MM71	Peat Management	EIAR Section 4	› Prior to commencing the construction of the excavated roads movement monitoring posts will be installed in areas where the peat depth is greater than 2.0m. › Interceptor drains will be installed upslope of the access road alignment to divert any surface water away from the construction area. › Excavation of roads will be in accordance with the design requirements. Excavation will take place to a competent stratum beneath the peat, removing all peat and soft clay present beneath the road footprint. › Once excavated, peat will be temporarily stored in localised areas adjacent to excavations for roads and hardstands before being placed into the permanent peat storage areas within the borrow pits. All temporary storage areas will be upslope of founded roads/hardstands and will be inspected by a suitably qualified person before material is stored in the area. › Road construction will be carried out in sections of approximately 50m lengths i.e. no more than 50m of access road should be excavated without re-placement with stone fill. › Care shall be taken during peat excavation to ensure it is segregated from other soil types, therefore particular care should be taken to review recorded peat depths. › Peat shall be separated and stored by type, namely the acrotelmic and catotelmic layers. › Acrotelm (top about 0.3 to 0.4m of peat) is generally required for landscaping and shall be stripped and temporarily stockpiled for re-use as required. Acrotelm stripping shall be undertaken before the main excavations.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			› Where possible, the acrotelm shall be placed with the vegetation part of the sod facing the right way up to encourage the growth of plants and vegetation. › All catotelm peat (peat below about 0.3 to 0.4m depth) shall be transported immediately on excavation to the designated areas. › Construction sequence planning shall minimise the time that peat is stockpiled before reuse. › Peat stockpiles shall not be allowed to substantially erode or become dry. › Material stockpiles shall be located at least 50m away from watercourses, including site ditches/shucks, to reduce the potential for sediment to be transferred into the wider hydrological system. › Peat shall be stored in areas where the water table is high, or consideration shall be made for keeping the water table high where reasonably practical. › Peat stockpile locations should be selected to limit re-handling as far as reasonably possible. › Excavated peat shall be stored and reused within that immediate area to ensure peat is used to restore peatland habitat. › The Contractor shall consult the Project Ecologist to agree on locations for material stockpiles and consider minimising impacting sensitive ecological receptors. › The Contractor shall consult the site Geotechnical Engineer and review and take into account the Peat Stability Risk Assessment P20-051 by Fehily Timoney (April 2021), to avoid the risk of peat instability in peat excavations, peat stockpiling and all material stockpiling in areas underlain by peat. › Run-off from stockpiles shall be directed through the site drainage system that shall include silt fences, settlement ponds and other drainage measures as appropriate. This shall be detailed in the Contractor's CEMP.		
MM72	Peat instability and failure	EIAR Section 4. CEMP Section 3	The Contractor shall consult the site Geotechnical Engineer and review and take into account the Peat & Spoil Management Plan P20-051 by Fehily Timoney (April 2021) in Appendix 4-2 of the EIAR, to avoid the risk of peat instability in peat excavations, peat stockpiling and all material stockpiling in areas underlain by peat.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM73	Peat Management	EIAR Section 9	› During the initial placement of peat and subsoil, silt fences, straw bales and biodegradable matting will be used to control surface water runoff from the peat reinstatement areas. 'Siltbuster' treatment trains will be employed if previous treatment is not to a high quality. › Drainage from peat reinstatement areas will ultimately be routed to an oversized swale and a number of stilling ponds pond and a 'Siltbuster' with appropriate storage and settlement designed for a 1 in 100 year 6 hour return period before being discharged to the on-site drains. › Peat/subsoil reinstatement areas will be sealed with a digger bucket and vegetated as soon possible to reduce sediment entrainment in runoff. Once re-vegetated and stabilised peat/subsoil reinstatement areas will no longer be a potential source of silt laden runoff.		
Flora and Fauna					
MM74	Bats	EIAR Appendix 6-2	Noise Disturbance During the construction phase, plant machinery will be turned off when not in use and all plant and equipment for use will comply with the Construction Plant and Equipment Permissible Noise Levels Regulations (SI 359/1996). Lighting Disturbance Where lighting is required, directional lighting will be used to prevent overspill on to woodland/forestry edges. This will be achieved using lighting accessories, such as hoods, cowls, louvers and shields, to direct the light to the intended area only.		
MM75	Bats	EIAR Appendix 6-2	Bat Buffers Felling of coniferous plantation will be conducted during the construction phase to facilitate the required bat buffers surrounding turbines located within or at the edge of conifer forestry habitats.		
MM76	Birds	EIAR Section 7	The removal of woody vegetation will be undertaken in full compliance with Section 40 of the Wildlife Act 1976 – 2018. The removal of wetland vegetation and clearance/cutting of hedges and trees will be undertaken outside the breeding season (i.e. outside of the 1st of March and the 31st of August) including along the cable route.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM77	Birds	EIAR Section 7	› The Site is located to the north of the North and West Clare regionally important area for hen harrier. The cable route is however within this hen harrier stronghold. In acknowledgement of the significance of this stronghold for hen harrier it is proposed to undertake all construction works associated with the relevant section of the cable route outside of the breeding season (i.e. outside of the 1st of March and the 31st of August). › 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.		
MM78	Flora and Fauna – Natural Woodland	EIAR Section 6	The Proposed Development has been deliberately designed to minimise loss of Upland blanket bog Where the development footprint does occur on this habitat, the Proposed Development provides for the replacement of peatland habitat through the restoration of forestry (WD4) back to peatland. This is fully described in the site-specific Biodiversity Management Plan (BMP), provided in Appendix 6-4 of the EIAR. › The BMP aims to ensure that there will be no net loss of peatland habitat associated with the Proposed Development. › It is proposed to undertaken enhancement of this area of peatland through the felling of stunted plantation forestry (WD4) and drain blocking within these areas. › It is also proposed to remove encroaching conifers on adjoining peatland (establishing as a result of natural seed dispersal). The location and extent of the habitat replacement and enhancement areas are mapped in the Biodiversity Management Plan, Appendix 6-4 of the EIAR. These are located around Turbines no. 2, 4 and 8.		
MM79	Invasive Species	EIAR Section 6	Measures will be in place to prevent the spread of these species during the proposed works. In addition, all necessary precautions will be taken to prevent the		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
		CEMP Section 3	introduction of invasive species to the site from elsewhere. Best practice measures in relation to invasive species are described below: › All earthworks machinery will be thoroughly pressure-washed prior to arrival on site and prior to their further use elsewhere. › Care will be taken not to disturb or cause the movement of invasive species fragments, either intentionally or accidentally. › Stands of Rhododendron will be clearly demarcated by temporary fencing and tracking within them will be strictly avoided. › Good construction site hygiene will be employed to prevent the spread of these species with vehicles thoroughly cleaned down prior to leaving any site with the potential to have supported invasive species. All plant and equipment employed on the construction site (e.g. excavator, footwear, etc.) will be thoroughly cleaned down on site to prevent the spread of invasive plant. All clean down must be undertaken in areas with no potential to result in the spread of invasive species. › Any material that is imported onto any site will be verified by a suitably qualified ecologist to be free from any invasive species listed on the 'Third Schedule' of Regulations 49 & 50 of Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). This will be carried out by searching for rhizomes and plant material. › The treatment and control of invasive alien species will follow guidelines issued by the National Roads Authority. The Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads (NRA 2010).		
Ornithology					
MM80	Hen Harrier Enhancement Plan	EIAR Chapter 7 and Appendix 7-7	Hen Harrier Enhancement Plan will be implemented to provide biodiversity gains locally with particular reference to hen harrier. Management prescriptions to be implemented by the applicant include: › Establishing linear strips of wildlife cover to increase the availability of foraging habitat for hen harrier locally. This		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			measure will involve the sowing/planting of a wildlife seed crop. Wildlife seed crops will be sown by May 31st each year. The crop will be planted in a 9 metre wide strip along the sheltered side of existing hedges. The crop must be left in situ until March 15th the following year but its location can alternate between years. Crop strip must be a minimum of a 100 metres in length and fenced to prevent livestock grazing. An adaptive management approach will be instituted. A minimum of ten strips will be created. Passerine point counts will be undertaken monthly April to September inclusive in each monitoring year at each of the ten wildlife seed crop strips. The monitoring aims to investigate to what extent seed crops increase the availability of prey species for hen harrier. › Hen harrier shows a strong preference for foraging in dense hedgerows ideally 3 to 4 metres wide. Landowners will restore hedgerows to these conditions. These will be widened by parallel planting of native hedgerow species. Restoring hedgerows will increase the availability of foraging habitat locally and establish connectivity between otherwise discrete land parcels. To ensure biodiversity; restored hedgerows should contain a minimum of two (woody plant) species per 10 metres. Suggested woody plant species could include hawthorn, blackthorn, willow spp., and holly. Existing vegetation will not be cleared to plant the new hedgerow and under no circumstance should herbicides be used. New hedges will be protected from grazing. Habitat management prescriptions for scrub and hedgerows are outlined below: ○ Retain existing areas of scrub and hedgerows; ○ Where there is evidence of scrub or hedgerow removal (since 2016), these habitats will be reinstated as part of individual farm plans ;		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			○ In open areas or where the extend of scrub and hedgerows is limited, create new areas of habitat; ○ In open areas or where the extend of scrub and hedgerows is limited, allow expansion of native hardwood scrub; ○ Trim established areas of gorse or willow scrub as the only means of preventing further encroachment onto grassland or access paths and tracks. Repeat annually if necessary; ○ Prevent any removal, burning or herbicide use on areas of established scrub; ○ If deemed necessary for road safety reasons, cut roadside hedgerows outside of the birds nesting season (March 1st – August 31st); ○ If deemed necessary for the protection of overhead electricity lines, cut hedgerows outside of the birds nesting season (March 1st – August 31st); ○ Hedgerow maintenance is permitted to prevent the hedge from "escaping". In such cases, hedgerow trees should be left uncut, and the remainder of the hedgerow cut into an "A" shape, i.e. wider at the base than at the top; ○ Encroachment of scrub onto grassland can be controlled by cutting on an annual basis if required. Cutting, in this case, should not come closer than 1 metre from the base of the hedge; ○ Herbicides and pesticides will not be used within 5 metres of an existing hedgerow; and ○ Hedge cuttings will be piled into heaps and left to decay naturally.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			› Habitat management prescriptions for heath and bog are outlined below: ○ In general, maintain stocking levels of no greater than 0.15 livestock units (LU) per forage hectare; ○ In the specific case of blanket bog maintain stocking levels of up to 0.10 LU/ha; ○ No new forestry planting on the bog and heath areas within the enhancement area will be permitted; ○ Self-seeded conifers invading open areas of bog and heath will be removed; ○ Heath and bog habitats will be surveyed at least once every two years to ensure that new seedlings are removed; ○ Participating landowners will remove any self-seeding conifers as they appear or as they are noticed; ○ On areas of wet grassland, the application of chemical or organic fertiliser will be avoided; ○ All rhododendron or other invasive species must be removed in Year 1 of the plan. Ongoing control will be required in each subsequent year. Acceptable control methods are cutting/pulling or spot treatment with a suitable herbicide; ○ Consideration will be given to the creation of shallow pools 30- 50 cm deep to provide spawning sites for amphibians; and ○ In cases where the land is wet, limit grazing to the summer months. › Habitat management prescriptions for managing rushes on wet grassland are outlined below:		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			○ In general, rushes should be cut on a 2-year cycle unless there are specific reasons for a longer cycle, e.g. weak rush growth. ○ In most cases, active rush management should commence in year 1 of the plan and should only be delayed until year 2 or 3 where improved grassland is in reversion, where rush growth is very weak or where the rushes were cut or treated with herbicide in the year prior to joining the scheme. ○ On farms with a large area of rushy wet grassland (> 10 hectares), active rush management can be delayed on a portion of the area until Year 2 of the farm plan. The area where active rush management is to be delayed for this reason should not normally exceed 50% of the wet grassland component of the farm. ○ The planned rush management should be reviewed on an annual basis to determine if it is having the desired effect. If it is found during an annual inspection that rush recovery has been stronger or weaker than had been originally anticipated, the farm plan should be changed to adjust the cutting sequence for future years. Grassland Fields >4 hectares in size In grassland fields over 4 hectares in area, the establishment of new hedges and/or exclosures is required. In grassland fields over 4 hectares in size, at least one exclosure or 100 metres of new hedgerow are required for each hectare or part thereof over 4 hectares. For example, in a 6 hectare grassland plot, 2 exclosures or 200 metres of new hedgerows are required. If the plot in question is improved agricultural grassland in reversion, then these requirements are in addition to any additional hedgerow planting required as part of the reversion process.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			Exclosures will be 0.1-0.3 hectares in size. Livestock will be excluded from these exclosures through a permanent fence before the end of Year 1 of the management plan. The fence must be maintained in a stockproof condition. Where possible, exclosures should incorporate any existing patches of scrub. Exclosures are to be planted with native tree/ shrub species at a density of 1,000 plants per hectare (whips 40-80 cm in size are the preferred planting material). Planting must be completed before the end of Year 1 of the plan. The planting density may be reduced if some scrub already exists on the site.		
Noise and Vibration					
MM81	Construction Phase Noise Control,	EIAR Section 11 CEMP Section 3	The below practices be adopted during construction, including: › Managing the hours according to the CEMP 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. Furthermore, a variety of practicable noise control measures will be employed. These include: › 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.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM82	Construction Phase Noise Control,	EIAR Section 11	Operation of plant: all construction operations shall comply with guidelines set out in British Standard documents *'BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise'*.		
MM83	Construction Phase Noise Control,	EIAR Section 5, 11 CEMP Section 3	The following list of measures will be considered, where necessary, to ensure compliance with the relevant construction noise criteria: › No plant used on site will be permitted to cause an on-going public nuisance due to noise. › 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 shall be fitted with suitable silencers. › Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use. › Any plant, such as generators or pumps, which is required to operate before 07:00hrs or after 19:00hrs will be surrounded by an acoustic enclosure or portable screen. › During the course of the construction programme, supervision of the works will include ensuring compliance with the limits detailed in Table 11-18 of the EIAR using methods outlined in British Standard BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise. › The hours of construction activity will be limited to avoid unsociable hours where possible. Construction operations shall generally be restricted to between 7:00hrs and 19:00hrs Monday to Saturday. However, to ensure that optimal use is made of good weather period or at critical periods within the programme it could occasionally be necessary to work out with these hours. It		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			may also be necessary to commence turbine base concrete pours earlier due to time constraints incurred by the concrete curing process. Any such out of hours working would be agreed in advance with the local planning authority. If rock breaking is employed in relation to site activities the following are examples of measures that will be considered as necessary in order to mitigate noise emissions from these activities: › 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 line 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.		
Air Quality/Dust					
MM84	Construction Phase Dust Control	EIAR Section 4, 5 CEMP Section 3	› 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. Silty or oily water will not be used for dust suppression. 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.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			› The agreed haul route roads adjacent to the site will be regularly inspected for cleanliness and cleaned as necessary. › The site access roads will be checked weekly for damage/potholes and repaired as necessary. › 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. › All aggregate material for the construction of roads, cable route and turbine bases will be sourced onsite and will only be outsourced where necessary; therefore, reducing the need to transport this material to the site. › Truck wheels will be washed to remove mud and dirt before leaving the site where they are deemed necessary and will be effective.		
MM85	Construction Phase Air Quality	EIAR Section 10	› 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 Development will be obtained from the two proposed borrow pits on the site. This will significantly reduce the number of delivery vehicles accessing the site, thereby reducing the amount of emissions associated with vehicle movements. › The MRF facility will be local to the Proposed Development site to reduce the amount of emissions associated with vehicle movements. The nearest licensed waste facility to the site is Clean (Ireland) Refuse & Recycling Co. Ltd which is located approximately 15 km to the southwest of the Proposed Development.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
Cultural Heritage					
MM86	Buffer Zones	EIAR Section 13	One monument subject to statutory protection as defined in the Record of Monuments and is located within the EIAR site boundary for the Proposed Development. It consists of a multiple stone circle (CL031-052) located at Curraghodea townland at ITM E512804, N680240. Proposed Mitigation Measures include; › A 30m exclusion zone should be established by the contractor under the supervision of the appointed archaeologist prior to construction. The exclusion zone should be marked with permanent fence posts and durable high-visibility fencing with 'Keep Out' signage.		
Traffic					
MM87	Management of Large Deliveries	EIAR Section 14	A comprehensive set of mitigation measures will be put in place before and during the construction stage of the project in order to minimise the effects of the additional traffic generated by the Proposed Development. For delivery of abnormal sized loads - The following are the main points to note for these deliveries which will take place after peak evening traffic: › The delivery of turbine components is a specialist transport operation with the transportation of components carried out at night when traffic is at its lightest and the impact minimised. › The deliveries will be made in consultation with the relevant Authorities and An Garda Síochána. › It is estimated that 64 abnormal sized loads will be delivered to the site, comprising 22 convoys of 3, undertaken over 22 separate nights. › These nights will be spread out over an approximate period of 11 weeks and will be agreed in advance with the relevant authorities › In order to manage each of the travelling convoys, for each convoy there will be two police escort vehicles that will stop traffic at the front and rear of the convoy of 3 vehicles.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			› There will also be two escort vehicles provided by the haulage company for each convoy.		
MM88	Construction Phase Traffic and Transport	EIAR Section 5, 14	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 relevant Authorities and An Garda Síochána prior to construction works commencing on site. The detailed TMP will include the following: › **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. › **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. › **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. › **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		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			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 boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers. › **Liaison with the relevant local authority** - Liaison with the County Council and An Garda Síochána, 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 ECoW. › **Implementation of temporary alterations to road network at critical junctions** – at locations highlighted in section 14.1.8. In addition, in order to minimise the impact on the existing environment during turbine component deliveries the option of blade adaptor trailers will also be used where deemed practicable. Any alterations required will require prior discussion and agreement with the Municipal District Office. › **Identification of delivery routes** – These routes will be agreed with the County Council and adhered to by all contractors. › **Delivery times of large turbine components** - The management plan will include the option to deliver the large wind turbine plant components at night in order to minimise disruption to general traffic during the construction stage. › **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.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			› **Road Opening Licence** – Roads works associated with the grid connection cabling will be undertaken in line with the requirements of a road opening licence as agreed with Clare County Council. › **Drainage** - The Applicant will engage with the Municipal District Engineers Office and agree any necessary additions or changes to the existing surface drainage infrastructure (temporary or otherwise) prior to the commencement of any construction activities on site. › **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 wheel washing facilities where necessary on 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.		
MM89	Construction Phase Traffic and Transport	EIAR Section 14	Truck wheels washing facilities will be available on site where deemed necessary and will be effective.		
Operational Phase					
MM90	Wastewater Management	EIAR Section 4	The removal and disposal of wastewater from the site will be carried out by a fully permitted waste collector holding valid Waste Collection Permits as issued under the Waste Management (Collection Permit) Regulations, 2007.		
MM91	Electrical Substation	EIAR Section 4, 8, 9 NIS Section 5 CEMP Section 3, 5	The electrical substation 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;		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM92	Human Health	EIAR Section 5	An operational phase Health and Safety Plan will be developed to fully address identified Health and Safety issues associated with the operation of the site and providing for access for emergency services at all times.		
MM93	Site Drainage	EIAR Section 9 NIS Section 5	The operational phase drainage system of the Proposed Development will be maintained into the operational phase as described below and as shown on the Drainage drawings submitted with this planning application: › Interceptor drains will be maintained up-gradient of all proposed infrastructure to collect clean surface runoff, in order to minimise the amount of runoff reaching areas where suspended sediment could become entrained. It will then be directed to areas where it can be re-distributed over the ground by means of a level spreader; › Swales/road side drains will be used to collect runoff from access roads and turbine hardstanding areas of the site, likely to have entrained suspended sediment, and channel it to settlement ponds for sediment settling; › On steep sections of access road transverse drains ('grips') will be constructed in the surface layer of the road to divert any runoff off the road into swales/road side drains; › Check dams will be used along sections of access road drains to intercept silts at source. Check dams will be constructed from a 4/40mm non-friable crushed rock; › Settlement ponds, emplaced downstream of road swale sections and at turbine locations, will buffer volumes of runoff 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 watercourses; and, › Settlement ponds will be designed in consideration of the greenfield runoff rate.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM94	Site Drainage	EIAR Section 4	The drainage system will be monitored in the operational phase until such a time that all areas that have been reinstated become re-vegetated and the natural drainage regime has been restored.		
MM95	Surface Water Quality	CEMP Section 4	Monthly sampling for laboratory analysis for a range of parameters adopted during pre-commencement and construction phases will continue for six months after construction, in particular large excavation and heavy civil works. The Project Hydrologist will monitor and advise on the readings being received from the testing laboratory.		
MM96	Site Drainage	EIAR Section 4	Drainage swales and silting ponds will remain in place to collect runoff from roads and hardstanding areas of the Proposed Development during the operational phase.		
MM97	Fuel Control	EIAR Section 9	Mitigation measures to avoid contamination by accidental fuel leakage and compaction of soil by on-site plant will be implemented as per the construction phase mitigation measures		
MM98	Land on Decommissioning	EIAR Section 9	During decommissioning, it may be possible to reverse or at least reduce some of the potential impacts caused during construction by rehabilitating construction areas such as turbine bases and hard standing areas. This will be done by covering with peatland vegetation/scraw or poorly humified peat to encourage vegetation growth and reduce run-off and sedimentation.		
MM99	Telecoms and other service interference	EIAR Section 14	It is standard practice of 2RN to produce a Protocol Document for wind farm developments, which will be signed by the developer. The Protocol Document ensures that in the event of any interference occurring to television or radio reception due to operation of the wind farm, the required measures, as set out in the document, will be carried out by the developer to rectify this. The Protocol Document ensures that the appropriate mitigation is carried out in the event of unanticipated broadcast interference arising to television or radio reception as a result of the Proposed Development.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			In the event of interference occurring to telecommunications, the Department of the Environment, Heritage and Local Government Wind Farm Planning Guidelines (2006) state that these effects are generally easily dealt with by the use of divertor relay links out of line with the proposed wind turbines.		
MM100	Flora and Fauna	EIAR Section 4, 7	A detailed post-construction Bird Monitoring Programme has been prepared for the operational phase of the Proposed Development, refer to Appendix 7-6 of the EIAR for further details. The programme of works will monitor parameters associated with collision, displacement/barrier effects and habituation during the lifetime of the project. Surveys will be scheduled to coincide with Years 1, 2, 3, 5, 10 & 15 of the life-time of the proposed renewable energy development. Monitoring measures are broadly based on guidelines issued by the Scottish Natural Heritage (SNH, 2009). The following individual components are proposed: › Flight activity surveys: breeding season vantage point surveys › Targeted bird collision surveys (corpse searches) will be undertaken with trained dogs. The surveys will include detection and scavenger trials, to correct for these two biases and ensure the resulting data is robust.		
MM101	Flora and Fauna	EIAR Section 4, 7	Post-construction habitat condition monitoring will be undertaken 1 year post construction to ensure that there are no negative effects on marsh fritillary habitat.		
MM102	Flora and Fauna	EIAR Section 4, 7	Blade Feathering Blade feathering will be implemented as a standard across all proposed turbines when wind speeds are below the cut-in speed of the turbine. Bat Buffers The required bat buffers surrounding turbines located within or at the edge of conifer forestry habitat will remain free from vegetation for the duration of the operational phase of the proposed development. Bat Monitoring Plan		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			Post-construction bat monitoring will be undertaken for at least three years' post construction of the renewable energy development. The monitoring will also include corpse searching in the areas surrounding the turbines to gather data on any actual collisions. The results of post construction monitoring shall be utilised to assess changes in bat activity patterns and to inform the design of any advanced site specified mitigation requirements, including curtailment if deemed necessary following post construction monitoring. <u>Lighting</u> The applicant commits to the use of lights during operation in line with guidance that is provided in the Institute of Lighting Professionals Guidance Note 08/18 Bats and artificial lighting in the UK and Dark Sky Ireland Lighting Recommendations. Exterior lighting will be designed to minimise light spillage by using directional accessories (Stone, 2013).		
MM103	Flora and Fauna	EIAR Section 6	The Proposed Development has the potential to result in enhancement of the surrounding areas through habitat rehabilitation management (as described in the Biodiversity Management Plan) that will be implemented during the construction phase of the Proposed Development and maintained during the operational phase. Details of the management that will be undertaken are provided in the Biodiversity Management Plan in Appendix 6-4 of the EIAR. These include: › Restoring areas of stunted forestry back to peatland, › Drain blocking within degraded peatlands,		
MM104	Noise and Vibration	EIAR Section 11	Commissioning noise surveys will be undertaken to ensure compliance with any noise conditions applied to the development. In the unlikely instance that an exceedance of these noise criteria is identified, the assessment guidance outlined in the IoA GPG and Supplementary Guidance Note 5: Post Completion Measurements (July 2014) should be followed and relevant corrective actions will be taken.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
MM105	Air and Climate	EIAR Section 10	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.		
MM106	Shadow Flicker	EIAR Section 5	Where daily or annual shadow flicker exceedances are experienced at buildings, a site visit will be undertaken firstly to determine the existing screening and window orientation. This will determine if the receptor has an actual line of sight to any turbine. Once this is completed and all of the potential receptors identified, the following measures will be employed, Screening Measures In the event of an occurrence of shadow flicker exceeding guideline threshold values of 30 minutes per day at residential receptor locations, mitigation options will be discussed with the affected homeowner, including: › Installation of appropriate window blinds in the affected rooms of the residence; › Planting of screening vegetation; › Other site-specific measures which might be agreeable to the affected party and may lead to the desired mitigation which includes the option of a . › Shadow flicker control unit which allows a wind farm's turbines to be programmed and controlled using the wind farm's Supervisory Control and Data Acquisition (SCADA) control system to change a particular turbine's operating mode during certain conditions or times, or even turn the turbine off if necessary.		
MM107	Human Health	EIAR Section 5	› Access to the turbines is through a door at the base of the structure, which will be locked at all times outside maintenance visits. › Staff associated with the project will conduct frequent visits, which will include inspections to establish whether any signs have been defaced, removed or are		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			becoming hidden by vegetation or foliage, with prompt action taken as necessary. › Signs will also be erected at suitable locations across the site as required for the ease and safety of operation of the proposed renewable energy development. These signs include: ○ Buried cable route markers at 50m (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; ○ "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 ○ Other operational signage required as per site-specific hazards. › An operational phase Health and Safety Plan will be developed to fully address identified Health and Safety issues associated with the operation of the site and providing for access for emergency services at all times		
Decommissioning Phase					
MM108	Decommissioning	EIAR Chapter 4	Prior to the end of the operational period the Decommissioning Plan (Appendix 4-8 of the EIAR) will be updated in line with decommissioning methodologies that may exist at the time and will agreed with the competent authority at that time.		
MM109	Decommissioning	DP Section 3	Prior to decommissioning, a suitably qualified ecologist will complete an invasive species survey of the material proposed for turbine foundation backfilling. The invasive species survey will also be undertaken along the cable route to identify		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			invasive species at joint bay locations where excavation to expose the cabling for removal will be required.		
MM110	Decommissioning	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		
MM111	Flora and Fauna, Site Rehabilitation	EIAR Section 6	During decommissioning, it may be possible to reverse or at least reduce some of the potential impacts caused during construction by rehabilitating construction areas such as turbine bases and hard standing areas. This will be done by covering with peatland vegetation/scraw or poorly humified peat to encourage vegetation growth and reduce run-off and sedimentation.		
MM112	Decommissioning	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.		

Ref. No.	Reference Heading	Reference Location	Mitigation Measure	Audit Result	Action Required
			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.		
MM113	Decommissioning	EIAR Section 7	A Decommissioning Plan has been prepared (see Appendix 4-8 of the EIAR) 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 EIAR). › 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.		
MM114	Decommissioning	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 EIAR 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 ducts on the proposed underground cabling route.		

16.3 EIAR Monitoring Measures

Table 16-2 Monitoring Schedule

Ref. No.	Reference Heading	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
Pre-Commencement Phase						
MX1	Drainage Maintenance	EIAR Section 4 CEMP Section 4	An inspection and maintenance plan for the drainage system on site will be prepared in advance of commencement of any works. Regular inspections of all installed drainage systems will be necessary, especially after heavy rainfall, to check for blockages, and ensure there is no build-up of standing water at parts of the systems where it is not intended. The inspection of the drainage system will be the responsibility of the site ECoW or the Project Hydrologist.	On going	Monthly	Project Hydrologist
MX2	Clear Felling of Coniferous Plantation	EIAR Section 9	Sampling will be completed before, during (if the operation is conducted over a protracted time) and after the felling activity. The 'before' sampling should be conducted within 4 weeks of the felling activity commencing, preferably in medium to high water flow conditions. The "during" sampling will be undertaken once a week or after rainfall events. The 'after' sampling will comprise as many samplings as necessary to demonstrate that water quality has returned to pre-activity status (i.e. where an impact has been shown). Baseline laboratory analysis of a range of parameters with relevant regulatory limits and EQSs will also be undertaken as per water monitoring programme for the overall Proposed Development and each primary watercourse along the route.	As Required	Monthly	ECoW
MX3	Drainage Inspection	CEMP Section 3	Prior to commencement of works in sub-catchments across the site main drain inspections will be competed to ensure ditches and streams are free from debris and blockages that may impede drainage.	As Required	Monthly	Project Hydrologist

Ref. No.	Reference Heading	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
MX4	Flora & Fauna	EIAR Section 6	Pre-commencement surveys will be undertaken for marsh fritillary to determine long term trends of the population within the site. Vegetation structure and suitability will be monitored following the NBDC survey methodology (NBDC, 2020).	Once	As required	Project Ecologist
MX5	Invasive Species	EIAR Section 6 CEMP Section 3	A pre-commencement invasive species survey shall be completed for the site.	Once	As required	Project Ecologist
MX6	Archaeology	EIAR Section 13	The following areas should be subject to pre-construction stage licensed archaeological testing: › Proposed new roads in non-forested areas › Turbine bases and hardstands for T3, T5, T6 and T7 › Proposed Borrow pit south of T5 › Sections of proposed cable route that traverse green field sections › A report on the results of the testing should be undertaken prior to the commencement of development and submitted to the relevant authorities of Archaeological monitoring of ground works during construction. › A report on the results of the monitoring shall be compiled and submitted to the relevant authorities on completion of the project.	As Required	As Required	Project Archaeologist
MX7	Birds	EIAR Section 7	Pre-commencement bird surveys will be undertaken prior to the initiation of works at the Site. The survey will include a thorough walkover survey to a 500m radius of the development footprint and/or all works areas, where access	Once	As required	Project Ornithologist

Ref. No.	Reference Heading	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
			allows. If winter roost sites or breeding activity of birds of high conservation concern is identified, the roost or nest site will be located, and earmarked for monitoring at the beginning of the first winter season or breeding season (respectively) of the construction phase. If it is found to be active during the construction phase no works shall be undertaken within a 500m buffer in line with best practise. No works shall be permitted within the buffer until it can be demonstrated that the roost or nest is no longer occupied.			
Construction Phase						
MX8	Archaeological Monitoring	EIAR Section 13	Archaeological monitoring of all ground works during construction (in areas of previously undisturbed ground). The National Monuments Service will be informed of such findings to discuss how best to proceed. If archaeological finds, features or deposits are uncovered during archaeological monitoring, the developer will be prepared to provide resources for the resolution of such features whether by preservation by record (excavation) or preservation in situ (avoidance).Once the project is completed, a report on the results of the monitoring will be compiled and submitted to the relevant authorities.	As Required	As Required	Project Archaeologist
MX9	Flora and Fauna	EIAR Section 6	Habitat condition monitoring will be undertaken during construction and in year 1 post construction to ensure that there are no negative effects on marsh fritillary habitat	Once	As required	Project Ecologist
MX10	Water Quality and Monitoring	CEMP Section 3	The effectiveness of drainage measures designed to minimise runoff entering works areas and capture and treat silt-laden water from the works areas, will be monitored continuously by the ECoW on-site. The ECoW or Project Hydrologist will respond to changing weather, ground or drainage conditions on the ground as the project proceeds, to ensure the	Daily	As Necessary	ECoW

Ref. No.	Reference Heading	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
			effectiveness of the drainage design is maintained in so far as is possible.			
MX11	Water Quality and Monitoring	EIAR Section 9	Daily surface water monitoring forms will be utilised at every works site near any watercourse. These will be taken daily and kept on site for record and inspection.	Daily	As Necessary	ECoW
MX12	Surface Water Quality	CEMP Section 4	Baseline laboratory analysis of a range of parameters with relevant regulatory limits and EQSs will be undertaken as per water monitoring programme for the Proposed Development and each primary watercourse along the route. This will not be restricted to just these locations around the proposed renewable energy development site with further sampling points added as deemed necessary by the ECoW in consultation with the Project Hydrologist and Site Manager. In-situ field monitoring will be completed on a Monthly basis. In-situ field monitoring will also be completed after major rainfall events, i.e. after events of >25mm rainfall in any 24-hour period. The Project Hydrologist will monitor and advise on the readings collected by in-situ field monitoring.	As Required	Monthly	ECoW
MX13	Clear felling of Coniferous Plantation	EIAR Section 9	Checking and maintenance of roads and culverts will be on-going through any felling operation. No tracking of vehicle through watercourses will occur, as vehicles will use road infrastructure and existing watercourse crossing points. Where possible, existing drains will not be disturbed during felling works;	As Required	Monthly	ECoW
MX14	Plant and Equipment Inspections	EIAR Section 9 CEMP Section 4	The plant used should be regularly inspected for fuel leaks, unnecessary noise generation and general fitness for purpose.	As Required	Monthly	ECoW

Ref. No.	Reference Heading	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
MX15	Plant and Equipment Inspections	CEMP Section 3	Local areas of the haul route will be condition monitored and maintained, if necessary.	Daily	Monthly	ECoW
MX16	Flora and Fauna	CEMP Section 3	A Project Ecologist will be appointed. The responsibilities and duties of the Project Ecologist will include the following: › 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 area. › 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.	As required	As required	Project Ecologist
MX17	Noise and Vibration	CEMP Section 4	Monitoring typical levels of noise and vibration during critical periods and at sensitive locations will be carried out.	Daily	Monthly	ECoW
Operational Phase						
MX18	Flora and Fauna	EIAR Section 6	Habitat condition monitoring will be undertaken during construction and in year 1 post construction to ensure that there are no negative effects on marsh fritillary habitat	As required	As required	Project Ecologist
MX19	Surface Water Quality	CEMP Section 4	Monthly sampling for laboratory analysis for a range of parameters adopted during pre-commencement and construction phases will continue for six months during the operational phase. The Project Hydrologist will monitor and	Monthly	Monthly	ECoW

Ref. No.	Reference Heading	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
			advise on the readings being received from the testing laboratory.			
MX20	Drainage Inspections	CEMP Section 3	The drainage system will be monitored in the operational phase until such a time that all areas that have been reinstated become re-vegetated and the natural drainage regime has been restored.	Monthly	Monthly	ECoW
MX21	Ornithology	EIAR Section 4, 7	A detailed post-construction Bird Monitoring Programme has been prepared for the operational phase of the Proposed Development, refer to Appendix 7-6 of the EIAR for further details. The programme of works will monitor parameters associated with collision, displacement/barrier effects and habituation during the lifetime of the project. Surveys will be scheduled to coincide with Years 1, 2, 3, 5, 10 & 15 of the life-time of the proposed renewable energy development. Monitoring measures are broadly based on guidelines issued by the Scottish Natural Heritage (SNH, 2009). The following individual components are proposed: › Flight activity surveys: breeding season vantage point surveys › Targeted bird collision surveys (corpse searches) will be undertaken with trained dogs. The surveys will include detection and scavenger trials, to correct for these two biases and ensure the resulting data is robust.	Years 1, 2, 3, 5, 10 & 15	Annually	Project Ornithologist
MX22	Ornithology	Appendix 7-7	The monitoring measures will include: › The area proposed for enhancement will be the subject of ongoing monitoring during the operational phase of the wind farm to ensure it is offering supporting habitat for breeding hen harrier. The ongoing monitoring will take place during the breeding bird season. The monitoring will seek to identify whether optimal hen	1, 2, 3, 5, 10 and 15	As required	Project Ornithologist

Ref. No.	Reference Heading	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
			harrier habitat has been created within areas under active management and will be conducted by way of vantage point surveys. These surveys will be undertaken once a month March to August inclusive. › Passerine point counts will be undertaken monthly from April to September inclusive in each monitoring year at each of the enhancement areas. The location of enhancement areas is provided in Figure 1-1 above. The monitoring aims to investigate to what extent enhancement measures e.g. seed crops, increase the availability of prey species for hen harrier. › Areas of favourable hen harrier foraging habitat (i.e. scrub, blanket bog, wet heath and heather banks) within the enhancement areas should be accurately mapped and should be monitored annually to check that the areas so covered have not altered in size and that the grazing regime that is in place is maintaining the current state of these habitats (i.e. neither poaching nor overgrowth of open areas is occurring). As well as mapping, this monitoring should be recorded by means of fixed point photography.			
MX23	Ornithology	Appendix 7-7	Audits will be required to ensure the effectiveness of the enhancement plan. The audit will assess: › Objectives of the individual farm plan; › Implementation of the plan; and › Adherence to requirements of the farm plan.	Every five years	As required	Project Ornithologist
MX24	Flora and Fauna	EIAR Section 4, 6	<u>Bat Monitoring Plan</u>	Years 1, 2, 3	Annually	Project Ecologist

Ref. No.	Reference Heading	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
			Post-construction bat monitoring will be undertaken for at least three years' post construction of the renewable energy development. The monitoring will also include corpse searching in the areas surrounding the turbines to gather data on any actual collisions. The results of post construction monitoring shall be utilised to assess changes in bat activity patterns and to inform the design of any advanced site specified mitigation requirements, including curtailment if deemed necessary following post construction monitoring.			
MX25	Flora and Fauna	EIAR Section 6	The Proposed Development has the potential to result in enhancement of the surrounding areas through habitat rehabilitation management (as described in the Biodiversity Management Plan) that will be implemented during the construction phase of the Proposed Development and maintained during the operational phase. Details of the management that will be undertaken are provided in the Biodiversity Management Plan in Appendix 6-4 of the EIAR. These include: › Restoring areas of stunted forestry back to peatland, › Drain blocking within degraded peatlands › Surface Peat Assessments › Vegetation Sampling › Hydrological Monitoring	As required	As required	Project Ecologist
Decommissioning Phase						
MX26	Decommissioning	DP Section 3	The Site Manager in consultation with the ECoW will be responsible for employing the services of a suitably qualified	As required	As required	Site Manager

Ref. No.	Reference Heading	Reference Location	Monitoring Measure	Frequency	Reporting Period	Responsibility
			ecologist and any other suitably qualified professionals as required throughout the decommissioning works.			
MX27	Decommissioning	DP Section 3	Prior to decommissioning, a suitably qualified ecologist will complete an invasive species survey of any material proposed for use as part of foundation backfilling. 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.	As required	As required	Project Ecologist