

18.0 SCHEDULE OF MITIGATION MEASURES

18.1 INTRODUCTION

This chapter of the EIAR provides a summary of the findings of this EIAR, based on the design and mitigation measures identified within the technical assessments of this report. The schedule below details the measures upon which the findings of this EIAR have been based and are an integral part of the proposed project.

During the construction, operational and decommissioning phases of the project, all personnel working on the project will be required to be responsible for the environmental control of their own work and to perform their duties in accordance with the requirements and procedures of the CEMP (See Appendix 2-2). All works associated with the construction of the proposed project will be undertaken with due regard to the guidance contained within CIRIA Document C741 'Environmental Good Practice on Site' (CIRIA, 2015).

18.2 SCHEDULE OF MITIGATION MEASURES FROM EIAR

The following table provides a summary of the mitigation measures proposed within this EIAR. In addition, the monitoring proposals have been included.

Table 18.1 Table of Mitigation Measures

Ref No.	Relevant EIAR topic	Location	Mitigation Measure	Monitoring Requirements
Pre-construction Phase				
Description of Proposed Project				
MM1	Environmental Management	EIAR Chapter 2	<p>The CEMP will be updated prior to commencement of development to address the requirements of any relevant planning conditions, including any additional mitigation measures which are conditioned and will be submitted to the planning authority for written approval.</p> <p>The construction contractor will be responsible for implementing the mitigation measures specified in the EIAR and CEMP and for communicating the requirements with all staff on-site. Their implementation of the mitigation measures will be overseen by the supervising Ecological Clerk of Works (ECoW), ecologists, archaeologists and/or geotechnical engineers, as appropriate.</p>	As required through the contractors CEMP
MM2	Environmental Management	EIAR Chapter 2	<p>Excavations associated with pre-construction works, namely topsoil stripping, will be monitored by a suitably qualified archaeologist. In the event that archaeological deposits are discovered, work in the area will cease immediately and the archaeologist will liaise with the National Monuments Service of the DHLGH and the National Museum of Ireland.</p> <p>The National Monuments Act, as amended requires that, in the event of the discovery of archaeological finds or remains that the relevant authorities, the National Monuments Service of the DHLGH and the National Museum of Ireland, should be notified immediately. Allowance will be made for full archaeological excavation, in consultation with the National Monuments Service of the DHLGHG, in the event that archaeological remains are found during the construction phase.</p>	A suitably qualified cultural heritage consultancy/consultant will be appointed to oversee the effective implementation of the archaeological mitigation measures prescribed in this chapter (Chapter 15 (Archaeology & Cultural Heritage) of the EIAR) for the construction phase of the proposed project.
MM3	Health and Safety	EIAR Chapter 2	<p>A Health and Safety Plan covering all aspects of the construction process will address the Health and Safety requirements in detail. This will be prepared prior to the construction stage.</p> <p>A Project Supervisor Design Process (PSDP) and Project Supervisor Construction Stage (PSCS) are required to be appointed in accordance with the provisions of the Safety, Health and Welfare at Work (Construction) Regulations.</p>	As required through the contractors CEMP
MM4	Traffic Management	EIAR Chapter 2	A Traffic Management Plan (TMP) has been prepared for the proposed project. This will be updated ahead of construction to address the requirements of any relevant planning conditions. A confirmatory survey of road condition in advance of any works.	As required through the contractors CEMP
Biodiversity				
MM5	Biodiversity: Otter	NIS	A pre-construction otter survey will be carried out. If any new couching sites or holts are found in the vicinity (150 m) of the proposed works, or any non-breeding holts are found within 20 m of the proposed works, appropriate mitigation measures will be implemented based on Smal (2006).	A pre-construction protected species survey of the infrastructure buffer will be carried out.

Ornithology				
MM6	Ornithology: Breeding Bird Surveys	EIAR Chapter 7	Pre-construction breeding bird surveys will be carried out. These surveys will include Golden Eagle surveys, Merlin surveys and moorland surveys. If nesting Golden Eagle, Merlin, or Golden Plover are found, no construction work within the following specified distances of their nest sites, or centre of territory until the breeding attempt has been completed: i.e., the young have fledged, or the nest has failed. The distances are: 1.5 km for Golden Eagle; 500 m for Merlin; and 500 m for Golden Plover.	These will be carried out in the breeding season preceding the start of construction, and in every subsequent breeding season across the duration of the construction period.
Material Assets				
MM7	Underground Services	EIAR Chapter 11	A confirmatory survey of all existing services will be carried out prior to construction to verify the assumptions in this report and identify the precise locations of any services. The applicant will liaise with the service provider where such services are identified. Digging around existing services, if present, will be carried out by hand to minimise the potential for accidental damage.	As required through the contractors CEMP
Noise and Vibration				
MM8	Noise	EIAR Chapter 12	The Contractor will be obliged to comply with the recommendations of BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Noise .	As required through the contractors CEMP
Traffic and Transportation				
MM9	Pre-Construction Pavement Surveys	EIAR Chapter 16	The client will undertake pre-construction visual pavement surveys on the Haul Roads.	As required through the contractors CEMP
Construction Phase				
Population and Human Health				
MM10	Health and Safety	EIAR Chapter 2 and Chapter 5	<ul style="list-style-type: none"> The proposed Cloghercor Wind Farm will be constructed in accordance with all relevant Health and Safety Legislation. The project will employ all of the latest and relevant guidelines and legislation terms of health and safety both for works within the wind farm site as well as for works outside the main wind farm such as those on the TDR. The required levels of safety (e.g. during road works) will be maintained for all road users as well as pedestrians. The wind farm site itself will not be open to the public until after the construction phase of the project. Appropriate health and safety measures as described in the CEMP will be taken for all works areas during the construction phase in the interest of worker safety also. 	As required through the contractors CEMP

			<ul style="list-style-type: none"> Should any public health advice be in place during the construction phase (such as the recent Covid-19 public restrictions) these will be implemented on site. 	
Biodiversity				
MM11	Ecological Clerk of Works (ECoW)	EIAR Chapter 6	A suitably qualified ECoW will be appointed by the contractor for the duration of the construction period.	As required through the contractors CEMP
MM12	Invasive Species Management	EIAR Chapter 6	Implementation of the Invasive Species Management Plan (Appendix 6-6) and development of an appropriate Invasive Species Risk Assessment Method Statement by the contractor prior to commencement of any works.	Ongoing monitoring in line with the Invasive Species Risk Assessment Method Statement
MM13	Bats	EIAR Chapter 6	<ul style="list-style-type: none"> To reduce the collision risk to bat populations, buffer zones will be established around each turbine within which all trees and other tall woody vegetation will be cleared. As a result these buffer zones will be maintained as bog / heath type vegetation dominated by low-growing dwarf shrubs and grasses (Buffer Zones are outlined in Chapter 6 of the EIAR). The Bat Report specifies 100 m buffer for T19 due to high risk to Leisler's Bat. For all turbines a zone of 74 - 100m around each proposed turbine (from tip of blade) will be cleared of tall vegetation (shrubs, trees, scrub etc). The initial clearance work in each buffer zone will be completed at least six months prior to the installation of the turbines. If any of the deciduous trees identified as Potential Bat Roosts adjacent to the stone ruins are proposed to be felled, a Phase 2 survey will be carried out. This will involve a daytime inspection of trees coupled with dusk/dawn surveys, where appropriate. A bat box scheme will be implemented to mitigate any felling of Potential Bat Roost trees. This scheme will be implemented in a deciduous or mixed woodland at least 1 km from the proposed project area. One bat box will be provided per Potential Bat Roost tree felled. The bat boxes will be erected by a bat specialist a minimum of six months prior to tree felling. 	If more than three years pass between the pre-construction surveys and the construction of the wind turbines, it may be necessary to repeat the pre-construction surveys (EUROBATS, 2014). Full details of the Bat Monitoring Programme are included in Appendix 6-4 of the EIAR.
MM14	Biodiversity Management Plan	EIAR Chapter 6	<p>A Biodiversity Management Plan will be implemented, and will include measures such as below during construction:</p> <ul style="list-style-type: none"> A 30 m wide buffer zone will be established around the Lough Aneane More lake. Areas of lowland blanket bog and dystrophic lake habitat (three to the south of T15, and a fourth to the south of T7) will be designated as biodiversity areas. The old forestry drains in the lowland blanket bog habitat near T7 will be filled in. These areas will be maintained as open lowland blanket bog habitat. They 	As required through the contractors CEMP

			<p>will be monitored, and any regenerating conifer, or invading Rhododendron will be removed.</p> <ul style="list-style-type: none"> • A corridor of open grassland / heath occurs along the forest road in the northern section of the wind farm site. This corridor will be managed to maintain and enhance the wet heath, lowland blanket bog and wet grassland habitats. • Monitoring will be carried out and the management regime will be adapted as required, based on the monitoring results. • Non-intervention buffer zones and uninterrupted setback zones will be created along streams and around lakes. • Drainage and cultivation operations associated with reforestation will be planned and implemented to minimise flow rates after rainfall. Standards set out in Section 3.7.1 of the Environmental Requirements for Afforestation and in the Forestry Standards Manual will apply. • General biodiversity management / enhancement measures will be implemented throughout the wind farm site where feasible and appropriate to promote plant diversity and provide floral resources for pollinators, including measures recommended by the All-Ireland Pollinator Plan's guidance of Pollinator-friendly Management of Wind Farms (NBDC, 2021). 	
Ornithology				
MM15	Breeding Bird Surveys	EIAR Chapter 7	Construction breeding bird surveys will be carried out. These will be carried out in line with the criteria outlined for pre-construction breeding bird surveys.	As required through the contractors CEMP
MM16	Golden Eagle Habitat Management Plan	EIAR Chapter 7 / NIS	A Golden Eagle Habitat Management Plan will be implemented to mitigate for the potential displacement impacts to Golden Eagles.	As required through the contractors CEMP
MM17	Tree-felling / Scrub Clearance	EIAR Chapter 7	Where possible, tree-felling and scrub clearance will not be carried out during the bird breeding season (1 st March - 31 st of August).	As required through the contractors CEMP
Land, Soils and Geology				
Construction Phase				
MM18	Permits / Licences	EIAR Chapter 8	<p>It will be a requirement that all permits, and licences are obtained from the regulatory authorities as required by environmental law or regulation and will discharge the relevant conditions of the planning permission to commence site works, or as otherwise appropriate in advance of specific site activities.</p> <p>Replacement replanting of forestry in Ireland is subject to licence in compliance with the Forestry Act 2014 as amended. The consent for such replanting is covered by statutory instrument S.I. No. 191/2017 Forestry Regulations 2017. As it is proposed to</p>	As required through the relevant Permits and licences

			fell between 69.7ha and 90.9ha of coniferous forestry for the proposed project, replant lands of the same area are required. The replacement replanting of forestry can occur anywhere in the State subject to licence.	
Hydrology and Hydrogeology				
MM19	Surface Water Drainage	EIAR Chapter 2	The surface water drainage system will require regular inspection during construction works and during operations to ensure that it is working optimally.	<p>Regular visual inspections of all watercourses (flow conditions, discolouration, collection of debris, fish in distress or floating), presented in a monthly report on water quality, is advised by an independent, suitably qualified Ecological Clerk of Works (ECoW) with particular emphasis placed on:</p> <ul style="list-style-type: none"> • Streams downstream of site activities; • At times when heavy traffic is frequenting the site; • During and after periods of heavy or prolonged rainfall and during winter months; • During fish migration and spawning periods; and <p>Stream crossings to ensure that the existing mitigation measures are effective in preventing any sediment reaching streams.</p>
MM20	Pollution Prevention	EIAR Chapter 9	Best practice construction methods will be implemented in order to prevent water (surface water and groundwater) pollution.	
MM21	Environmental Management	EIAR Chapter 9	<p>All personnel working on the project will be responsible for the environmental control of their work and will perform their duties in accordance with the requirements and procedures of the CEMP.</p> <p>All works associated with the construction of the wind farm will be undertaken in accordance with the guidance contained within CIRIA Document C741 'Environmental Good Practice on Site' (CIRIA, 2015).</p>	
MM22	Erosion / Sediment Control	EIAR Chapter 9	<ul style="list-style-type: none"> • To maximise the erosion and sediment control benefits of natural vegetation soil cover, stripping of soil is to be kept to a minimum and confined to construction areas only. Where practical, construction works will be staged to minimise the extent and duration of disturbance, e.g., plan for progressive site clearance, only disturbing areas when they are scheduled for current construction work. 	
MM23	Groundwater	EIAR Chapter 9	<ul style="list-style-type: none"> • Any groundwater encountered will be managed and treated in accordance with CIRIA C750, 'Groundwater control: design and practice' (CIRIA, 2016). • Groundwater from the borrow pits will be treated in the settlement lagoons. • Subject to landowner permission, selected private water supply wells at representative locations closest to turbine and borrow pit locations around the site will be monitored for water level and quality pre-construction and during the construction phase. • To minimise any effect on the underlying subsurface strata from material spillages, all oils and solvents used during construction will be stored within specially constructed dedicated bunded areas. 	
MM24	Surface Water Management	EIAR Chapter 9	<ul style="list-style-type: none"> • The implementation of the Surface Water Management Plan will be overseen by a suitably qualified ecologist/engineer and will be regularly audited throughout the construction phase. • The assigned ecologist/engineer will be required to stop works on site if he/she is of the opinion that a mitigation measure or corrective action is not being appropriately or effectively implemented. 	
MM25	Forestry felling	EIAR Chapter 9	<ul style="list-style-type: none"> • Felling will be undertaken of a 20 m corridor along the access roads, and a 74-100m buffer around the turbines based on ecological considerations. 	

			<ul style="list-style-type: none"> • An additional 5 hectares of felling is proposed around the lake as part of a biodiversity management plan. • A 30 m wide buffer zone will be established around the lake. This buffer will be created by felling the existing areas of conifer plantation within the buffer zone, and by blocking drains to raise the water table. • The Felling and Reforestation Standards (2019) describe the universal standards that will apply to all felling (thinning, clearfelling) and reforestation projects on site undertaken under a felling licence issued by the Department of Agriculture, Food & the Marine. • Buffer zone guidelines for planting and felling activities are provided by the Forestry Service in the Forestry and Water Quality Guidelines (2000) and will apply to construction activities. • Construction activities will be curtailed within buffer zones. Buffer zone widths vary from 10m to 25m, depending on slope and soil erosion classification. • All works within 50 m of waterbodies kept to minimum, with all significant infrastructure (turbine foundations, borrow pits and substation) at a minimum 50 m set-back. The construction works will involve some works within 50m of streams (such as site access tracks). However, no instream works are proposed, and a suite of measures are in place to avoid any adverse effects on streams. Clear span bridges will be utilised for stream crossings. Trees will be cut manually inside the 50m buffer. During the near stream construction work, silt traps and a double row silt fences will be placed immediately down-gradient of the construction area for the duration of the construction phase. • All associated tree felling will be undertaken using good working practices as outlined by the Forest Service in their Forestry Harvesting and Environment Guidelines (2000) and the Forestry and Water Quality Guidelines (2000). The latter guidelines deal with sensitive areas, erosion, buffer zone guidelines for aquatic zones, ground preparation and drainage, chemicals, fuel and machine oils. Brash mats will also be used to support harvesting and forwarding machinery. The brash mats reduce erosion of the surface and will be renewed as they become used and worn over time. • As part of felling works, temporary water crossings include forest drains, roadside drains, relevant streams and aquatic watercourses. Measures should be adhered to as per the 2019 Standards for Felling and Reforestation. 	
MM26	Sediment Traps	EIAR Chapter 9	Sediment traps are to be constructed and maintained in line with the requirements of the Forestry Schemes Manual (2011), the Forest Road Manual and Forest Drainage Engineering – A Design Manual.	Inspections of silt control measures are critical after prolonged or intense rainfall while maintenance will ensure maximum effectiveness of the proposed measures. A programme of inspection and

				<p>maintenance will be designed, and dedicated construction personnel assigned to manage this programme. A checklist of the inspection and maintenance control measures will be developed, and records kept.</p>
MM27	Forest Drains	EIAR Chapter 9	<p>Crossing of drains during felling and extraction and restrict machine activity to brashed extraction racks and forwarding routes will be minimised.</p> <p>Where a drain crossing is needed, based on the size of the forest drain one of the following methods will be selected that prevents the breakdown and erosion of drain sides:</p> <ul style="list-style-type: none"> • For larger drains, deploy a heavy-duty plastic culvert lengthways into the channel and cover with brush material. The culvert must be of a diameter approximating the depth of the drain, to avoid any unnecessary undulation along the extraction route; • Where required, a solution for smaller drains is to temporarily lay log sections lengthways into the channel and overlay with brush. Again, select logs that approximate the depth of the channel to be crossed. 	<p>Inspections of silt control measures are critical after prolonged or intense rainfall while maintenance will ensure maximum effectiveness of the proposed measures. A programme of inspection and maintenance will be designed, and dedicated construction personnel assigned to manage this programme. A checklist of the inspection and maintenance control measures will be developed, and records kept.</p>
MM28	Aquatic Zones & Larger Relevant Streams	EIAR Chapter 9	<ul style="list-style-type: none"> • Minimise the crossing of aquatic zones and larger relevant streams during felling and extraction by choosing alternative routes which avoid the streams/aquatic zones where possible; • Direct crossing over the stream bed is not permitted. If you must cross an aquatic zone or larger relevant stream install a temporary crossing point. When installing and removing the temporary crossing, ensure that no work is carried out within the aquatic zone, and that the stream bed and bankside remain undisturbed; • Avoid crossing points in hollows where surface water gravitates towards, or in areas of the site more prone to sediment release, as indicated by terrain classification; • Ensure the feature is crossed at a right angle to the flow of water; • Where needed, any necessary crossing shall be via an appropriate structure that spans proud of the flow of water and prevents the breakdown and erosion of the banks; • Typical solutions include the laying down of a bridge comprising logs overlaid with geotextile and brush to intercept soil falling off wheels; • Alternatively, utilise prefabricated concrete drop-in bridging. 	<p>It is recommended that local surface water features in the immediate vicinity of the site boundary are monitored pre-construction and during construction to take account of any variations in the quality of the local surface water and groundwater environment as a result of activities related to the proposed project.</p>

MM29	Concrete Management	EIAR Chapter 2 and Chapter 9	<ul style="list-style-type: none"> • 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; • After concrete is poured at a construction site, the chutes of ready mixed concrete trucks must be washed out to remove the remaining concrete before it hardens. • Only the chute of the delivery truck will be cleaned, concrete trucks will be washed out fully at the batching plant / appropriate facility offsite where facilities are already in place. • The small volume of water generated from concrete chute washout will be directed to and collected and retained (all concrete washout water and solids) in leak proof containers or impermeable lined wash out pits / containment areas, so that the wash material does not reach the soil surface and then migrate to surface waters or into the ground water. • The collected concrete washout water and solids will be emptied on a regular basis. These residual liquids and solids will be disposed of off-site at an appropriate waste facility. Washout will be undertaken at the construction compounds. • Main concrete pours will be planned weeks in advance and refined in the days leading up to the pour. • Disposing of surplus concrete after completion of a pour will be off-site at the concrete production facility. 	All works will be monitored by a suitably qualified and experienced engineer.
MM30	Fuels & Chemicals (inc. refuelling)	EIAR Chapter 2 and Chapter 9	<ul style="list-style-type: none"> • Fuels and chemicals will be stored within bunded areas as appropriate to guard against potential accidental spills or leakages. The bund area will have a volume of at least 110 % of the volume of such materials stored. • Any easily manoeuvrable road-going vehicles will be refuelled off-site. • For certain vehicles which are less mobile, refuelling may need to occur elsewhere on site. This will be carried out using a double skinned bunded mobile tank which can be moved around the site and bunded bowser, towed behind a jeep (or similar) and stored in the construction compound when not in use. • Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in a designated area of the site, away from surface water gullies or drains. • All on-site refuelling will be carried out by trained competent personnel. Only designated trained and competent operatives will be authorised to refuel plant on site. • No refuelling will take place within 50 m of any stream. 	As required through the contractors CEMP

			<ul style="list-style-type: none"> • A spill kit will be stored with the bowser and the person operating the bowser will be trained in their use. When not in use this will be stored in the designated area of the construction compounds; • Spill kits and hydrocarbon absorbent packs will be stored in this area and operators will be fully trained in the use of this equipment. • Mobile measures such as drip trays and fuel absorbent mats kept with all plant and bowzers and will be used at all times during all refuelling. • A spill kit will be stored with the bowser at all times and the person operating the bowser will be trained in their use. • In the event of an accidental fuel spill, the source of the spill will be fixed, fuel will be contained and cleaned as quickly as possible using the spill kits. • All equipment and machinery will have regular checking for leakages and quality of performance and will carry spill kits. • Any servicing of vehicles will be confined to designated and suitably protected areas such as construction compounds. • Additional drip trays and spill kits will be kept available onsite and stored in each construction compound, and at the on-site substation in case of emergency to ensure that any spills from vehicles are contained and removed off site by a licensed waste management contractor. • The incident will be reported to the site manager and ECoW, and appropriate remediation will be carried out. 	
MM31	Pre-emptive Site Drainage Management / Erosion & Sediment Controls	EIAR Chapter 9	<p>The following forecasting systems are available and will be used on a daily basis at the site to direct proposed construction activities:</p> <ul style="list-style-type: none"> • General Forecasts: Available on a national, regional and county level from the Met Eireann website (www.met.ie/forecasts). These provide general information on weather patterns including rainfall, wind speed and direction but do not provide any quantitative rainfall estimates; • MeteoAlarm: Alerts to the possible occurrence of severe weather for the next 2 days. Less useful than general forecasts as only available on a provincial scale; • 3-hour Rainfall Maps: Forecast quantitative rainfall amounts for the next 3 hours but does not account for possible heavy localised events; • Rainfall Radar Images: Images covering the entire country are freely available from the Met Eireann website (www.met.ie/latest/rainfall_radar.asp). The images are a composite of radar data from Shannon and Dublin airports and give a picture of current rainfall extent and intensity. Images show a quantitative measure of recent rainfall. A 3-hour record is given and is updated every 15 minutes. Radar images are not predictive; and, 	<p>It is recommended that local surface water features in the immediate vicinity of the site boundary are monitored pre-construction to take account of any variations in the quality of the local surface water and groundwater environment as a result of activities related to the proposed project.</p>

			<ul style="list-style-type: none"> • Consultancy Service: Met Eireann provide a 24-hour telephone consultancy service. The forecaster will provide interpretation of weather data and give the best available forecast for the area of interest. Using the safe threshold rainfall values will allow work to be safely controlled (from a water quality perspective) in the event of forecasting of an impending high rainfall intensity event. <p>Works will be suspended if the following is likely to occur:</p> <ul style="list-style-type: none"> • >10mm/hr (i.e., high intensity local rainfall events); • >25mm in a 24-hour period (heavy frontal rainfall lasting most of the day); or, • >half monthly average rainfall in any 7 days. <p>Prior to works being suspended the following control measures will be completed:</p> <ul style="list-style-type: none"> • 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; and • Provide cover to material storage areas i.e., adequate tarpaulin over stockpile areas if material cannot be reinstated prior to suspension. 	
MM32	Streams	EIAR Chapter 9	<p>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”, that is, May to September inclusive. This time period coincides with the period of lowest expected rainfall and, therefore, minimum runoff rates. This will minimise the risk of entrainment of suspended sediment in surface water runoff, and transport via this pathway to surface streams.</p> <p>Runoff will be maintained at Greenfield (pre-development) runoff rates. The layout of the development has been designed to collect surface water runoff from hardstanding areas within the development and discharge to associated surface water attenuation lagoons adjacent to the proposed infrastructure. It will then be managed by gravity flow at Greenfield runoff rates.</p> <p>During the ground clearance of the proposed project, the contractor will implement water control measures to limit the effect on water quality using standards measures as set out in the Forestry Felling Report - Appendix 2-5. Brash will be used along harvesting and extraction routes for soil protection. The forwarder will be loaded to the manufacturer’s maximum specification and no more to avoid overloading and unnecessary soil compaction.</p>	<p>It is recommended that local surface water features in the immediate vicinity of the site boundary are monitored pre-construction and during construction to take account of any variations in the quality of the local surface water and groundwater environment as a result of activities related to the proposed project.</p> <p>Inspections of silt control measures are critical after prolonged or intense rainfall while maintenance will ensure maximum effectiveness of the proposed measures. A programme of inspection and maintenance will be designed, and dedicated construction personnel assigned to manage this programme. A checklist of the inspection and maintenance control measures will be developed, and records kept.</p>

			<p>Suspended solid (silt) removal features will be implemented in accordance with CIRIA C697 SuDS Manual, and CIRIA C648 Control of water pollution from linear construction projects.</p> <p>All temporary and permanent drainage from the site shall be designed to have as a minimum three stages of treatment, as defined in the SuDS Manual. Management of runoff will include the following:</p> <ul style="list-style-type: none"> • Filtration of water through filter media (sand / stone check dam, silt fence); • Detention / settlement in settlement ponds or behind check dam in swales; and • Conveyance of shallow depths of water in vegetated swale. 	<p>During the construction phase, field testing and laboratory analysis of a range of parameters will be undertaken at adjacent watercourses, specifically following heavy rainfall events (i.e., weekly, monthly and event based as appropriate).</p> <p>Regular visual inspections of all streams (flow conditions, discolouration, collection of debris, fish in distress or floating), presented in a monthly report on water quality, is advised by an independent, suitably qualified Ecological Clerk of Works (ECoW) with particular emphasis placed on:</p> <p>Streams downstream of site activities;</p> <p>At times when heavy traffic is frequenting the site;</p> <p>During and after periods of heavy or prolonged rainfall and during winter months;</p> <p>During fish migration and spawning periods; and</p> <p>Stream crossings to ensure that the existing mitigation measures are effective in preventing any sediment reaching streams.</p>
MM33	Interceptor Drains	EIAR Chapter 9	<p>Interceptor drains/diversion ditches will be installed ahead of the main earthworks activities to minimise the effects of collected water on the stripped/exposed soils once earthworks commence.</p> <p>This drainage will integrate into the existing forestry drainage.</p> <p>These drainage ditches will be installed on the upgradient boundary of the areas affected by the access track earthworks operations and installed ahead of the main track construction operations commencing.</p> <p>They will generally follow the natural flow of the ground.</p> <p>The interceptor drains will intercept any storm water surface run-off and collect it to the existing low points in the ground, allowing the clean water flows to be transferred independently through the works without mixing with the construction drainage.</p>	<p>The surface water management system will be visually inspected on a daily basis during construction works to ensure that it is working optimally.</p>

			It will then be directed to areas where it can be redistributed over the ground by means of a level spreader.	
MM34	Swales	EIAR Chapter 9	<ul style="list-style-type: none"> Swales along access tracks are to be installed in advance of the main construction phase. On sections of track where there is significant longitudinal gradient, regular surface water interception channels will be employed – these will typically be at 10-20m intervals to collect any surface water that is discharging as sheet flow along the track and discharge the flow into the trackside swale. Drainage details are included in the CEMP and Drawings 10798-2060 to 10798-2065. Given the steep longitudinal gradients on some sections of access track, regular check dams will be employed within the trackside swale on these sections to reduce the flow velocity and provide settlement opportunity. Check dams will have a minimum 0.2m freeboard (from top of check dam) to top of swale level, to prevent overtopping of flows onto the access track. All check dams, etc to be checked at least once weekly via a walkover survey during the full period of construction. All excess silts to be removed and disposed of appropriately. Where check dams have become fully blocked with silt, they will be replaced. Swales will be re-vegetated by hydro-seeding with indigenous seed mix as soon as is practicable following excavation. 	The surface water management system will be visually inspected on a daily basis during construction works to ensure that it is working optimally.
MM35	Settlement Ponds / Lagoons	EIAR Chapter 9	Settlement ponds will be located downstream of road swale sections and at turbine/hardstand locations. The following shall apply to construction of settlement ponds at the site: <ul style="list-style-type: none"> Pond depths generally to be excavated to less than 2m; Side slopes to be shallow, nominally at a 1 in 3 side slope (maximum); and Material excavated from the settlement pond should be compacted around the edge of the pond. 	<p>The surface water management system will be visually inspected on a daily basis during construction works to ensure that it is working optimally.</p> <p>The frequency of inspection will be increased at settlement ponds adjacent to areas where earthworks are being carried out and during excavations at T10 to T12. Where issues arise, construction works will be stopped immediately, and the source of the issue will be investigated.</p> <p>Records of all maintenance and monitoring activities associated with the surface water network will be retained by the Contractor on-site, including results of any discharge testing requirements.</p>
			<ul style="list-style-type: none"> Interceptor drains will be installed 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. Drainage details are included in this CEMP and Drawings 10798-2060 to 10798-2065. 	
			<ul style="list-style-type: none"> Settlement lagoons will be installed concurrently with the formation of the road and will be fenced off for safety. They will be located as close to the source of sediment as possible and as far as possible from the buffer zones of existing streams. The minimum buffer zone width will be 50 m. Settlement lagoons will be regularly cleaned/maintained to provide effective and successful operation throughout the works. Outfalls and drainage ditches will be cleaned, when required, starting up stream with the outfalls blocked temporarily prior to cleaning. 	

			<p>The sediments/silt in the settlement lagoons will be cleaned regularly and removed via the contractor and deposited at suitable locations on site, away from watercourses. Machine access is required to excavate the accumulated sediment. Control measures include:</p> <p>Regular inspection and maintenance of settlement lagoons and drains; Settlement lagoon maintenance and/or cleaning will not take place during periods of extended heavy rain; Settlement lagoons will be fenced off for safety; Settlement lagoons will where practicable be constructed on even ground and not on sloping ground and discharge into vegetation areas to aid filtration and dispersion.</p>	
			Traffic on site will be kept to a minimum. Only the proposed onsite access track will be used for project-related traffic.	
MM36	Temporary Facilities	EIAR Chapter 9	Temporary on-site toilet facilities (chemical toilets) will be used. These will be sealed with no discharge to the surface water or groundwater environment adjacent to the site.	As required through the contractors CEMP
MM37	Surface Water Flow / Stream Crossings	EIAR Chapter 9	<ul style="list-style-type: none"> Installation of clear-span design bridge or bottomless culverts will take place during dry periods to reduce the risk of sediment entering the stream. Smaller forestry drains and streams will be crossed using normal culverts. A number of ephemeral drainage features (drains) are also present on site. Culverting of these will only take place during dry weather periods. Culverts will be installed to conform to the natural slope and alignment of the drainage line. Culverts will be buried at an appropriate depth below the channel bed and the original bed material placed at the bottom of the culvert. 	It is recommended that local surface water features in the immediate vicinity of the site boundary are monitored pre-construction and during construction to take account of any variations in the quality of the local surface water and groundwater environment as a result of activities related to the proposed project.
MM38	Surface Water Flow / Stream Crossings	EIAR Chapter 9	<ul style="list-style-type: none"> Embedded culverts will be buried to a depth of 0.3m or 20% of their height (whichever is greatest) below the bed. Crossing construction will be carried out, in so far as is practical, with minimal disturbance to the drain bed and banks. If they have to be disturbed, all practicable measures including location of stockpiles away from drainage ditches will be taken to prevent soils from entering any water. Any culverting works at drains will take place only during dry periods when the drains are dry/stagnant. Silt traps will be placed on the downgradient side of the crossing. 	
MM39	Surface Water Flow / Stream Crossings	EIAR Chapter 9	<ul style="list-style-type: none"> Cement and raw concrete will not be spilled into streams. No batching of wet-cement products will occur on site. 	

			<ul style="list-style-type: none"> • Ready-mixed supply of wet concrete products and emplacement of pre-cast elements will take place. • Pre-cast elements for bridge, culverts and concrete works will be used. • During the delivery of concrete on site, only the chute will be cleaned on-site, using the smallest volume of water practicable. • Chute cleaning will be undertaken at lined cement washout lagoons. • These lagoons will be cleaned out by a licensed waste contractor. • No discharge of cement contaminated waters to the construction phase drainage system or directly to any artificial drain or stream will be allowed. • Weather forecasting will be used to plan dry days for pouring concrete. • The pour site will be kept free of standing water and plastic covers will be ready in case of sudden rainfall event. 	
MM40	Surface Water Flow / Stream Crossings	EIAR Chapter 9	<ul style="list-style-type: none"> • A setback distance of 10m to 20m from any stream will be kept clear of brush as far as practicable, to avoid felling of trees into streams and removal of them or any other accidental blockages that may occur. • Where practicable, crossings should be adequately elevated with low approaches such that water drains away from the crossing point. • Earth embankments constructed for bridge approaches will be protected against erosion e.g., by re-vegetation or rock surfacing etc. 	
MM41	Substation	EIAR Chapter 9	<ul style="list-style-type: none"> • The mitigation strategies for the substation foundations follow similar procedures to the excavations for turbine and hardstanding foundations. • Where existing drainage ditches need to be realigned (e.g., around substation), the new swale will match the profile of the existing ditch in relation to side-slope profile and the material at the base of the channel. 	All works will be monitored by a suitably qualified and experienced engineer.

MM42	Turbine Delivery Route (TDR) & Grid Connection Route	EIAR Chapter 9	<ul style="list-style-type: none"> • Silt fencing will be erected at the location of stream crossings along the grid connection route. Silt curtains and floating booms will also be used where deemed to be appropriate and this will be assessed separately at each individual location. • No refuelling of machinery will take place within 50m of a stream. Excavated material will not be stockpiled or side-cast within 50m of a stream. • Appropriate steps will be taken to prevent soil/dirt generated during the temporary upgrade works to the TDR from being transported on the public road. • Silt fences will be located at the toe of the slope to reduce sediment transport. • Road sweeping vehicles will be used to ensure that the public road network remains free of soil/dirt from the location of the TDR works and grid connection when required. • Where existing drainage ditches need to be realigned, new drainage ditches will match the profile of existing drains in relation to width, with shallower side slope profile and material at base of channel will reused. Within the site area, culverts will be assessed to ensure no barriers to fish migration occur. Where barriers occur, such culverts will be improved to increase fisheries potential under advise from the ECoW. 	<p>It is recommended that local surface water features in the immediate vicinity of the site boundary are monitored pre-construction and during construction to take account of any variations in the quality of the local surface water and groundwater environment as a result of activities related to the proposed project.</p>
MM43	Horizontal Directional Drilling (HDD)	EIAR Chapter 9	<ul style="list-style-type: none"> • A minimum 50m vegetative buffer zone will be maintained between the works area and the stream; • There will be no storage of material/equipment or overnight parking of machinery inside the 50m buffer zone. • Before any ground works are undertaken, double silt fencing will be placed upslope of the stream channel along the 50m buffer zone boundary. • Additional silt fencing or straw bales (pinned down firmly with stakes) will be placed across any natural surface depressions / channels that slope towards the stream. • Silt fencing will be embedded into the local soils to ensure all site water is captured and filtered. • The area around the bentonite (clay) batching, pumping and recycling plant will be bunded using terram and sandbags in order to contain any spillages. • Drilling fluid returns will be contained within a sealed tank/sump to prevent migration from the works area. • Spills of drilling fluid will be cleaned up immediately and stored in an adequately sized skip before being taken off-site to an appropriate licenced facility. • If rainfall events occur during the works, there will be a requirement to collect and treat small volumes of surface water from areas of disturbed ground (i.e., soil and subsoil exposures created during site preparation works). This will be completed using a shallow swale and sump down slope of the disturbed 	<p>Daily monitoring of the compound works area, the water treatment and pumping system and the percolation area will be completed by a suitably qualified person during the construction phase. The drilling process / pressure will be constantly monitored to detect any possible leaks or breakouts into the surrounding geology or local stream.</p> <p>The drilling process / pressure will be constantly monitored to detect any possible leaks or breakouts into the surrounding geology or local streams. This will be gauged by observation and by monitoring the pumping rates and pressures. If any signs of breakout occur, then drilling will be immediately stopped.</p>

			<p>ground. Water will be pumped to a proposed distribution area at least 50m from the stream.</p> <ul style="list-style-type: none"> • The discharge of water onto vegetated ground at the percolation area will be via a silt bag which will filter any remaining sediment from the pumped water. • Any sediment laden water from the works area will not be discharged directly to a watercourse or drain. • If high levels of silt or other contamination is noted in the pumped water or the treatment systems, all construction works will be stopped. No works will recommence until the issue is resolved and the cause of the elevated source is remedied. • On completion of the works, the ground surface disturbed during the site preparation works and at the entry and exit pits will be carefully reinstated and re-seeded at the earliest opportunity to prevent soil erosion. • The silt fencing upslope of the river will be left in place and maintained until the disturbed ground has re-vegetated. • There will be no refuelling allowed within 50m of the stream crossing. • All plant will be checked for purpose of use prior to mobilisation at the stream crossing. • The drilling fluid/bentonite will be non-toxic and naturally biodegradable (i.e., Clear Bore Drilling Fluid or similar will be used). • The area around the drilling fluid batching, pumping and recycling plants will be banded using terram and/or sandbags to contain any potential spillage. • Adequately sized skips will be used where temporary storage of arisings are required. • Typical Any frac-out material will be contained and removed off-site. • The drilling location will be reviewed, before re-commencing with a higher viscosity drilling fluid mix. 	
Noise & Vibration				
MM44	Noise	EIAR Chapter 12	<p>The contract documents shall specify that the Contractor undertaking the construction of the works will be obliged to take specific noise abatement measures when deemed necessary to comply with the recommendations of BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise. The following list of measures will be considered, where necessary, to ensure compliance with the relevant construction noise criteria:</p> <ul style="list-style-type: none"> • 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. 	<p>During the construction programme, supervision of the works will include ensuring compliance with the limits detailed in Table 12-13 (Chapter 12) using methods outlined in BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise. The use of independent monitoring by external bodies for verification of results.</p>

			<ul style="list-style-type: none"> • 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. • 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 18:00hrs Mondays to Saturdays. However, to ensure that optimal use is made of good weather period or at critical periods within the programme (i.e., concrete pours) or to accommodate delivery of large turbine component along public routes it could be necessary on occasion to work outside of these hours. <p>Where rock breaking is employed, the following are examples of measures that will be considered, where necessary, to mitigate noise emissions from these activities:</p> <ul style="list-style-type: none"> • Fit suitably designed muffler or sound reduction equipment to the rock breaking tool to reduce noise without impairing machine efficiency. • Ensure all leaks in air lines are sealed. • 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. <p>Further guidance will be obtained from the recommendations contained within BS 5228: Part 1 and the European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations 1988 in relation to blasting operations. The methods used to minimise effects may consist of some or all the following:</p> <ul style="list-style-type: none"> • Restriction of hours within which blasting can be conducted (e.g., 09:00 – 18:00hrs). • A publicity campaign undertaken before any work and blasting starts (e.g., 24 hours written notification). • The firing of blasts at similar times to reduce the ‘startle’ effect. • On-going circulars informing people of the progress of the works. • The implementation of an onsite documented complaints procedure. • Trial blasts in less sensitive areas to assist in blast designs and identify potential zones of influence. 	
MM45	Vibration	EIAR Chapter 12	As blasting is required, the following mitigation measures will be employed to control the impact during blasts:	

			<ul style="list-style-type: none"> • Trial blasts will be undertaken to obtain scaled distance analysis. • Ensuring appropriate burden to avoid over or under confinement of the charge. • Accurate setting out and drilling. • Appropriate charging. • Appropriate stemming with appropriate material such as sized gravel or stone chipping. • Delay detonation to ensure small maximum instantaneous charges. • Decked charges and in-hole delays. • Blast monitoring to enable adjustment of subsequent charges. • Good blast design to maximise efficiency and reduce vibration. • Avoid using exposed detonating cord on the surface. 	
Air Quality Dust and Climate				
MM46	Dust Suppression and Exhaust Emissions Management	EIAR Chapter 2 and Chapter 14	<ul style="list-style-type: none"> • Provision of dust suppression measures (e.g. sweeps/covers/water bowsters) will be used on stockpiles and the road surface during periods of extended dry weather. • Silty or oily water will not be used for dust suppression. Water for dust suppression will be taken from settling ponds in the site's drainage system and will be pumped into a bowser or water spreader to dampen down haul roads and site compounds. • The extent of work areas will be minimised. • Stockpiling of excavated materials will be limited to the volumes required to practically meet the construction schedule. • Drop heights of excavated materials into haulage vehicles will be minimised to a practicable level. • Daily inspections by site personnel to identify potential sources of dust generation along with implementation measures to remove causes where found. • Traffic coming to site will only use the specified haul routes. A wheel wash will be provided near the main site entrance and used to (will prevent the transfer of dust from vehicles used during the construction works on to public roads. • A road sweeper will be available if any section of the surrounding public roads becomes soiled by vehicles associated with the proposed project. • Onsite borrow pits will be used to minimise quantities of stone material being brought to site. • Best practice (including industry recognised dust suppression techniques/equipment) will be used to minimise the potential for dust production during the extraction of rock from the borrow pits and excavations elsewhere. 	Water bowser movements will be carefully monitored, to avoid increased runoff.

			<ul style="list-style-type: none"> Vehicles and plant will be routinely serviced to minimise the exhaust emissions during construction. Vehicles will not be left running unnecessarily and low emission fuels will be used where possible. During the construction phase of the proposed project, all contractors will ensure that machinery used on site is properly maintained and is switched off when not in use to avoid unnecessary exhaust emissions from construction traffic. 	
MM47	Wheel Washing / Road Sweeper	EIAR Chapter 2	<p>To avoid the potential for the transfer of alien invasive plant species into the site, a self-contained wheel-wash system will be installed near the project site entrance (access points one and two).</p> <p>A road sweeper will be available if any section of the surrounding public roads becomes soiled by vehicles associated with the proposed project.</p>	As required through the contractors CEMP
Traffic and Transportation				
MM48	Haul Routes	EIAR Chapter 16	<p>Mitigation measures on the haul roads and cable route includes:</p> <ul style="list-style-type: none"> Selection of a viable route with the lowest impact on the road network. Avoidance where possible of sensitive receptors and urban settings <ul style="list-style-type: none"> The site access route encourages the use of the strategic infrastructure in the area while avoiding the local road and potential sensitive receptors. Turbine delivery route along national and regional roads with largest capacity to accommodate the vehicles. The typical construction traffic haul roads are principally along the national and regional road network, avoiding the local primary and secondary roads. Restricting HGV movements during peak sensitive times on the road networks (i.e. at school times) The grid connection route will be laid primarily in forestry and peatlands, avoiding works within the public road with the exception of a single local road crossing. To mitigate traffic on the national road network, a number of possible routes have been investigated as possible sources of material for delivery. To mitigate the impact of the AIL delivery on the road network, the advanced works are to be undertaken (i.e. hardstanding, making signs demountable, utility diversions etc). The hardstanding works areas will be temporary in nature and removed once the final turbine is delivered to site. 	As required through the contractors CEMP
MM49	Traffic Impact	EIAR Chapter 16	To mitigate traffic impact, liaison with local authorities and the community in advance of foundation pours, as well as minimising other works/deliveries, will be undertaken.	As required through the contractors CEMP

MM50	Abnormal Loads (AIL)	EIAR Chapter 16	<ul style="list-style-type: none"> To mitigate the impact of the AIL deliveries these deliveries will be undertaken under garda and traffic management escort during off-peak (i.e. night-time) hours. The arrangement of the appropriate abnormal load licenses will be obtained by the appointed contractor in a timely fashion on procurement of the AIL. The appointed contractor will liaise with the relevant road's authorities and an Garda Síochána on the delivery schedule for the AILs. 	As required through the contractors CEMP
MM51	Trench Reinstatement	EIAR Chapter 16	<ul style="list-style-type: none"> To mitigate the impact of the cable laid within the public road (at the single local road crossing) the reinstatement works will be backfilled and reinstated as soon as practicable. The reinstatement works will be undertaken in accordance with the "Purple Book" best guidance and practices. The proposed reinstatement and construction details and phasing will be agreed with associated Local Authorities Municipal District Office in advance of the works. The Contractor will be responsible for arranging for the required road opening licenses. 	As required through the contractors CEMP
MM52	Post-Construction Pavement Surveys	EIAR Chapter 16	Where the surveys conclude that damage on the roadway is attributable to the Construction Phase of the proposed project, the applicant will fund the appropriate reinstatement works to bring the road back to pre-construction condition as a minimum, details for which will be agreed with the Roads Authorities.	The client will undertake post-construction visual pavement surveys on the Haul Roads.
MM53	Traffic Management Plan (TMP)	EIAR Chapter 16	<p>The successful completion of this project will require significant co-ordination and planning and 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 project. The Traffic Management Plan (TMP) proposed for the Cloghercor Wind Farm is included in Appendix 2-7.</p> <p>Note, the TMP has been included as a separate document. Any changes which may arise from the planning process and in the detailed construction programme can be incorporated. The following mitigation has been incorporated into the TMP:</p> <ul style="list-style-type: none"> Haul route selection to avoid sensitive receptors. Widened approaches to the site accesses within the development to facilitate queuing of construction vehicles off the public road. Traffic Management Operatives (TMOs) will be provided by the principle contractor in accordance with their Traffic Management Plan at the site accesses during peak construction traffic activities, refer to the TMP. A wheel wash will be provided within the site. 	As required through the contractors CEMP

			<ul style="list-style-type: none"> A one way system in and out of the site will be in place for materials deliveries to avoid conflict between delivery vehicles and ensure the efficient flow of materials and vehicles. Passing bays on the internal access track to facilitate safe passing of vehicles within the site, vehicles travelling in a forward direction (reducing higher risk reversing manoeuvres). 	
MM54	Project Delays	EIAR Chapter 16	To avoid delays to the project programme all required road opening licenses, agreements with the Local Authorities and an Garda Síochána to facilitate movement of abnormal loads shall be sought by the appointed Contractor in a timely manner.	
Waste Management				
MM55	Waste Management	EIAR Chapter 11	<ul style="list-style-type: none"> Segregation of waste will be carried out on site to maximise the potential for waste recycling and minimise any potential for impacts on waste services. A licensed commercial waste collector will be used to remove any waste that does occur on site to one of the local waste processing facilities within Donegal. 	As required through the contractors CEMP
MM56	Wastewater Management	EIAR Chapter 11	<ul style="list-style-type: none"> Wastewater from the staff welfare facilities will be managed by means of a sealed storage tank, with all wastewater being tankered off-site as required by a permitted waste collector to a wastewater treatment plant. It is proposed to use low volume flush toilets (such as those in commonly used port-a loos) and low volume sink faucets to significantly reduce the volume of waste water produced. The proposed wastewater storage tank will be fitted with an automated alarm system that will provide sufficient notice that the tank requires emptying. A confirmatory survey of all existing services will be carried out prior to construction to verify and identify the precise locations of any services. The applicant will liaise with the service provider where such services are identified. Digging around existing services, if present, will be carried out by hand to minimise the potential for accidental damage. Segregation of waste will be carried out on site to maximise the potential for waste recycling and minimise any potential for impacts on waste services. A licensed commercial waste collector will be used to remove any waste that does occur on site to a local waste processing facilities within Donegal. 	As required through the contractors CEMP
Operational Phase				
Biodiversity				
MM57	Biodiversity	EIAR Chapter 6	Implementation of the Biodiversity Management Plan	The development of woody vegetation in the bat mitigation buffers around the

				<p>turbines will be monitored by annual inspections to identify any regenerating trees or shrubs that need to be cut back.</p> <p>The lowland blanket bog and wet heath habitats included in the Biodiversity Management Plan will be monitored by annual inspections to identify any regenerating conifers or invading Rhododendron that need to be removed.</p> <p>The development of vegetation in the wet grassland and areas of dense bracken that are being restored to wet heath included in the Biodiversity Management Plan (Section 6.5.6 of the EIAR) will be monitored by annual vegetation surveys. These will be carried out by a competent botanist and take place for the first five years after the start of implementing the Biodiversity Management Plan measures.</p>
MM58	Bats	EIAR Chapter 6	<p>A surveillance programme will be implemented for the first three years of operation of the wind farm. This surveillance will then be repeated at Year 10 and Year 20 of the operation of the wind farm. The surveillance programme will include bat activity surveillance, carcass searches and curtailment monitoring.</p> <p>The surveillance will be carried out within zones to determine the potential cluster effect of wind turbines. The number of turbines in a particular area has been shown to effect the degree of impact on bat populations. Therefore, in order to understand the potential results from surveillance, surveying for each zone will be completed within the same surveillance period.</p> <p>The bat activity surveillance will involve monitoring the level of bat activity for a minimum of ten nights at each turbine location during three survey periods: spring (April/May), summer (June/July) and autumn (August/September). Monitoring will be carried out at ground level and at height. The monitoring at height is required because bat passes from Leisler's Bats are made only at heights beyond the acoustic range of the ground-based detector.</p>	<p>If more than three years pass between the pre-construction surveys and the construction of the wind turbines, it may be necessary to repeat the pre-construction surveys (EUROBATS, 2014). Full details of the Bat Monitoring Programme are included in Appendix 6-4.</p> <p>Carcass searches will be carried out for a minimum of one morning per turbine per surveillance period: i.e., 3/4 mornings per turbine per year. For each turbine, the search area will be a 100 m radius after ideal bat foraging weather conditions. A scavenger trial will be carried out to</p>

				facilitate analysis (as per SNH, 2021 guidelines).
MM59	Bats	EIAR Chapter 6	Curtailment monitoring will take place at the turbines where curtailment is applied, following the SNH guidelines (SNH, 2021). It will aim to assess changes in bat activity patterns and the efficacy of mitigation to inform any changes to curtailment.	The monitoring will take place for at least three years post-construction, but the effects of habitat modification and off-site enhancements on bat activity may require monitoring over a longer period.
Ornithology				
MM60	Golden Eagles	EIAR Chapter 7	Breeding Golden Eagle surveys will be carried out annually to identify any occupied nest sites within 1 km of the wind farm infrastructure. If any such nest sites are identified, public access to any recreational trails and access tracks within 1 km of the nest site will be closed. Access to these sections of the wind farm for operational purposes will be restricted as far as possible.	Annual surveys by suitably qualified ornithologist
MM61	Birds	EIAR Chapter 7	Dog-proof fencing will be installed along the section of the recreational trail close to Lough Aneane More and around the hardstanding of turbine T11.	This fencing will be inspected in April each year (before the Common Gull breeding season) and any necessary repairs made.
MM62	Birds	EIAR Chapter 7	<p>A post-construction monitoring programme will be carried out. This will include carcass searches to monitor collision mortality, vantage point surveys to help interpret the results of the carcass searches, and various breeding surveys to assess displacement impacts to breeding Golden Eagle, Golden Plover, Snipe and Teal.</p> <p>The carcass searches will include trials of searcher efficiency and scavenger removal. The frequency of the searches will be weekly in October-November and late March / early April (the Whooper Swan migration period) and at least monthly for the rest of the year and will be reviewed after the completion of the first year of surveys to determine if a higher search frequency is required. The searches will continue each year until sufficient data has been collected to generate a statistically robust assessment of the collision mortality impacts to Whooper Swan. The vantage point surveys will take place in tandem with the carcass searches.</p> <p>The other surveys will take place in Years 1, 2, 3, 5, 10 and 15. The Golden Eagle survey will follow the methods of Hardey et al. (2013). The Golden Plover and Snipe surveys will follow the moorland survey methods (SNH, 2017). The Teal survey will follow the methods of Gilbert et al. (1998) for breeding duck surveys. Note that these Golden Eagle surveys will cover the full 6 km buffer zone, while the annual Golden Eagle surveys specified for the purposes of mitigating operational disturbance (see Section 7.5.2) will only need to cover a 1 km buffer around the wind farm infrastructure.</p>	The design of the monitoring programme will be based on the SNH's Guidance on Methods for Monitoring Bird Populations at Onshore Wind Farms (SNH, 2009).
Land, Soils and Geology				
MM63	Refuelling	EIAR Chapter 8	<p>Minimal refuelling or maintenance of operational vehicles or plant will take place on site. Off-site refuelling will occur at a controlled fuelling station;</p> <p>On site re-fuelling will be undertaken using a double skinned bowser with spill kits on the ready for accidental leakages or spillages;</p>	As required by the Operation Management Plan for the wind farm

			Re-fuelling will be undertaken by suitably trained personnel only; and 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 operation and fitted with a storm drainage system and an appropriate oil interceptor.	
MM64	Peatland Health and Safety	EIAR Chapter 8	Peatland Health and Safety training at the Proposed wind farm for operational staff by incorporating the issue into the Site Induction. Induction to include risk assessment information (peat instability indicators, best practice and emergency procedures) in toolbox talks with relevant staff. Communication of residual peat risk to appropriate site operatives.	Ongoing monitoring of residual risks and maintenance if required. Such items will consist of regular inspection of drains to prevent blockages, inspections of specific areas after a significant rainfall event.
Hydrology and Hydrogeology				
MM65	Maintenance	EIAR Chapter 9	The operational team will carry out maintenance works such as servicing of wind turbine and transmission infrastructure, upkeep of access tracks and any hardstand areas, ensuring the drainage system remains functional throughout the operation of the windfarm.	As required by the Operation Management Plan for the wind farm
MM66	Inspections and maintenance	EIAR Chapter 9	Mitigation for the operational maintenance works include regular scheduled maintenance works, regular inspections of all project elements with any unscheduled repairs or maintenance arising to be undertaken.	As required by the Operation Management Plan for the wind farm
MM67	Wastewater, and Water Management	EIAR Chapter 9	Given the requirement for sanitary facilities during occasional operation and maintenance works, wastewater effluent will be directed to an onsite holding tank, from where it will be tankered off site to a suitably licensed wastewater treatment plant. A rainwater harvesting facility will be provided at the substation control building. Potable water will be provided by water dispensers.	An automatic alert system will be used to monitor the holding tank to alert the operator if the tank is nearing full capacity.
Shadow Flicker				
MM68	Turbine Shutdown Scheme	EIAR Chapter 10	A Turbine Shutdown Scheme will be the primary mitigation measure for shadow flicker effect and will be implemented for the proposed wind farm project based on the predicted shadow flicker at each shadow flicker receptor. The Turbine Shutdown Scheme will be employed to ensure that shadow flicker does not occur at the affected property(s). During the commissioning phase, there is potential for some shadow flicker to be experienced as the shadow flicker management software is installed and refined. However, the commissioning team will ensure that the maximum daily limit of 30 minutes per day is not exceeded during this temporary commissioning period, which will last approximately two months	A process will be established by the wind farm operator whereby local residents can highlight any concerns or complaints about the operation of the scheme. All concerns raised will be investigated by the wind farm operator and the turbine shutdown software adjusted accordingly, as required.
MM69	Screening	EIAR Chapter 10	The applicant will engage with any affected residents to investigate options for new or additional screening measures (such as planting), where appropriate and agreeable to the affected residents.	As required for the measures agreed.
Material Assets				
MM70	Lighting and aviation	EIAR Chapter 11	Lighting requirements of the turbines will comply with Department of Defence (Air Corps) November 2022 consultation response: "Fixed Red obstacle lighting with a	To be agreed with the relevant stakeholders

			<p>minimum output of 2,000 candela to be visible in all directions of azimuth and to be operational H24/7 days a week. Obstacle lighting should be incandescent or of a type visible to Night Vision equipment. Obstacle lighting must emit light at the near Infra-Red (IR) range of the electromagnetic spectrum, specifically at or near 850 nanometres (nm) of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light" (Appendix 1-3).</p> <p>The final locations and dimensions of each turbine will be mapped and provided to Donegal County Council and stakeholders (such as the Irish Aviation Authority and, Donegal Airport) prior to erection to ensure that maps and databases are up-to-date for flight navigation.</p>	
MM71	Telecommunications	EIAR Chapter 11	The applicant has signed an agreement with 2RN to commit to restoring service to any end users that may have their service disrupted as a result of the proposed project.	To be agreed with the relevant stakeholders
MM72	Waste Management	EIAR Chapter 11	Segregation of waste will be carried on site to maximise the potential for waste recycling and minimise any potential for impacts on waste services. A licensed waste collector will be used to remove any waste that does occur on site. A low-flush cistern will be fitted to reduce the volume of wastewater produced and a rainwater harvesting system as the source of water for this and hand-washing basin, with all potable water being brought onsite in bottles.	As required by the Operation Management Plan for the wind farm
Noise & Vibration				
MM73	Noise nuisance	EIAR Chapter 12	In the event that a complaint which indicates potential amplitude modulation (AM) associated with turbine operation, the operator will employ an independent acoustic consultant to assess the level of AM in accordance with the methods outlined in the Institute of Acoustics (IOA) Noise working Group (Wind Turbine Noise) Amplitude Modulation Working Group (AMWG) namely, Institute of Acoustics IOA Noise Working Group (Wind Turbine Noise) Amplitude Modulation Working Group Final Report: A Method for Rating Amplitude Modulation in Wind Turbine Noise (9 August 2016) or subsequent revisions.	As required by the Operation Management Plan for the wind farm
Air Quality and Climate				
MM74	Exhaust Emissions Management	EIAR Chapter 14	All contractors/staff will ensure that machinery used on site is properly maintained and is switched off when not in use to avoid unnecessary exhaust emissions from maintenance traffic. Traffic associated with the public amenity facility will be confined to the proposed public car park.	As required by the Operation Management Plan for the wind farm
Decommissioning Phase				
Population and Human Health				
MM75	Construction Activities	EIAR Chapter 5	Internal access roads, substation and wind turbine bases will be retained in place after decommissioning of the wind turbines to maintain access for forestry and recreation, minimise disruption to the electricity grid infrastructure and reduce the effect of construction activities (such as noise, air quality and traffic movements) on the local	As required by the Decommissioning Plan for the proposed project

			<p>population associated with their removal. Turbine hardstandings will be covered with topsoil and revegetated.</p> <p>No mitigation is proposed for the decommissioning phase in respect of effects on population trends, property value or tourism.</p>	
Biodiversity				
MM76	Ground disturbance and Invasive Species Management	EIAR Chapter 6	<p>The potential water quality and disturbance impacts from the proposed project's decommissioning phase will be similar to those from the construction phase. Therefore, the mitigation measures for the construction phase (Section 6.5.2) and Invasive Species Management Plan measures (Section 6.5.2.4) will also be applied to the decommissioning phase. In addition, all structures proposed to be removed, will be removed offsite, while below ground structures filled with clean and free from invasive species material. Hardstanding areas will be rehabilitated by covering with local topsoil and allowed to revegetate.</p>	As required by the Decommissioning Plan for the proposed project
Land, Soils and Geology				
MM77	Below ground Cabling	EIAR Chapter 8	<p>Decommissioning will comprise the removal of non-reusable power generation devices and infrastructure to ground level, it is assumed that below ground cabling, etc, would be left in-situ.</p>	As required by the Decommissioning Plan for the proposed project
MM78	Internal Access Roads	EIAR Chapter 8	<p>Internal access roads could be removed although the Irish Wind Energy Association suggest there may be benefits to leaving them in place (IWEA, 2017). Furthermore, in the context that almost all of the internal roads will have a dual function of providing access to the turbines and amenity trackways it is intended that all of the roadways will be retained.</p>	As required by the Decommissioning Plan for the proposed project
MM79	Turbine locations	EIAR Chapter 8	<p>Concrete bases will be left in the ground, covered with topsoil, and allowed to naturally re-seed in line with IWEA best practises (IWEA, 2017). The area around the bases will be rehabilitated by covering it with locally sourced soil in order to regenerate the vegetation. This will also reduce run-off and sedimentation effects.</p>	As required by the Decommissioning Plan for the proposed project
MM80	Fuel Management	EIAR Chapter 8	<p>A fuel management plan to avoid contamination by fuel leakage during decommissioning works will be implemented as per the construction phase mitigation measures.</p>	As required by the Decommissioning Plan for the proposed project
Material Assets				
MM81	Waste Management	EIAR Chapter 11	<p>Segregation of waste will be carried out on site to maximise the potential for waste recycling and minimise any potential for impacts on waste services. Appropriately licensed waste collectors will be used to remove any municipal waste, wastewater or general demolition waste that does occur on site. The majority of wastes from decommissioned infrastructure will be recyclable, and the large items (turbines, met mast) will be collected and processed by appropriately licensed specialist companies with the capability to process these items correctly.</p>	As required by the Decommissioning Plan for the proposed project
Noise & Vibration				
MM82	Noise	EIAR Chapter 12	<p>The mitigation measures to any decommissioning of the site are the same as those proposed for the construction phase (See MM44 for further detail).</p>	Monitoring activity in relation to noise and vibration will include:

				Monitoring typical levels of noise and vibration during critical periods and at sensitive properties.
Air Quality and Climate				
MM83	Exhaust Emissions Management	EIAR Chapter 14	Similar to the construction phase, all contractors will ensure that machinery used on site is properly maintained and is switched off when not in use to avoid unnecessary exhaust emissions from construction traffic.	As required by the Decommissioning Plan for the proposed project
Traffic and Transportation				
MM84	Traffic and Transport	EIAR Chapter 16	<p>On decommissioning of the wind farm, a decommissioning plan will be prepared and implemented to minimise the effects during this stage. The decommissioning phase will employ similar mitigation measures as the construction phase. As the decommissioning phase is envisaged to be over 35 years from now, a new TMP will be undertaken to take account of any road improvements and changes to the network in the future.</p> <p>When the turbine blades are decommissioned, they are cut to a more manageable size. The reduced blade section lengths, tower sections and nacelle are likely to remain abnormal loads, however the swept path of the long blades will be reduced. This will reduce the impact on third parties and existing road infrastructure (i.e. signs, vehicle restraint systems etc).</p> <p>As previously mentioned, the large volume of material aggregate and concrete imported to site will remain onsite. The principal expected volumes of traffic will be primarily associated with the transportation off-site of turbine components and a significantly reduced volume of materials only (i.e. haul routes maintained, turbine foundations retained, substation retained, car parking hardstanding areas retained for future amenity).</p>	As required by the Decommissioning Plan for the proposed project