16. SCHEDULE OF MITIGATION

16.1 Introduction

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

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

All mitigation measures which will be implemented during the pre-commencement, construction and operational phases of the project are outlined in Table 15.1. The mitigation measures have been grouped together according to their environmental field/topic and are presented under the following headings:

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

The mitigation proposals in the below format provides an easy to audit list that can be reviewed and reported on during the future phases of the project. The proposal for site inspections and environmental audits are set out in the Construction and Environmental Management Plan (CEMP) which is included as Appendix 4.3 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.

Ref. No.	Reference Heading	Location	Mitigation Measure
Pre-Commencement Phase			
MM1	Environmental Management	EIAR Chapter 4	The Contractor will be responsible for implementing the mitigation measures specified throughout the EIAR and compiled in the Audit Report which is included in the CEMP. The Contractor will also be responsible for ensuring that all construction staff understand the importance of implementing the mitigation measures. The implementation of the mitigation measures will be overseen by the environmental clerk of works or supervising hydrogeologists, environmental scientists, ecologists or geotechnical engineers, depending on who is best placed to advise on the implementation. The system of auditing referred to above ensures that the mitigation measures are maintained for the duration of the construction phase, and into the operational phase where necessary.
MM2	Environmental Management	EIAR Chapter 4	The Environmental Clerk of Works will maintain responsibility for monitoring the works and Contractors/Sub-contractors from an environmental perspective. In addition, an Environmental Clerk of Works or Project Ecologist, Project Hydrologist, Project Geotechnical engineer will visit the site regularly and report to the Site Environmental Office.
MM3	Environmental Management	EIAR Chapter 4	A Site Environmental Clerk of Works will oversee the site works and implementation of the Construction Environmental Management Plan (CEMP), and provide on-site advice on the mitigation measures necessary as necessary to ensure the project proceeds as intended. The level, detail and frequency of reporting expected from the Site Environmental Clerk of Works for the Construction Manager, developer's project manager, and any Authorities or other Agencies, will be agreed by parties where required prior to commencement of construction, and may be further adjusted as required during the course of the project.
MM4	Environmental Management- Invasive Species	CEMP Section 3	A baseline invasive species survey will be carried out at the site to identify the presence and location of any invasive species (listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) by a suitably qualified ecologist. If the presence of such species is found at, or adjacent to, the site, particularly in areas where excavation may be required, an invasive species management plan will be prepared for the site to prevent the introduction or spread of any invasive species within the footprint of the works. An invasive species management plan, if required, will set out best practice control methods.

MM5	Roads	CEMP Section 2	Prior to commencing road construction, movement monitoring posts should be installed in areas where the peat depth is greater than 1m.
MM6	Drainage	CEMP Section 2	Interceptor drains should be installed upslope of the access road alignment to divert any surface water away from the construction area.
MM7	Drainage	CEMP Section 3	Prior to commencement of works in sub-catchments across the site, main drain inspections will be competed to ensure ditches and streams are free from debris and blockages that may impede drainage
MM8	Biodiversity	EIAR Chapter 6	Pre-construction surveys for Badger and Otter will be undertaken prior to the commencement of works
MM9	Biodiversity	EIAR Chapter 6	On a precautionary basis, prior to the commencement of any site works, a badger sett disturbance licence will be sought from the National Parks and Wildlife Service.
MM10	Biodiversity	EIAR Chapter 6 and Chapter 4	A detailed drainage maintenance plan for the proposed development is provided in Section 4.7 of this EIAR. This plan provides details of how water quality will be protected during the construction of the proposed development
MM11	Biodiversity	EIAR Chapter 6 and Appendix 6.7	A Biodiversity Management Plan has been provided to avoid loss of uncut raised bog and natural woodlands and the ecological enhancement of areas of cutover bog through rewetting to promote the development of wetland vegetation.
MM12	Biodiversity	EIAR Chapter 6 and Appendix 6.6	A Lepidoptera Management Plan has been produced which outlines the areas of suitable marsh fritillary habitat that 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). › 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, 2019). › Pollinator enhancement measures through habitat creation.

MM13	Traffic Management Plan, Delivery Programme, pre-commencement road works	EIAR Chapter 14	› **A Pre-Construction Condition Survey** – Where required by the local authority, a pre-condition survey of roads associated with the proposed development can be carried out immediately prior to construction commencement to record an accurate condition of the road at the time. Where required the timing of these surveys will be agreed with the local authority. › A detailed **Traffic Management Plan (TMP)**, will be provided specifying details relating to traffic management and included in the CEMP prior to the commencement of the construction phase of the proposed development. The TMP will be agreed with the local authority and An Garda Síochána prior to construction works commencing on site. The detailed TMP will include the following: o **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. o **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. › Selection of the most appropriate delivery route to transport the wind turbine components, requiring the minimum remedial works to accommodate the vehicles › Construction of temporary improvements to the local highway network at locations
MM14	Information to Local Residents	EIAR Chapter 14	Locals in the area will be informed of any upcoming traffic related matters e.g. temporary lane/road closures (where required) or delivery of turbine components at night, via letter drops and posters in public places. Information will include the contact details of the Project Co-Ordinator, who will be the main point of contact for all queries from the public or local authority during normal working hours. An "out of hours" emergency number will also be provided

Construction Phase			
Construction Management			
MM15	Health and Safety	EIAR Chapter 5	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 2013'*. This will encompass the use of all necessary Personal Protective Equipment and adherence to the site Health and Safety Plan which will include measures to exclude members of the public from certain areas of the site during construction.
MM16	Health and Safety	EIAR Chapter 5	The scale and scope of the project requires that a Project Supervisor Design Process (PSDP) and Project Supervisor Construction Stage (PSCS) are required to be appointed in accordance with the provisions of the Health & Safety Authority's 'Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2006'. The PSDP appointed for the construction stage shall be required to perform his/her duties as prescribed in the Safety, Health and Welfare at Work (Construction) Regulations. These duties include (but are not limited to): › Identify hazards arising from the design or from the technical, organisational, planning or time related aspects of the project; › Where possible, eliminate the hazards or reduce the risks; › Communicate necessary control measures, design assumptions or remaining risks to the PSCS so they can be dealt with in the Safety and Health Plan; › Ensure that the work of designers is coordinated to ensure safety; › Organise co-operation between designers; › Prepare a written Safety and Health Plan; › Prepare a safety file for the completed structure and give it to the client; and › Notify the Authority and the client of non-compliance with any written directions issued.

MM17	Health and Safety	EIAR Chapter 5	The PSCS appointed for the construction stage shall be required to perform his/her duties as prescribed in the Safety, Health and Welfare at Work (Construction) Regulations. These duties include (but are not limited to): › Development of the Safety and Health Plan for the construction stage with updating where required as work progresses; › Compile and develop safety file information › Reporting of accidents / incidents; › Weekly site meeting with PSCS; › Coordinate arrangements for checking the implementation of safe working procedures. Ensure that the following are being carried out: › Induction of all site staff including any new staff enlisted for the project from time to time; › Toolbox talks as necessary; › Maintenance of a file which lists personnel on site, their name, nationality, current Safe Pass number, current Construction Skills Certification Scheme (CSCS) card (where relevant) and induction date; › Report on site activities to include but not limited to information on accidents and incidents, disciplinary action taken and PPE compliance; › Monitor the compliance of contractors and others and take corrective action where necessary; and › Notify the Authority and the client of non-compliance with any written directions issued.
MM18	Reinstatement	EIAR Chapter 4	Some overburden material will be stored temporarily adjacent to the works areas for reinstatement when the main construction activities are completed. Soil will be backfilled outside the drainage channels along track-sides and vegetated sods replaced over the surface, bedded-in, regraded, etc., to re-constitute a stable and settled ground surface on which the natural vegetation can recover and will be resistant to erosion.
MM19	Waste Materials	CEMP Section 3	A fully licensed waste contractor will be employed to remove waste from the site and will be required to provide documented records for all waste dispatches leaving the site of the proposed development.

Drainage Design and Management			
MM20	Earthworks	EIAR Chapter 9	Avoid working during heavy rainfall and for up to 24 hours after heavy events to ensure drainage systems are not overloaded.
MM21	Excavation Dewatering and Surface Water Quality	EIAR Chapter 9	› If required, pumping of excavation inflows will prevent build-up of groundwater in the excavation; › The interceptor drainage will be discharged to the existing drainage system or onto the bog surface; › The pumped water volumes will be discharged via volume and sediment attenuation ponds adjacent to excavation areas, or via specialist treatment systems such as a "Siltbuster" unit; › There will be no direct discharge to the existing drainage network and therefore no risk of hydraulic loading or contamination will occur; and, › Daily monitoring of excavations by a suitably qualified person will occur during the construction phase. If high levels of seepage inflow occur, excavation work should immediately be stopped, and a geotechnical assessment undertaken.
MM22	Watercourse Buffers	EIAR Chapter 9	A self-imposed buffer zone for peat storage will be established around the existing field drains on site. Also, a buffer zone around field ditches and watercourses where no peat can be stored is being implemented. A 25 m buffer around field ditches and a 50m construction buffer from all watercourses is recommended as per industry best practice. With the exception of upgrading watercourse crossings.
MM23	Drainage Swales	EIAR Chapter 9, Appendix 4-5	Swales will be used to intercept and collect run off from construction areas of the site during the construction phase, and channel it to settlement ponds for sediment attenuation as per the drainage design.
MM24	Interceptor Drains	EIAR Chapter 9, Appendix 4-5	Interceptor drains will be installed up-gradient of any works areas to collect surface flow runoff and prevent it reaching excavations and construction areas of the site. It will then be directed to areas where it can be re-distributed over the ground as sheet flow as per the drainage design.

MM25	Transverse drains	EIAR Chapter 9, Appendix 4-5	On steep sections of access road transverse drains ('grips') will be constructed where appropriate in the surface layer of the road to divert any runoff off the road into swales/road side drains;
MM26	Check dams	EIAR Chapter 9, Appendix 4-5	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.
MM27	Level Spreaders	EIAR Chapter 9, Appendix 4-5	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.
MM28	Vegetation filters	EIAR Chapter 9, Appendix 4-5	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.
MM28	Settlement ponds	EIAR Chapter 9, Appendix 4-5	Settlement ponds, placed either singly or a pair in series, will buffer volumes of run-off discharging from the drainage system during periods of high rainfall, by retaining water until the storm hydrograph has receded, thus reducing the hydraulic loading to water courses as per the drainage design.
MM30	Siltbuster	EIAR Chapter 9, Appendix 4-5	If the discharge water from construction areas fails to be of a high quality, then a filtration treatment system (such as a 'siltbuster' or similar equivalent treatment train (sequence of water treatment processes)) will be used to filter and treat all surface discharge water collected in the dirty water drainage system. This will apply for all of the construction phase.
MM31	Silt Fences	EIAR Chapter 9, Appendix 4-5	Silt fences will be emplaced within drains down-gradient of all construction areas. Silt fences are effective at removing heavy settleable solids. This will act to prevent entry to the existing drainage network of sand and gravel-sized sediment, released from excavation of mineral sub-soils of glacial and glacio-fluvial origin and entrained in surface water runoff. Inspection and maintenance of these structures during construction phase is critical to their functioning to stated purpose. They will remain in place throughout the entire construction phase.

MM32	Silt Bags	EIAR Chapter 9, Appendix 4-5	Silt bags will be used where small to medium volumes of water need to be pumped from excavations (e.g. the proposed underpass locations). As water is pumped through the bag, most of the sediment is retained by the geotextile fabric allowing filtered water to pass through.
MM33	Potential Release of Hydrocarbons	EIAR Chapter 9 CEMP Section 3	› All plant will be inspected and certified to ensure they are leak free and in good working order prior to use on site; › On-site re-fuelling of machinery will be carried out using a mobile double skinned fuel bowser. The fuel bowser, a double-axel custom-built refuelling trailer or truck will be re-filled off site and will be towed/driven around the site to where machinery are located. The 4x4 jeep/fuel truck will also carry fuel absorbent material and pads in the event of any accidental spillages. The fuel bowser will be parked on a level area in the construction compound when not in use and only designated trained and competent operatives will be authorised to refuel plant on site. Mobile measures such as drip trays and fuel absorbent mats will be used during all refuelling operations; › Fuels stored on site will be minimised. Any storage areas will be bunded appropriately for the fuel storage volume for the time period of the construction; › The electrical control building will be bunded appropriately to the volume of oils likely to be stored and to prevent leakage of any associated chemicals and to groundwater or surface water. The bunded area will be fitted with a storm drainage system and an appropriate oil interceptor; › An emergency plan for the construction phase to deal with accidental spillages will be contained within the Construction Environmental Management Plan. Spill kits will be available to deal with accidental spillages.
MM34	Release of Cement-Based Products	EIAR Chapter 9 CEMP Section 3	› No batching of wet-cement products will occur on site. Ready-mixed supply of wet concrete products and where possible, emplacement of pre-cast elements, will take place; › Where possible pre-cast elements for culverts and concrete works will be used; › No washing out of any plant used in concrete transport or concreting operations will be allowed on-site; › Where concrete is delivered on site, only the chute will be cleaned, using the smallest volume of water possible. No discharge of cement contaminated waters to

			the construction phase drainage system or directly to any artificial drain or watercourse will be allowed. Chute cleaning water is to be isolated in temporary lined wash-out pits located near proposed site compounds. These temporary lined wash-out pits will be removed from the site at the end of the construction phase; › Will use weather forecasting to plan dry days for pouring concrete; and, › M*M35*Will ensure pour site is free of standing water and plastic covers will be ready in case of sudden rainfall event
MM35	Plant and equipment inspections	EIAR Chapter 8	Site plant will be regularly inspected for leaks and fitness for purpose; and, an emergency plan for the construction phase to deal with accidental spillages will be contained within the Construction Environmental Management Plan. Spill kits will be available to deal with accidental spillages.
MM36	Wastewater Disposal	EIAR Chapter 8	Temporary port-a-loo 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 an appropriately consented waste collector to wastewater treatment plants.
MM37	Concrete Deliveries and Management	CEMP Section 3	No batching of wet-cement products will occur on site. Ready-mixed supply of wet concrete products will be used and where possible, pre-cast elements for culverts and concrete works will be used.
MM38	Concrete Deliveries and Management	CEMP Section 3	No washing out of any plant used in concrete transport or concreting operations will be allowed on-site.
MM39	Concrete Deliveries and Management	CEMP Section 3	Where concrete is delivered on site, only the chute need be cleaned, using the smallest volume of water possible. No discharge of cement contaminated waters to the construction phase drainage system or directly to any artificial drain or watercourse will be allowed. Chute cleaning water is to be directed into a dedicated lined washout area. This lined area will be removed from site once the construction phase is complete.
MM40	Concrete Deliveries and Management	CEMP Section 3	Weather forecasting will be used to plan dry days for pouring concrete. Ensure pour site is free of standing water and plastic covers will be ready in case of sudden rainfall event
MM41	Concrete Deliveries and Management	CEMP Section 3	Where possible pre-cast elements for culverts and concrete works will be used

Peat, Subsoils and Bedrock			
MM42	Topsoil/Peat and Subsoil Excavation	EIAR Chapter 8	› The peat and subsoil which will be removed during the construction phase will be localised to the wind farm infrastructure turbine location, substation, temporary compounds and access roads; › The proposed development has been designed to avoid sensitive habitats within the application area; › A minimal volume of peat and subsoil will be removed to allow for infrastructural work to take place in comparison to the total volume present on the site due to optimisation of the layout by mitigation by design; › Excavated peat will only be moved short distances from the point of excavation and will be used locally for landscaping; and, › Construction of settlement ponds will be volume neutral, and all excess material will be used locally to form pond bunds and surrounding landscaping.
MM44	Peat Instability and Failure	EIAR Chapter 8	› Appointment of experienced and competent contractors; › The site should be supervised by experienced and qualified personnel; › Allocate sufficient time for the project (be aware that decreasing the construction time has the potential to increase the risk of initiating a localised peat movement); › Prevent undercutting of slopes and unsupported excavations; › Maintain a managed robust drainage system; › Prevent placement of loads/overburden on marginal ground; › Set up, maintain and report findings from monitoring systems (as outlined in the Geotechnical and Peat Stability Assessment (Appendix 8.1)); › Ensure construction method statements are developed and agreed before commencement of construction and are followed by the contractor; and, › Revise and amend the Construction Risk Register as construction progresses to ensure that risks are managed and controlled for the duration of construction.
MM45	Erosion of Exposed Subsoils and Peat During	EIAR Chapter 8 and Appendix 4-2	› Peat removed from turbine locations and access roads will be used for landscaping close to the extraction area;

	Construction of Infrastructure		› Where possible, the upper vegetative layer (where still present) will be stored with the vegetation part of the sod facing the right way up to encourage growth of plants and vegetation at the surface of the stored peat within the peat storage areas; › Re-seeding and spreading/planting will also be carried out in these areas; › A full Peat and Spoil Management Plan for the development is shown as Appendix 4.2.
Biodiversity			
MM46	Marsh Fritillary	EIAR Chapter 6	Habitat condition monitoring will be undertaken to ensure that there are no negative effects on marsh fritillary habitat.
MM47	Badger setts	EIAR Chapter 4 and Chapter 6	› An exclusion zone around the sett will be maintained for the duration of the construction works. No works will be undertaken within 30m of the sett. › Following best practice, the proposed works within 50 metres of the sett will be undertaken outside of the badger breeding season (December to June) (NRA, 2005). › The proposed access track construction in close proximity to a badger sett will be constructed as a 'floating road' construction. This will avoid the requirements for the excavation of materials and therefore reduce both the construction time and intensity of the proposed construction works in this area. › To protect individual badgers during the construction phase of the proposed development, all open excavations on site will be covered when not in use and backfilled as soon as possible. Excavations will also be covered at night and any deep excavations left open will have appropriate egress ramps in place to allow mammals to safely exit excavations should they fall in.
MM48	Bats	EIAR Chapter 6	› Any loss of woodland habitat will be mitigated through replacement planting › Construction best practice will be employed to minimise general noise and disturbance potential. 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).

MM49	Invasive Species	Appendix 4-5	› A designated wash-down area will be created, where power-washed material from machinery can be contained, collected and disposed of with other contaminated material. This area will contain a washable membrane or hard surface. › Stockpile areas will be chosen to minimise movement of contaminated soil. › Stockpiles will be marked and isolated. › Contaminated areas which will not be excavated will be protected by a root barrier membrane if they are likely to be disturbed by machinery. Root barrier membranes will be protected by a layer of sand above and below and topped with a layer of hardcore. › The use of vehicles with caterpillar tracks within contaminated areas will be avoided to minimise the risk of spreading contaminated material. › An ECoW/suitably qualified ecologist will be on site to monitor and oversee the implementation of invasive species management plans. › Personnel may only clean down if they are familiar with the plant and rhizome material and can readily identify it. › Decontamination will only occur within designated wash-down areas. Vehicles will be cleaned using stiff-haired brush and pressure washers, paying special attention to any areas that might retain rhizomes e.g. wheel treads and arches.
Ornithology			
MM50	Lapwing, Waterfowl and Wader Habitat	EIAR Chapter 7 and Appendix 7.8	› Lapwing, Waterfowl and Wader Habitat Enhancement Plan will be implemented to enhance potential habitats and minimise potential habitat loss. The plan focuses on the enhancement of supporting habitat for lapwing but its implementation will also benefit, redshank, black-headed gull, woodcock, ringed plover, whooper swan and snipe.
MM51	Ornithology	EIAR Chapter 7	› The removal of woody vegetation will be undertaken outside the bird breeding season which begins on the 1st day of March and ends on the 31st day of August in any year.

			➢ All woodland/scrub (c. 7.24ha) that is removed to facilitate the construction of the proposed development will be replaced with native tree species (c. 13ha). This will ensure there will be a net gain of woodland within the proposed development area. ➢ 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 and 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) other relevant legislation. ➢ An Ecological Clerk of Works (ECoW) will be appointed and will operate for the duration of construction works. Duties will include: o Undertake a pre-construction transect/walkover bird survey to ensure that significant effects on breeding birds will be avoided. o Inform and educate on-site personnel of the ornithological and ecological sensitivities within the Proposed Development site. o Oversee management of ornithological and ecological issues during the construction period and advise on ornithological issues as they arise. o Provide guidance to contractors to ensure legal compliance with respect to protected species onsite. o Liaise with officers of consenting authorities and other relevant bodies with regular updates in relation to construction progress.
Noise			
MM53	Best Practise Measures BS5528-1	EIAR Chapter 11	Best Practice Mitigation Measures from BS5528-1 standard will be implemented for the duration of the construction phase: ➢ limiting the hours during which site activities likely to create high levels of noise or vibration are permitted; ➢ establishing channels of communication between the contractor/developer, Local Authority and residents; ➢ appointing a site representative responsible for matters relating to noise and vibration;

			› monitoring typical levels of noise and vibration during critical periods and at sensitive locations; › keeping site access roads even to mitigate the potential for vibration from lorries. A variety of practicable noise control measures will also 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.
Air Quality/Dust			
MM54	Dust Emissions	EIAR Chapters 5, 10 CEMP Section 3	› Sporadic wetting of loose stone surface will be carried out during the construction phase to minimise movement of dust particles to the air. › In periods of extended dry weather, dust suppression may be necessary along haul roads 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 and site compound to prevent the generation of dust where required. Water bowser movements will be carefully monitored to avoid, insofar as reasonably possible, increased runoff. › All plant and materials vehicles shall be stored in dedicated areas (on site). › Areas of excavation will be kept to a minimum, and stockpiling will be minimised by coordinating excavation, spreading and compaction. › Turbines and construction materials will be transported to the site on specified haul routes only. › The agreed haul route roads adjacent to the site will be regularly inspected for cleanliness and cleaned as necessary. › 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.

			› A Construction and Environmental Management Plan (CEMP) will be in place throughout the construction phase (see Appendix 4.3. The CEMP includes dust suppression measures.
MM55	Exhaust Emissions	EIAR Chapter 5, Chapter 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. › Aggregate materials for the construction of site access tracks and all associated infrastructure will all be locally sourced, where possible, which will further reduce potential emissions.
MM56	Greenhouse Gas Emissions	EIAR Chapter 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. › Aggregate materials for the construction of site access tracks and all associated infrastructure will all be locally sourced, where possible, which will further reduce potential emissions.
Traffic			
MM57	Traffic Management Co-Ordinator	EIAR Chapter 14	A competent Traffic Management Coordinator will be appointed for the duration of the project and this person will be the main point of contact for all matters relating to traffic management.
MM58	Liaison with the relevant local authority	EIAR Chapter 14	Liaison with the relevant local authority including the roads section of local authorities that the delivery routes traverse and An Garda Siochána, during the delivery phase.
MM59	Travel Plans for Construction Workers	EIAR Chapter 14	The construction company will be required to provide a travel plan for construction staff, which will include the identification of a routes to / from the site and identification of an area for parking.
MM60	Temporary traffic signs	EIAR Chapter 14	As part of the traffic management measures temporary traffic signs will be put in place at all key junctions, including the access junction on the N15. All measures will be in accordance with the *"Traffic Signs Manual, Chapter 8 – Temporary Traffic Measures and Signs for Road Works"* (DoT

			now DoTT&S) and "Guidance for the Control and Management of Traffic at Roadworks" (DoTT&S). A member of construction staff (flagman) will be present at key junctions during peak delivery times.
Cultural Heritage			
MM61	Impact of excavation works on unrecorded potential sub-surface sites	EIAR Chapter 13	› Archaeological monitoring (under licence from the National Monuments Service) of any further geotechnical / engineering trial pits or investigations and a report detailing the results of same. › Pre-development Licensed testing in areas where peat depths allow a meaningful investigation. Testing should only be undertaken in areas where ground disturbance will take place as part of the development. Where peat depths become a limitation to testing, monitoring at the construction stage should be undertaken. The areas to be tested will be chosen by the appointed archaeologist and the number of test trenches agreed between the archaeologist and the National Monuments Service (NMS) through the licensing system. Peat depth data and local ground conditions may dictate the number and location of test trenches to be undertaken. › Archaeological monitoring of ground works during construction works. 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. › During the excavation of new proposed access routes, a known memorial plaque located along the proposed route from T21 to the proposed substation will be fenced off prior to construction works in this location. Fencing will be maintained for the duration of the construction works.

Operational Phase			
Health and Safety			
MM62	Health & Safety	EIAR Chapter 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.
Biodiversity			
MM63	Bats	EIAR Chapter 6 and Appendix 6.2.	Ongoing monitoring of bat activity will be undertaken for at least three years' post construction of the wind farm. Full details of the proposed monitoring programme are provided in Appendix 6.2 and include measurement of bat activity, weather conditions and any correlation between the two. The monitoring will also include corpse searching in the areas surrounding the turbines to gather data on any actual collisions. If, following monitoring, there are significant effects recorded, a range of measures are proposed to ensure that any such effects are fully mitigated. These measures include blade feathering, curtailment of turbines during certain conditions and increase of buffers surrounding the turbines. Any or all of the above measures may be employed following actual monitoring of the impact of the operating turbines on bats.
Traffic Management			
MM64	Roads	EIAR Chapter 14	**A Post Construction Condition Survey** – Where required by the local authority, a post construction survey will be carried out after works are completed to ensure that any remediation works are carried out to a satisfactory standard. Where required the timing of these surveys will be agreed with the local authority. All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers
Population and Human Health			
MM65	Shadow Flicker	EIAR Chapter 5	Where daily or annual shadow flicker exceedances are experienced at buildings, a site visit will be undertaken to determine the level of occurrence, existing screening and window orientation. The shadow flicker prediction data will be used to select dates on which a shadow flicker event could be observed at one or multiple affected properties and the following process will be adhered to.

			In the event of shadow flicker being noted as occurring the details of the duration (times) of the occurrence will be recorded.
Ornithology			
MM66	Bird monitoring programmes	EIAR Chapter 7 and Appendix 7.9	Post-construction Bird Monitoring Programme which includes: › Flight activity surveys: vantage point surveys › Breeding Bird surveys: O'Brien & Smith/Adapted Brown & Shephard. › Winter Distribution and Abundance Surveys: Winter Transects/Waterfowl Surveys (I-WeBS methods) (with an emphasis on wintering waterfowl). › Targeted bird collision surveys (corpse searches) will be undertaken with training dogs. The surveys will include detection and scavenger trials, to correct for these two biases and ensure the resulting data is robust. Surveys will be scheduled to coincide with Years 1, 2, 3, 5, 10 and 15 of the lifetime of the wind farm. Monitoring measures are broadly based on guidelines issued by the Scottish Natural Heritage (SNH, 2009).
Drainage Management Plan			
MM67	Drainage Inspection	EIAR Chapter 9, CEMP Section 3	› Monitoring the effectiveness of drainage measures installed during the construction phase will continue to be monitored into the operational phase. Any excess build-up of silt levels at dams, the settlement pond, or any other drainage features that may decrease the effectiveness of the drainage feature, will be removed.
Noise			
MM68	Turbine Programming	EIAR Chapter 11	Modern wind turbines can be programmed to run in reduced modes of operation (or low noise modes) in order to achieve the calculated attenuation required in the specific wind conditions (i.e. wind speed and direction). Operating the turbines in reduced noise modes is generally referred to as curtailment.

MM69	Noise Monitoring	EIAR Chapter 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. For example, implementation of noise operational modes resulting in curtailment of turbine operation can be implemented for specific turbines in specific wind conditions to ensure predicted noise levels are within the relevant noise criterion curves/planning conditions. Such curtailment can be applied using the wind farm SCADA system without undue effect on the wind farm operations. For post-commissioning of the proposed turbine units, it is recommended that the noise monitoring detailed in Section 11.3.7 be repeated with consideration of the guidance outlined in the IoA GPG and Supplementary Guidance Note 5.