CHAPTER 18: SCHEDULE OF MITIGATION

18. Schedule of Mitigation

18.1 Introduction

18.1.1 The purpose of this Chapter is to provide a summary of mitigation measures proposed throughout this EIA Report, to minimise or offset the potential effects of the Proposed Development on the receiving environment.

18.1.2 During the construction phase these shall be detailed within and implemented through the site-specific Construction Environmental Management Plan (CEMP), refer to Technical Appendix 3.1: Outline CEMP of this EIA Report.

18.1.3 Table 18.1 provides a summary of those mitigation measures identified throughout the EIA Report.

Table 18.1 – Mitigation Measures Identified within EIA Report

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
General Mitigation				
G1	Restoration and Reinstatement	Site reinstatement would be programmed and carried out to allow rehabilitation of disturbed areas as early as possible to minimise storage of excavated material on vegetation. Reinstatement works are generally undertaken during construction (and immediate post-construction phase) and aim to address any areas of ground disturbance and changes to the landscape as part of the construction works. Reinstatement is undertaken as soon as practical following the construction works in each area, such as the re-dressing of road and track verges (and other areas that may be disturbed as a result of the construction process). Such works would involve the reinstatement of areas disturbed during the construction phase. This would be undertaken to provide a natural ground profile with non-geometric surfaces and tie-ins with existing undisturbed ground levels to prevent the collection of surface water. It would in all instances be undertaken at the earliest opportunity to minimise storage of turf and other materials and to provide completed reinstatement at the earliest opportunity. Typical reinstatement works are outlined in the Outline CEMP. Site tracks and hardstanding areas at each turbine location would be retained for use in ongoing maintenance operations (including component replacement) and decommissioning of the wind farm. The edges would as far as possible be blended to the adjacent contours, with natural vegetation being allowed to re-establish. Any other temporary hardstanding areas would be re-graded with peat or soil to a natural profile and reinstated as appropriate. All construction equipment and other temporary infrastructure would be removed from site and the temporary storage areas would be reinstated.	3.5.2, 3.6.14 – 3.6.18, Technical Appendix 3.1: 15	Contractor
G2	Borrow Pit Reinstatement	Following construction, borrow pits would be reinstated with a suitable restoration profile.	3.4.5, Technical Appendix 3.1: 15.1.9 Technical Appendix 11.1	Contractor

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
G3	Construction Hours	Construction activities are anticipated to be between 07.00 and 19.00 hours Mondays to Fridays and 07.00 to 14.00 hours on Saturdays. No working activities would be planned on Sundays. In the event of work being required outwith these hours, the Planning Authority would be notified, wherever possible. Any blasting on site shall only take place between the hours of 10.00 to 16.00 on Monday to Friday inclusive and 10.00 to 12.00 on Saturdays with no blasting taking place on a Sunday or on National Public Holidays, unless otherwise approved in advance in writing by the Planning Authority.	3.5.5, 3.5.6, Technical Appendix 3.1: 19	Contractor
G4	Environmental Management	Prior to construction works, sensitive ecological areas and other specific sensitive locations would be marked out as appropriate on site to avoid unnecessary encroachment and protect sensitive areas during construction. No vehicle movements or other activities would take place outwith the approved working area. Informed by the Environmental Constraints Maps, the Contractor provides an Environmental Risk Map illustrating environmentally sensitive areas and potential sources of pollution (e.g. water buffers, designated refuelling areas, location of spill kits, concrete wash out areas, fuel tanks etc.). The Environmental Risk Map will be used during the induction and prominently displayed in the compound areas. In consultation with the ECoW, the Contractor updates the map as required.	3.6.1, Technical Appendix 3.1: 4.1.4	Contractor / ECoW
G5	Micrositing	There may be a requirement to microsite elements of the Proposed Development as a result of additional constraints encountered during site works. Turbines, access tracks, underground cables and crane hard standing areas may be microsited within 50m of the positions shown on Figure 3.1: The Proposed Development. Beyond this, agreement would be sought from the Planning Authority in consultation with SEPA. Any micrositing would require agreement of the specialist advisors (e.g. the ECoW) as appropriate.	3.6.2, Technical Appendix 3.1: 10.5.5	Contractor / EcoW / Other specialist advisers (e.g. Geotechnical Engineer) if applicable and required).
G6	Construction Environmental Management	A Construction Environmental Management Plan (CEMP) would be prepared for the Proposed Development. The CEMP would be submitted to THC (in consultation with NatureScot and SEPA as required) outlining site specific details of all on-site construction works, reinstatement, drainage and mitigation, and any post construction reinstatement works together with details of their timetabling. An outline CEMP is provided in Technical Appendix 3.1 of this EIA Report.	3.6.3, Technical Appendix 3.1 (Various)	Applicant / Contractor
G7	Site Environmental Management	The Principal Contractor would have overall responsibility for environmental management on the Site. The services of specialist advisors, such as the project ECoW, would be retained as appropriate to be called on as required to advise on specific issues. The Principal Contractor and the Applicant	3.6.4 – 3.6.6 Technical Appendix 3.1	Applicant / Contractor / ECoW

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
		would ensure construction activities are carried out in accordance with the mitigation measures outlined in this EIA Report and those detailed in the Approved CEMP.		
G8	Community Liaison	Consultation with the local community during the construction of the Proposed Development would be an important consideration for the Applicant and the Principal Contractor. A community liaison group would be set up to provide the local community with information about key construction activities and a mechanism by which concerns from within the local community could be shared and discussed.	3.6.19	Applicant
G9	Site Operation and Maintenance	Once commissioned, it is expected that the Proposed Development would require the continued use of the current existing infrastructure within the Site. Routine maintenance, inspections and servicing would be carried out on each turbine as required at the Proposed Development, including major component and blade inspections. Appropriate maintenance works would be carried out routinely, and immediately following any unexpected events on site, such as failure of a generator or gearbox.	3.6.20-3.6.21	Applicant and Turbine Manufacturer(s)
G10	Track Maintenance	Frequency of track maintenance depends largely on the volume and nature of the traffic using the track, with weathering of the track surface also having an appreciable effect. Heavy plant is particularly wearing and on-going track maintenance would be undertaken as necessary throughout the year. Safe access and management of silt run off from weathered track material would be maintained all year round. There would be no public vehicular access to the Site.	3.6.22-3.6.23	Applicant and Contractor
G11	Decommissioning	Detailed decommissioning proposals would be established and agreed with relevant authorities prior to commencement of decommissioning activities.	3.6.24-3.6.30	Applicant
Landscape and Visual Amenity Mitigation (see Chapter 7)				
LV1	Reinstatement	The successful landscape reinstatement of areas disturbed during the construction of the Proposed Development including compounds, working areas and borrow pits is important in minimising the degree of landscape effect. The formation of smooth gradients to tie into adjacent undisturbed areas and the use of Best Practice techniques for the handling and reinstatement of soil and peat as outlined in the Outline Construction Environmental Management Plan (CEMP) (Technical Appendix 3.1) and the Design Statement (Technical Appendix 2.1), and monitoring as detailed in the Outline Habitat Management Plan (Technical Appendix 8.10) would assist in the successful reinstatement of disturbed areas and minimise landscape and visual effects to those resulting from the permanent features of the Proposed Development.	7.13.3, Technical Appendix 3.1: 15	Contractor

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
Mitigation for Ecology (see Chapter 8)				
E1	Direct habitat loss and temporary disturbance effects to blanket bog and other sensitive terrestrial habitats during construction	Site supervision would be provided by a suitably experienced Environmental Clerk of Works (ECoW), who would be responsible for ensuring the successful implementation of embedded measures, including pollution prevention (see below), monitoring of buffers around construction areas and reference to areas of high ecological sensitivity, and adherence to current construction good practice.	8.7.15: Table 8.11, Technical Appendix 3.1: 5	ECoW
E2		Pre-construction surveys of all works areas over blanket bog would be undertaken by a suitably qualified ECoW to identify locations of any rare bog species (notably dwarf birch and dwarf juniper) and propose suitable avoidance buffers, or consideration of translocation elsewhere within the Site as necessary.	8.7.15: Table 8.11.	ECoW
E3		As part of an overarching CEMP, a Peat Management Plan would be developed and submitted pursuant to an anticipated condition of the deemed planning permission (an outline CEMP is provided in Technical Appendix 3.1), in consultation with a suitably experienced peatland Ecologist, Hydrologist and the relevant consultees, in advance of construction works commencing. This would include the method of removal and storage for vegetated turves and peat together with good practice reinstatement measures for the re-use of excavated peat within the Site.	8.7.15: Table 8.11, Technical Appendix 3.1: 14 Technical Appendix 11.3	Contractor
E4		Best practice techniques of vegetation and habitat reinstatement would be adopted and implemented in areas of disturbed vegetation, such as cut track sides, cranepads, substation and borrow pits. Early reinstatement of all disturbed areas would be undertaken to minimise the effects of soils and peat exposure erosion. Any plant material used in reinstatement techniques would be of local provenance and be appropriate for locations being restored. Lessons learned from habitat reinstatement at other SSE upland wind farm sites, e.g. Fairburn, Dumnaglass, and Gordonbush would be used to inform suggested approaches and increase the likelihood of success. Reinstatement techniques would be agreed in consultation with relevant consultees before construction operations begin.	8.8.14: Table 8.11, Technical Appendix 3.1 (various)	Contractor / ECoW
E5		A Habitat Management Plan (HMP) (Technical Appendix 8.10) would be implemented with the aim of ensuring successful restoration of affected blanket bog and wet heath within the Glencassley Estate. The HMP would be submitted pursuant to a condition of the deemed planning permission, following consultation with NatureScot and SEPA.	8.7.15: Table 8.11, Technical Appendix 3.1: 15,	Contractor / ECoW

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
			Technical Appendix 8.10.	
E6	Obstruction of migration and associated adverse effects on fish, including Atlantic Salmon, spawning and recruitment during construction.	Watercourse crossing designs/construction would be informed by SEPA Good Practice Guide for the Construction of River Crossings (SEPA 2010) and CIRIA Culvert Design and Operation Guide (CIRIA 2010). Bridged watercourse crossings would be used where feasible/practicable. A Watercourse Crossing Assessment, which includes a description of the likely CAR authorisation and type of watercourse crossings required to accommodate the Proposed Development, is included in Technical Appendix 10.2.	8.7.15: Table 8.11, Technical Appendix 3.1: 9, Technical Appendix 10.2	Contractor
E7	Loss of / damage to watercourse habitat at watercourse crossings during construction, including associated adverse effects on fish, spawning and recruitment	Watercourse crossings would be micro-sited to avoid unconsolidated gravel and pebble substrates and riffle habitats. Culvert construction would be supervised by the ECoW, with culverts transferred to watercourse crossings intact, avoiding mixing concrete near to watercourse crossings. Culverts would be sunk in and angled so as not to prohibit fish passage. With the exception of work at watercourse crossings a buffer/exclusion zone (50m radius) around watercourses would be implemented. A Watercourse Crossing Assessment, which includes a description of the likely watercourse crossings types required to accommodate the Proposed Development, is included in Technical Appendix 10.2.	8.7.15: Table 8.11, Technical Appendix 3.1: 9, Technical Appendix 10.2	Contractor / EcoW / Other Specialist Advisers (e.g. hydrologist) where required.
E8	Release of silt, sediment and/or pollutant during construction, damaging aquatic habitats and potentially harming fish and other aquatic species.	With the exception of work at watercourse crossings, a buffer/exclusion zone (50m radius) around the watercourse network would be implemented. Additional measures to minimise the risk of pollution sediment release to watercourses are set out in detail in Chapter 10: Hydrology and Hydrogeology. Pollution prevention measures would be detailed within the CEMP and would be implemented as part of the CAR licensing requirements. An Outline CEMP is provided as Technical Appendix 3.1.	8.7.15: Table 8.11, Technical Appendix 3.1: 5	Contractor / ECoW
E9	Noise and vibration effects during construction and	With the exception of watercourse crossings (construction and operation), a buffer/exclusion zone (50m radius) around the watercourse network would be implemented, which would minimise noise/vibration effects on fish. Construction of watercourse crossings would be completed over a	8.7.15: Table 8.11	Contractor / ECoW

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
	associated harm to fish and other aquatic species, including Freshwater pearl mussel.	period of short duration and taking care to minimise noise/vibration, such as avoiding impacts between plant and riverbed/bank substrate and carefully lowering culverts into place.		
E10	Harm, disturbance or displacement of otter and/or water vole during construction	The CEMP would include Species Protection Plans (SPP) for otter and water vole, which would be prepared to ensure compliance with legislation. These would include details of pre-construction surveys to check on the presence of otters and water voles and the incorporation of appropriate work exclusion buffers, including a 10m buffer around active water vole habitat. Where works may be required within these exclusion buffers a licence would be required form NatureScot prior to further commencement. A Suite of embedded mitigation would also be implemented across the Site to avoid causing harm to, or disturbing these, as listed in Table 8.11 in Chapter 8: Ecology.	8.7.15: Table 8.11, Technical Appendix 3.1: 10.4	Contractor / ECoW
E11	Harm, disturbance and/or displacement of otter and/or water vole during operation	All operational and maintenance work requirements would be undertaken within working areas clearly defined in advance of works and the storage of materials would be restricted to areas of hardstanding e.g. permanent tracks, crane pads or substation and control building, and associated infrastructure.	3.6.20, 3.6.21, 8.7.15: Table 8.11	Contractor
E12	Disturbance and/or displacement of commuting and foraging bats during construction	Any lighting used to accommodate such works must be positioned to minimise light spill onto watercourses/ waterbodies. Directional lighting and light spill within 50m of the Allt an Rasail and Allt Bad an t-Sagairt (both of which providing suitable foraging/commuting habitat) would be avoided during the hours of darkness (taken to be 30 minutes before sunset to 30 minutes after sunrise). No security lighting to be left on in-situ overnight where practicable.	8.7.15: Table 8.11	Contractor
		Turbines would be sited at least the minimum recommended distance from suitable habitat features (equating to a stand- off area of 50m from blade tip to habitat feature), based upon the calculation set out in paragraph 8.7.13) and in accordance with current guidance (SNH *et al*., 2019).	8.7.13, 8.7.15: Table 8.11	Contractor / ECoW
		Good practice environmental measures would be adopted to minimise the risk of bats colliding with turbines during operation, in accordance with current guidance (SNH, 2019). Turbines will have a minimum 50m separation distance between blade tips and high-value bat habitats, such as woodland and riparian features. Although this offset has been included in the design of the Proposed	8.7.15: Table 8.11 Technical Appendix 3.1	Contractor / ECoW

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
		Development, this standoff buffer will be maintained throughout the operational life of the Proposed Development by ensuring that tree regeneration does not encroach on the buffer.		
E13	Habitat Management	The outline HMP (Technical Appendix 8.10) sets out criteria for identifying and delivering compensatory blanket bog habitat management both on-site and off-site. Habitat management proposals will seek to: • Within five years of commissioning of the windfarm, to restore and enhance a blanket bog habitat within the candidate management units. This will increase the quality and extent of blanket bog and compensate for habitat loss incurred as a result of the Proposed Development; • Management works in these Units will provide foraging conditions for golden plover, greenshank and dunlin, by increasing the extent of wetter habitat through drain blocking; and • Work in conjunction with the Deer Management Plan (DMP) provided as Technical Appendix 8.9 to reduce deer grazing pressure during the establishment of recovering habitats and improve the quality of blanket bog in the Study Area.	Technical Appendix 8.9 Technical Appendix 8.10	Applicant
E14	Deer Mangement	Construction of the Proposed Development could involve the temporary displacement of red deer (*Cervus elephus*) from the Site into designated nature conservation sites, including the Caithness & Sutherland Peatlands SAC, specifically the SSSI components (i.e. the Grudie Peatlands SSSI and the Strath an Loin SSSI). A Deer Management Plan (DMP) has been prepared and is provided in Technical Appendix 8.9. The management plan provides detailed measures on the management of deer numbers to help minimise potential trampling and grazing damage to blanket bog habitat identified for habitat management proposals off-site (as detailed in the oHMP - Technical Appendix 8.10). This management plan has been prepared with consideration of the existing East Sub-Group Deer Management Plan (ESG DMP). The DMP also includes habitat condition monitoring which would result in amendments to the DMP as necessary. Proposed mitigation and enhancement measures in relation to deer management are detailed in Section 8.4 of Technical Appendix 8.9.	8.9.7, Technical Appendix 8.9 (with mitigation measures detailed in Section 8.4)	Applicant

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
Mitigation for Ornithology (see Chapter 9)				
O1	Bird Protection and Mitigation Plan	A Bird Protection and Mitigation Plan, which would form part of the CEMP, would be produced prior to construction. This plan would set out the survey methods, a coverage and reporting schedule for all bird monitoring (pre and during construction), the protocols and appropriate buffer distances to be put in place should breeding birds be identified (depending on species, line of sight and nature of construction activities), and materials for toolbox talks for all site staff on legal obligations and best practice. It would also establish protocols for recording and disseminating bird survey results (where appropriate) or information on disturbance buffers and protection measures to site staff to inform ongoing construction works. The Outline CEMP, provided in Technical Appendix 3.1, notes that SPPs may be required in relation to specially protected species and these will be developed as required on the project prior to commencement of construction.	9.9.3, Technical Appendix 3.1: 10.4.1-10.4.4	Experienced ornithologist, (who would work in close liaison with the ECoW)
O2	Pre-Construction Bird Surveys	A pre-construction survey would be undertaken (specifically for moorland breeding birds, breeding divers and breeding raptors) to inform the detailed measures required to ensure effective mitigation of breeding birds.	9.9.3	Experienced ornithologist
O3	Habitat Management	Aim to mitigate for the possible displacement and loss of breeding territories from the Proposed Development. The measures proposed are set out in Chapter 8, Technical Appendix 8.10 – Outline Habitat Management Plan. These would be implemented during operation of the Proposed Development and would restore and enhance blanket bog habitat within three identified candidate management units. The goal is to increase the quality and extent of blanket bog resource and compensate for habitat loss incurred as a result of the Proposed Development. Three off-site candidate management units have been identified in liaison with Glencassley Estate. These areas have been identified as comprising blanket bog habitat, that has the potential for recovery and would respond to a programme of damming, along with appropriate deer grazing levels. The implementation of restoration proposals within these candidate areas would result in increased habitat suitability for breeding waders.	9.9.5, – 9.9.10, Technical Appendix 8.10.	Applicant
O5	Post-Construction Bird Monitoring	To accompany the HMP, detailed post-construction bird monitoring would take place to monitor operational effects on IOFs and provide information on effectiveness of operational mitigation measures, and to determine if there is a requirement for any additional measures.	9.9.10	Experienced ornithologist
O6	Mitigation during Decommissioning	Mitigation during decommissioning would employ many of the same measures described for construction (See refs O1 and O2), whereby a Bird Protection Plan would be designed and	9.9.11	Experienced ornithologist, (who

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
		implemented, informed by a pre-decommissioning survey of the area potentially affected. This plan would be further refined to take account of any changes in legal requirements, guidance or policy in the intervening years.		would work in close liaison with the ECoW)
Mitigation for Hydrology and Hydrogeology (see Chapter 10)				
HH1	Chemical Pollution (during Construction)	The potential for impacts on the water environment through the release of pollutants or sediments during the construction phase shall be managed through the implementation of a final CEMP (as outlined in Technical Appendix 3.1: Outline Construction Environmental Management Plan). The final CEMP shall incorporate measures to ensure that the release of sediments or pollutants to the surrounding environment is avoided.	10.8.4, Technical Appendix 3.1: 5	Contractor
		The storage of potentially contaminative materials (oils, cements/ grouts) shall be carried out at least 50m from watercourses. Fuels, oils or chemicals stored on-site shall be sited over an impervious base and according with the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended).	10.8.5, Technical Appendix 3.1 (various)	Contractor
HH2	Sedimentation and Erosion (during construction)	The final CEMP (as outlined in Technical Appendix 3.1) would include measures to minimise potential adverse effects related to surface water and groundwater discharge, including impacts associated with dewatering which may arise from the excavation of borrow pits and turbine foundations. Therefore, the contractor shall be required to meet regulatory requirements and implement best practice measures as set out in SEPA planning guidance.	10.8.6, Technical Appendix 3.1 (various)	Contractor
HH3	Prevention of Sedimentation and Erosion (during construction)	Construction works would be regulated under the CAR licensing regime and all necessary licences will be sought from SEPA prior to the commencement of any operations on-site. Where required, interceptor ditches shall divert water to locations downstream of proposed excavation or soil disturbance works associated with the installation of turbine foundations, the development of construction compounds and batching plants, groundworks during the installation of the substation and the excavation of borrow pits. These would be specified in a Pollution Prevention Plan (PPP) that would be compiled by the contractor in accordance with SEPA guidance (SEPA, February 2018). Sediment capture methods to be implemented at the Site would be detailed in the final CEMP. Such measures shall ensure that sediment laden runoff shall be directed to settlement ponds suitable for the containment of volumes of water and sediment as appropriate to the area of disturbed or excavated ground (taking in to account the potential for rainfall events). Water discharged from	10.8.7– 10.8.11, Technical Appendix 3.1 (various)	Applicant / Contractor

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
		settlement ponds shall be directed to vegetated areas and measures such as silt fences shall ensure sediment loads are fully entrained. The Outline CEMP (see Technical Appendix 3.1) includes proposed drainage layout for borrow pits and methods by which stockpiled materials would be separated from surface runoff as far as practicably possible. The CEMP would be finalised prior to commencement. Where drains are installed, either temporarily during the construction phase, or in association with the installation of site infrastructure, check dams would be installed at suitable intervals (as defined by the gradient of the drain) to reduce flow velocity and allow the settlement of sediment loads prior to discharge to watercourses. These would be detailed in the PPP.		
HH4	Alteration to Surface Water Flows and Runoff	Details of construction phase SuDS would be included in the PPP and the final CEMP, as required, to provide a surface water management and treatment train that would mitigate potential adverse impacts on the hydrology of the Site and surrounding areas during the construction phase of the Proposed Development. Measures would be included to ensure that pre-development runoff rates are maintained and that rates of runoff to watercourses are not increased. Construction Site plans and proposed drainage measures shall form a PPP. Where a track is required to enter the 50m buffer around a 'natural watercourse' in order to cross a watercourse, as described in Technical Appendix 10.2, the installation of SuDS measures shall be supervised by the Ecological Clerk of Works (ECoW) during the construction phase of works. The requirement for monitoring of water quality within watercourses upstream and downstream of the Proposed Development would be agreed with SEPA and Marine Scotland. Prior to works, baseline water quality monitoring shall be carried out. Subsequent monitoring during construction (and operation) in line with the final CEMP would be adopted by the Applicant's appointed Principal Contractor. An outline CEMP is included in the EIA Report (Technical Appendix 3.1) Any requirement for surface water or groundwater abstraction will be completed in accordance with the CAR.	10.8.12-10.8.14, Technical Appendix 3.1 (various), Technical Appendix 10.2	Applicant / Contractor / ECoW

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
HH5	GWDTE (during construction)	As the potential GWDTE areas assessed are not considered likely to be groundwater dependent, specific mitigation with respect to groundwater supplies are not considered to be applicable. To ensure the maintenance of quality and quantity in surface water distribution across habitats identified as potentially groundwater dependent (as these areas are assessed to be predominantly supported by surface water supply), suitable drainage and surface water measures to maintain hydrological connectivity in peatland and wetland habitats and prevent deleterious impacts on surface water distribution would be included in the final CEMP (an outline CEMP is included as Technical Appendix 3.1).	10.8.15- 10.8.16, Technical Appendix 3.1 (various)	Contractor / EcoW
HH6	Watercourse Crossings (during construction)	Construction shall be carried out in accordance with best SEPA practice and SEPA Guidance for Pollution Prevention. Splash boards and runoff diversion measures, including silt fencing adjacent and parallel to watercourses beneath bridges and at culvert crossings, will be used at all crossings during construction to prevent direct siltation of watercourses.. A Watercourse Crossing Assessment, which includes a description of the likely CAR authorisation and type of watercourse crossings required to accommodate the Proposed Development, is included in Technical Appendix 10.2. Where a track is required to enter the 50m buffer around a 'natural watercourse' in order to cross a watercourse, as described in Technical Appendix 10.2, the installation of SuDS measures shall be supervised by the ECoW during the construction phase of works. The drainage management works at watercourse crossings will, be supervised by the ECoW and shall be in accordance with the final CEMP.	10.8.17-10.8.18, Technical Appendix 3.1: 9, Technical Appendix 10.2	Contractor / ECoW
HH7		The detailed design of each watercourse crossing would seek to ensure hydraulic conveyance is maintained to prevent any restriction of flows, as well as allowing the free passage of mammals and aquatic ecology. Therefore, each watercourse crossing would have sufficient capacity to pass the climate change-adjusted 1:200-year flood including an allowance for partial blockage. Two watercourse crossings will span relatively large watercourses. These are WC4 across the Allt Bad an t-Sagairt, and WC32 across the Allt an Ràsail (see Technical Appendix 10.2). SEPA guidance typically requires that single span structures be designed where feasible, especially for larger watercourse crossing widths where a bridge design would typically be considered more appropriate. At the remaining five watercourse crossing locations, it has been assumed that the proposed watercourse crossings could constitute culverts with construction on the bed or banks of the watercourses only. Where feasible, bottomless arched culverts may be installed. However, it is noted that closed culverts are likely to be appropriate at most locations due to the small size of watercourses, artificial morphology or intermittent flow. A Watercourse Crossing Assessment, which	10.8.19-10.8.21, Technical Appendix 3.1: 9, Technical Appendix 10.2	Contractor

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
		includes a description of the likely watercourse crossings types required to accommodate the Proposed Development, is included in Technical Appendix 10.2.		
HH8	Site Maintenance (during operation)	A site maintenance programme with regard to the Site plant and infrastructure would be implemented during the operational phase of the Proposed Development. A maintenance schedule would also be developed for all SuDS and drainage assets installed at construction stage to ensure that the function and benefit provided, remains for the lifetime of the Proposed Development. Water quality monitoring would be carried out during operation in line with the CEMP adopted by the Applicant's appointed Principal Contractor. An outline CEMP is included in the EIA Report (Technical Appendix 3.1).	10.8.22-10.8.24	Applicant
Mitigation for Geology and Carbon Balance (See Chapter 11)				
GC1	Peat landslide	The risk of peat slides has been assessed as being generally Negligible to Low across much of the Site. Regular inspections of peat stability will be carried out by the Contractor's Geotechnical Engineer throughout the construction phase of the project. Loading of peat would be kept to a minimum and hydrology maintained as best as possible. A Peat Landslide Hazard Risk Assessment is included as Technical Appendix 11.2.	11.8.2: Table 11.7, Technical Appendix 3.1: 14.6.1-14.6.2, Technical Appendix 11.2	A Geotechnical Engineer, appointed by the Applicant / Contractor
GC2	Dewatering of peat during construction	Construction works will refer to SEPA's Guidance on the Assessment of Peat Volumes, Re-use of Excavated Peat and Minimisation of Waste (SEPA, 2014), and the project CEMP.	11.8.2: Table 11.7, Technical Appendix 3.1 (various)	Contractor
GC3	Peat Management	Construction works will refer to SEPAs Guidance on the Assessment of Peat Volumes, re-use of Excavated Peat and the Minimisation of Waste. Excavation of peat should be kept to a minimum throughout the projects development. A Carbon Balance Calculation has been included within Technical Appendix 11.4. A Peat Management Plan has been included within Technical Appendix 11.3.	11.8.2: Table 11.7, Technical Appendix 3.1: 14, Technical Appendix 11.3, Technical Appendix 11.4	Contractor

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
GC4	Oversteepening cut faces when excavating peat during construction works.	Peat stability has been assessed within the PMP included within Technical Appendix 11.3. This assessment is based on assumed ground conditions, however, a ground investigation is required to establish soil parameters where by an assessment can be carried out to establish safe slope angles to minimise the risk of slope destabilisation during construction.	11.8.2: Table 11.7, Technical Appendix 3.1: 14, Technical Appendix 11.2, Technical Appendix 11.3	Applicant / Contractor
GC5	Land erosion during construction works.	A Construction Environment Management Plan has been included within Technical Appendix 3.1. Good practice shall be implemented including careful minimisation of excavation, control of drainage and appropriate storage of materials. Drainage will be designed to ensure that the impact of water erosion on the Site is minimised. An intrusive ground investigation will be carried out post consent, to more fully understand the groundwater levels on site.	11.8.2: Table 11.7, Technical Appendix 3.1 (various)	Applicant / Contractor
GC6	Blasting during construction	Planning Advice Note (PAN) 50 Annex D 'The Control of Blasting at Surface Mineral Workings (Scottish Executive, 2000) and BS5607 'Code of practice for the safe use of explosives in the construction industry' (British Standards Institution, 2021) will be adhered to.	11.8.2: Table 11.7	Contractor
GC7	Bedrocks weathered zones and characteristics	An intrusive ground investigation will take place post consent to better understand the bedrock's characteristics and weathered bedrocks profile.	11.8.2: Table 11.7	Contractor
Mitigation for Cultural Heritage (See Chapter 12)				
CH1	Protection of Archaeological Sites	Given the presence of large zones of (generally shallow) peat moorland within the Site, there is a low probability that currently unknown buried remains might be disturbed by ground-breaking works on the Site during construction. Accordingly, a representative proportion of these works, in areas of relatively greater archaeological potential, would be subject to an archaeological watching brief during these works. The extent and location of such works would be agreed with THC Historic Environment Team. The purpose of such a watching brief would be to determine the presence, character, extent and significance of any currently unknown archaeological features or artefacts that may be disturbed by ground-breaking works.	12.8.4, Technical Appendix 3.1: 11.1.1-11.1.6	Contractor

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
CH2	Protection of Archaeological Sites	In areas where no Watching Brief is required there will still be some potential for the presence of unknown archaeological subsurface features or structures. Guidelines for all construction contractors undertaking any ground works, without archaeological supervision, will be issued by an Archaeological Consultant to include the procedure for calling upon professional archaeological support in the event that buried remains with archaeological potential are discovered during the absence of a watching brief (see Technical Appendix 3.1: Outline CEMP). Should an adverse impact thereafter be identified for an unknown heritage asset, a mitigation strategy allowing works to proceed would be proposed and agreed with THC Historic Environment Team by way of a Written Scheme of Investigation (WSI).	12.8.5, Technical Appendix 3.1: 11.1.1-11.1.6	Contractor
Mitigation for Access, Traffic and Transport (See Chapter 13)				
T1	Community Liaison	During the construction period, a community liaison group would be set up by the Applicant's Stakeholder Engagement Manager to disseminate information and listen to feedback. The Applicant would maintain a project website that would be regularly updated to provide the latest information relating to traffic movements associated with vehicles accessing the Site. This would be agreed with THC.	13.8.1, Technical Appendix 13.1: 8.2	Contractor / Applicant
T2	Abnormal Load Convoy	Information would be provided relating to expected abnormal load convoy movements from Nigg or Invergordon through to the Proposed Development access. The aim is to ensure that residents are aware of convoy movements and help reduce any potential conflicts.	Technical Appendix 13.1: 8.3	Contractor / Applicant
T3	Construction Traffic Management	All construction deliveries would be undertaken at appropriate times (to be discussed and agreed with the relevant roads authorities and police) with the aim to minimise the effect on the local road network. It is likely that the abnormal load convoys would travel in the early morning periods, before peak times while general construction traffic would generally avoid the morning and evening peak periods.	Technical Appendix 13.1: 8.4	Contractor / Applicant
T4		A site specific Construction Traffic Management Plan (CTMP) would be prepared and agreed with THC and Transport Scotland prior to construction commencing. Technical Appendix 13.1: Transport Assessment identifies high-level proposals for managing the effects of vehicles associated with the construction phase of the Proposed Development that would be incorporated into the CTMP. The CTMP would be a working document that would evolve during the construction period.	3.2.4, 13.8, Technical Appendix 13.1	Applicant / Contractor
T5	Damage to Road Infrastructure	Video footage of the pre-construction phase condition of the AIL access route and the construction vehicles route would be recorded to provide a baseline of the state of the road prior to any construction work commencing. This baseline will allow identification of any change in the road	13.8.4,	Applicant / Contractor

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
		condition during the construction stage of the Proposed Development. Any necessary repairs would be coordinated with THC and any damage caused by traffic associated with the Proposed Development during the construction period that would be hazardous to public traffic would be repaired as soon as possible.	Technical Appendix 13.1: 8.7	
T6		Damage to road infrastructure caused directly by construction traffic would be made good and street furniture that is removed on a temporary basis would be fully reinstated.	13.8.5, Technical Appendix 13.1: 8.8	Contractor
T7		There would be a daily road edge review and debris and mud would be removed from the carriageway using an on-site road sweeper to keep the road clean and safe.	13.8.6, Technical Appendix 13.1: 8.9	Contractor
T8	Mitigation during Operation	Site entrance roads would be well maintained and monitored during the operational phase of the Proposed Development.	13.8.7, Technical Appendix 13.1: 8.10	Applicant
T9	Mitigation during Decommissioning	Like the construction phase, an Abnormal Load Traffic Management Plan and Construction Traffic Management Plan will be prepared for the decommissioning phase.	13.8.8, Technical Appendix 13.1: 8.11	Applicant / Contractor
Mitigation for Socio-economics, Recreation and Tourism (See Chapter 14)				
SE1	Local Economy and Employment Opportunities	The Applicant has committed to maximise the economic opportunities for the local area and business and communities in THC area, where possible. The Applicant, as in other developments and as set out in their corporate communications, is committed to using local supply chain where feasible and their principal contractors are also encouraged to do the same.	14.8.1 – 14.8.10	Applicant
SE2	Community Benefit	As a responsible developer, the Applicant aims to maximise the benefits for local communities where possible and has committed to have a Community Fund associated with the development which will provide funding to local communities and community projects. The Applicant is also committed to supporting the Scottish Government's ambitions for shared ownership.	14.8.4	Applicant

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
Noise (See Chapter 15)				
N1	Construction Noise	To manage construction noise, the following good practice measures will be implemented through the CEMP and will be required of all contractors: • Construction activities are anticipated to be between 07.00 and 19.00 hours Mondays to Fridays, and 07:00 to 14:00 hours on Saturdays. No working activities would be planned on Sundays. In the event of works being required outwith these hours, e.g. abnormal load deliveries, commissioning works or emergency mitigation works, the Planning Authority would be notified prior to these works taking place, wherever possible. • Operation of crushing equipment located within / next to borrow pits will generally be limited to 08:00 to 18:00 hours Monday to Friday and 08:00 to 13:00 on Saturdays, with no operation on Sundays. • Deliveries of turbine components, plant and materials by HGV to site shall only take place by designated routes and within times agreed with THC; • The site contractors shall be required to employ the best practicable means of reducing noise emissions from plant, machinery and construction activities, as advocated in BS 5228; • Non-tonal and / or directional reversing alarms will be used; • Where necessary and practicable, noise from fixed plant and equipment will be contained within suitable acoustic enclosures or behind acoustic screens; • All sub-contractors appointed by the principal contractor will be formally and legally obliged, and required through contract, to comply with all environmental noise conditions; • Where practicable, night-time working will not be carried out. Local residents shall be notified in advance of any night-time construction activities likely to generate significant noise levels, e.g. turbine erection; and • Any plant and equipment normally required for operation at night (23:00 - 07:00), e.g. generators or dewatering pumps, shall be silenced or suitably shielded to ensure that the night-time lower threshold of 45dB, LAeq,night, as defined in BS5228, shall not be exceeded at the nearest NSRs.	15.8.1, Technical Appendix 3.1: 19.2.1-19.2.2 & 19.3.3	Applicant
N2	Blasting	In the event that stone is required to be extracted from borrow pits by blasting, the following process would be employed to ensure that the effects of blasting noise and vibration on nearby properties are adequately controlled:	15.8.2, Technical Appendix 3.1: 22.2.3	Contractor / Specialist

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
		• Compliance with planning conditions specifying limits to vibration resulting from blasting, restrictions on times of blasting, and a requirement for vibration monitoring; • Preparation of a Scheme of Blasting, which will be submitted to THC for approval prior to the commencement of any blasting; • Any blasting on site would only take place between the hours of 10:00 to 16:00 on Monday to Friday inclusive and 10:00 to 12:00 on Saturdays, with no blasting taking place on a Sunday unless otherwise approved in advance in writing by THC; and • Provision of information on blasting to neighbouring residents.		
N3	Operational Noise	Recommended that a planning condition is applied in the form of an ETSU-R-97 'simplified assessment' limit, limiting noise due to the Proposed Development at the nearest NSRs to 35 dB, $L_{A90,10min}$ at wind speeds at 10 m AGL of up to 10 m/s.	15.8.4-15.8.5	Applicant
N4	Post Construction Noise Monitoring	In the event that noise levels in practice are found to exceed conditioned levels. Assuming that this was identified through noise monitoring carried out at the request of THC (e.g., following a complaint about wind turbine noise), the following process would be carried out: • Calculation of the overall reduction in noise emissions required of the Proposed Development as a function of wind speeds and direction; • Identification of the available reduced noise operating modes and how the turbines' control software can implement these in relation to wind speed, direction and time of day; • Modelling of noise from the Proposed Development to identify the most efficient combination of reduced noise operating modes that would achieve the required reduction in noise emissions; • Application of the identified mitigation strategy; • Follow-up noise monitoring to verify efficacy of mitigation; and • If necessary, repetition of the above stages until compliance with conditioned noise limits is demonstrated.	15.8.6	Applicant

Ref.	Issue	Mitigation / Monitoring Measure	EIA Report Reference	Responsibility
Mitigation for Aviation (See Chapter 16)				
A1	Aviation Lighting	An appropriate infrared aviation lighting scheme, as detailed in Technical Appendix 16.1, will be discussed with the Ministry of Defence (MOD) and implemented by the Applicant by means of a planning condition, post consent. The WTGs would be 'lit' as soon as the nacelle is placed on the top of the tower during construction and throughout the operational phase of the Proposed Development.	16.8.1, 16.8.2, Technical Appendix 16.1	Applicant
Mitigation for Other Issues (See Chapter 17)				
OI1	Ice Throw	Given the remote location of the Proposed Development, the potential for ice throw to affect members of the public is likely to be extremely low. The low risk of ice throw is reduced further as turbines are fitted with vibration sensors which detect any imbalance that might be caused by icing, leading to the affected turbines being shut down automatically. In addition, public notices would be placed at access points alerting members of the public and staff accessing the site of the possible risk of ice throw under certain weather conditions.	17.5.1 – 17.5.3	Applicant
OI2	Air quality and pollution (dust)	Relevant mitigation measures for air quality and pollution control during the construction phase are captured within the site specific CEMP, as outlined in Technical Appendix 3.1.	17.4.1 – 17.4.5, 17.8.1 – 17.8.3, Technical Appendix 3.1: 5.3	Contractor

18.2 References

British Standards Institution (2017). *BS5607:2017 Code of practice for the safe use of explosives in the construction industry*.

CIRIA, (2010). *Culvert Design and Operation Guide*.

Scottish Government (2000). *Control of Blasting at Surface Mineral Working*s: Planning Advice Note (PAN) 50 Annex D.

SEPA, (2010). *Good Practice Guide for the Construction of River Crossings*.

SEPA, (2014). *Assessment of Peat Volumes, Reuse of Excavated Peat and Minimisation of Waste: Guidance*

SEPA, (2018). *Works and Maintenance in or Near water: GPP5.*

SNH, (2019). *Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation*.