

## 14 Schedule of Mitigation

### 14.1 Introduction

- 14.1.1 The Schedule of Mitigation provides a summary of good practice, mitigation measures and commitments that have been proposed throughout the Environmental Impact Assessment (EIA) Report to prevent, reduce or offset the effects of the Proposed Development on the environment.
- 14.1.2 Good practice and mitigation measures have been integral to the design evolution of the proposed development as described in **Chapter 3: Design Evolution and Alternatives**. A series of environmental and technical constraint lead design reviews were undertaken to minimise potential significant environmental impacts prior to finalising the final design of the Proposed Development. Areas which were examined in depth include landscape and visual constraints, peat, ecology and ornithological issues, sensitive habitats, cultural heritage and hydrological constraints.

### 14.2 Schedule of Commitments

- 14.2.1 The mitigation measures and best practice commitments in **Table 14.1** are those which would be applied prior to construction, during construction and during operation of the Proposed Development. A number of these measures are embedded mitigation, undertaken through good practice and to adhere to relevant legislation during all stages of the Proposed Development.

### 14.3 Overall Statement of Significance

- 14.3.1 Provided that the proposed mitigation measures are successfully implemented, the residual effects related to most environmental disciplines would not be considered significant effects in the context of the EIA regulations, with the exception of some localised landscape and visual and cultural heritage effects.
- 14.3.2 As with almost any onshore wind farm development it is recognised that the Proposed Development would give rise to some localised significant effects on landscape character and visual amenity.

- 14.3.3 The Proposed Development would result in direct and significant effects on the part of the landscape character type within which the Proposed Development is located. Indirect and significant effects would extend to approximately 5.7 km to the north east, 5 km to the east and south east, 5 km to the south and 1.6 km to the west within LCT 6 Upland Forest Moor Mosaic.
- 14.3.4 In relation to visual effects, it is accepted that the Proposed Development would be visible from several nearby properties and settlements as well as parts of the surrounding road and footpath network, local ferry routes and the islands of Gigha and Arran.
- 14.3.5 It has been assessed that there would be significant visual effects experienced at six of the 17 representative viewpoints during daylight hours and at three viewpoints during the hours of darkness.
- 14.3.6 In terms of cultural heritage, moderately significant indirect effects (significant in EIA terms) on the settings of three groups of cultural heritage assets are predicted. These predicted effects arise as a result of the visibility of the Proposed Development in the landscape surroundings of three groups of cup-marked rocks and a group of shielings. The introduction of the Proposed Development would not, however, result in a change that would cause such significant impacts on the integrity of setting as to adversely affect the cultural significance of the assets. The key contributors to the cup-marked rocks and shielings significance would be retained, and it would still be possible for any visitor to the assets to understand and appreciate these qualities.
- 14.3.7 As such, the integrity of the settings of these monument groups, and their capacity to inform and convey cultural significance, would be unhindered, and the impact of the Proposed Development would not amount to a significant adverse effect on the integrity of its setting (NPRF Policy 7 (h) ii).
- 14.3.8 Cumulative impacts upon the settings of cultural heritage assets are predicted, arising from the Proposed Development in combination with the proposed Clachaig Glen Wind Farm. These impacts would be upon cup-marked rocks at Braids and Lagloskine, and those along the Clachaig Water, with all of the latter lying within the application site of the Clachaig Glen Wind Farm. This combined cumulative impact would, however, be no greater than the effect of the Proposed Development alone: that is, of medium magnitude and moderate significance

(significant in EIA terms). This is due to the Proposed Development and Clachaig Glen being located such as to effectively form a single group on the horizon, with one development appearing to continue the line of turbines of the other. The predicted cumulative change would not be so significant as to adversely affect the integrity of the setting of the assets, and their capacity to inform and convey their cultural significance would be unhindered.

Table 15.1: Summary of Mitigation and Commitments

EIA Report Chapter	Matter/Effect requiring mitigation	Timing / Phase	Mitigation Measure
Chapter 2: Proposed Development Description	Environmental management	Construction	<p>The applicant would engage an Environmental Clerk of Works (ECOW) post consent to coordinate site surveys, monitor the construction activities and report to both the applicant and planning authorities of any relevant incidents. The ECOW will ensure compliance with the CEMP and any other environmental documentation required by planning condition. The Principal Contractor (PC) will ensure construction activities are carried out in accordance with the mitigation measures outlined in this EIA Report and any planning conditions, this will be monitored by the applicant and the ECOW.</p> <p>An outline Construction Environmental Management Plan (CEMP) is provided as <b>Technical Appendix 2.1</b>. This sets out the applicant's requirements for inclusion within a detailed CEMP and other documents including guidance and best practice for adoption during construction of the proposed development. The outline CEMP provides an overview of the following aspects of environmental management required to mitigate any potential environmental incidents during construction:</p> <ul style="list-style-type: none"> <li>• design philosophy and construction methodologies;</li> <li>• surface and ground water management;</li> <li>• water quality monitoring;</li> <li>• flood risk management;</li> <li>• private water supply management;</li> <li>• waste and resource management;</li> <li>• wastewater and water supply monitoring and control;</li> <li>• noise and vibration control;</li> <li>• dust and other emissions to air control.</li> <li>• spoil management;</li> <li>• peat slide monitoring and control;</li> <li>• oil and chemical delivery and storage;</li> <li>• temporary lighting management;</li> <li>• existing on-site utilities management;</li> <li>• post construction reinstatement;</li> <li>• construction traffic management;</li> </ul>

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			<ul style="list-style-type: none"> <li>• health and safety management;</li> <li>• public liaison provision; and</li> <li>• decommissioning and restoration methodologies.</li> </ul> <p>To ensure all mitigation measures outlined within this EIA Report are carried out on-site, contractors will be required to develop a Construction Environmental Management Plan (CEMP) which will form an overarching document for all site management requirements, typically including:</p> <ul style="list-style-type: none"> <li>• a Pollution Prevention Plan;</li> <li>• a Peat Management Plan;</li> <li>• a Construction Traffic Management Plan;</li> <li>• a Site Waste Management Plan;</li> <li>• a Borrow Pit Management Plan;</li> <li>• an Outdoor Access Management Plan; and</li> <li>• a Water Quality Monitoring Plan.</li> </ul> <p>The final CEMP would be agreed in advance with Argyll and Bute Council (ABC) in consultation with other stakeholders, prior to commencement of construction. Performance against the CEMP would be monitored by the applicant, the ECoW and PC throughout the construction period.</p>
Chapter 5: Landscape and Visual Impact Assessment	Wind turbine layout and height of wind turbines	Operation	<p>The primary mitigation adopted in relation to the Proposed Development is embedded within the design of the Proposed Development and relates to the consideration that was given to avoiding and minimising landscape and visual effects during the evolution of the Proposed Development layout.</p> <p>A design rationale has been adopted to avoid inconsistent turbine spacing, outliers or excessive overlapping turbines to minimise visual confusion and ensure a balanced / compact array from key views in the local landscape.</p> <p>Appropriate offsets from all properties and settlements, have been maintained to ensure that no property would experience an overbearing visual impact such that it would become an unattractive place to live, with no properties located within 1.8km of a proposed turbine.</p>

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	Aviation Lighting	Operation	<p>In considering the layout of other structures and ancillary features of the Proposed Development, the position of the substation, construction compound and borrow pits are located so as to minimise their influence on the surrounding area. The turbines themselves will be painted an off-white colour with a low reflectivity semi-matt finish (or similar as agreed with Argyll and Bute Council).</p> <p>Mitigation of visible turbine aviation lighting has been designed into the scheme by adopting a reduced visible aviation lighting scheme where only a limited number of turbines are lit (T3, T6, T8 and T9). Visibility sensors would be installed on relevant turbines to measure the prevailing atmospheric conditions and visibility range. Should atmospheric conditions mean that visibility from the turbines within the site is greater than 5 km from the Proposed Development, CAA policy permits lights to operate in a lower intensity mode, being a minimum of 10% of their capable illumination. Therefore, the 2,000 cd steady state lights would operate at 200 cd. However, if visibility is restricted to 5 km or less, the lights would operate at 2,000 cd.</p> <p>Additionally, the inherent directional intensity of 2,000 cd lights can be used to reduce vertical downwards lighting impacts at elevations less than -1° degree vertical angle from the horizontal plane from the aviation light. By ensuring the lights installed comply with the International Civil Aviation Organization (ICAO) recommendations, it is possible to attenuate the vertical downwards light to a level that reduces the visual impact from receptors at ground levels below the lights. Implementing the ICAO recommendations, at -1 degrees the aviation lights should only be 1,125 cd and at -10 degrees should only be 75cd, when visibility is greater than 5 km.</p> <p>In order to further mitigate the visual impact of aviation lighting, a condition is proposed in the Aviation chapter to allow for the implementation of Aircraft Detection Lighting System (ADLS) which would result in the lighting being activated only when an aircraft is in the vicinity.</p>
Chapter 6: Cultural Heritage & Archaeology	Protection of on-site assets	Construction	A Construction Environmental Management Plan (CEMP) would be produced post consent that would address predicted effects on cultural heritage. Mitigation proposals would include:

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			<ul style="list-style-type: none"> <li>• Post-felling surveys along the route of proposed access tracks and at turbine locations for the purpose of identifying any currently unknown heritage assets that may survive within the commercial forestry area;</li> <li>• Fencing off of known assets in proximity to working areas; and</li> <li>• Archaeological monitoring (watching briefs) during the construction phase.</li> </ul> <p>A marker cairn (26) lies in close proximity to the proposed location of Turbine 3 and a commemorative stone (30) lies in close proximity to a proposed borrow pit search area. These assets could be subject to accidental adverse impacts resulting from construction activities and will be fenced off or visibly marked out to signal their presence to construction workers.</p>
Chapter 7: Ecology	General	Construction	<p>The applicant has committed to the production of a CEMP to the satisfaction of NatureScot (NS) and other relevant stakeholders, before construction commences, and would follow Windfarm Good Construction Guidance, Scottish Renewables et al (2019). An outline CEMP is included within <b>Technical Appendix 2.1</b>.</p> <p>A Species Protection Plan (SPP) will be required to ensure compliance with the Wildlife and Countryside Act (a) to avoid any impacts to species specially protected under Schedule 5 of that Act and (b) to avoid any damage to active setts/holts/hibernacula. A draft Species Protection Plan is included within <b>Technical Appendix 7.5</b>. This will include employment of an Ecological Clerk of Works (ECoW) to monitor compliance. The SPP would be agreed in writing with ABC, in consultation with relevant stakeholders, prior to the commencement of development.</p>
	Habitat Loss		<p>Given the predicted habitat losses (including blanket bog (M17a/b, M19a), wet heath (M15b) and wet modified bog (M19a)), a Biodiversity Enhancement Management Plan (BEMP) will be implemented to deliver a net gain in peatland habitat. A draft outline BEMP is included in <b>Technical Appendix 7.6</b>. The BEMP will deliver benefits to the peatland habitats). It will include enhancement of at least 17.6 ha. of peatland.</p>

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	Protected Species	Pre-Construction	Otters were present along most of the watercourses, and badgers were also found during the baseline surveys. It is also possible that other protected species such as red squirrel, pine marten and water vole could move into the potential impact zone of the Proposed Development in the future. Further surveys for these species will therefore be undertaken immediately prior to construction. If any were found, then appropriate mitigation would be implemented and/or licence sought from NatureScot (as set out in the Species Protection Plan in <b>Technical Appendix 7.5</b> ).
	Fish	Pre-Construction	Potential impacts on fisheries will be mitigated by using best practice protocols to address potential fish access issues, silt management and pollution risks (as set out in the CEMP). This would include ensuring that stream crossings allow for fish passage in both upstream and downstream directions.
Chapter 8: Ornithology	Birds	Pre-construction / Construction	<p>The applicant has committed to the production of a CEMP to the satisfaction of NS and other relevant stakeholders, before construction commences, and would follow Windfarm Good Construction Guidance, Scottish Renewables et al. (2019). An outline CEMP is included as Technical Appendix 2.1. An Environmental Clerk of Works (ECoW) will be appointed to monitor the implementation of the CEMP, the Breeding Bird Protection Plan (BBPP).</p> <p>A BBPP will be required to ensure compliance with the Wildlife and Countryside Act (a) to avoid any disturbance to species specially protected under Schedule 1 of that Act and (b) to avoid any damage to active nests. A draft BBPP is included within <b>Technical Appendix 8.6</b>. The final BBPP would be agreed in writing with ABC, in consultation with relevant stakeholders, prior to the commencement of development. Implementation of the BBPP would be monitored by the ECoW.</p> <p>To avoid any disturbance to lekking black grouse, no construction works will take place before 09:00 within 750m m of any lek sites during April and May (as requested by NS during the scoping process).</p>



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			<p>To avoid disturbance to feeding Greenland white-fronted geese, no construction works for the site access track will take place to the west of the A83 during October - March.</p> <p>Several species specially protected from disturbance during breeding under Schedule 1 of the Wildlife and Countryside Act were recorded during the surveys, including hen harrier, merlin and common crossbill. It will be essential to ensure that no Schedule 1 species are disturbed during the breeding season, particularly during the construction phase, therefore, a BBPP will be developed and implemented. Further surveys for red-throated diver, golden eagle, hen harrier, peregrine, merlin and common crossbill and any other Schedule 1 species will be undertaken to inform the BBPP at fortnightly intervals through the breeding season (March-August) during the construction period. If any nesting Schedule 1 birds were found, then potentially disturbing activities would be suspended for the breeding season within an appropriate zone (dependent on the location of the birds and the species involved, to be agreed with NS and ABC and following Goodship and Furness 2022), and in line with Forestry Commission Scotland guidance. The BBPP will also include measures to ensure the protection of all other nesting birds.</p> <p>Where works affecting habitats that could be used by nesting birds take place between March and August (inclusive), they will only be carried out following an on-site check for nesting birds by an experienced ecologist. If this indicates that no nesting birds are likely to be harmed by the works, then the works will proceed. If nesting birds are found to be present, work will not take place in that area until the adult birds and young have left the nest. A protection zone will be clearly marked around the nest site to prevent accidental disturbance or damage.</p>
	Birds	Operational	No specific ornithological mitigation is required for the operational phase of the Proposed Development, as no significant operational effects were identified in the assessment.
	Biodiversity Gain		Biodiversity Enhancement Management Plan (BEMP)

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			<p>The BEMP will deliver measures to offset habitat loss, including for the breeding black grouse on site (given the potential for displacement from the Proposed Development). This will deliver the biodiversity gain required under NPF4. These measures will include:</p> <ul style="list-style-type: none"> <li>• Low-density woodland edge planting for black grouse;</li> <li>• Nesting raft provision for red-throated divers;</li> <li>• Peatland restoration; and</li> <li>• Enhanced monitoring of Greenland white-fronted geese.</li> </ul> <p>Further details are given in <b>Technical Appendix 7.6</b>.</p>
Chapter 9: Geology, Hydrology and Hydrogeology	Design Iterations	Embedded mitigation	The Proposed Development has undergone extensive design iterations and evolution in response to the constraints identified as part of the baseline studies and field studies so as to avoid and/or minimise potential effects on receptors where possible, as outlined in <b>Chapter 3: Design Evolution and Alternatives</b> .
	Peat Occurrence and Avoidance	Embedded mitigation	The potential presence of peat within the site formed a key consideration in the design of the Proposed Development. Informed by the extensive programme of peat probing undertaken across the site, typically the design has avoided areas of deeper peat (>1 m) and where possible limited development to areas of peat less than 1 m or where peat is absent.
	Buffer to Watercourses	Embedded mitigation	In accordance with wind farm construction best practice guidelines and SEPA consultation advice, a 50m buffer has been applied to watercourses (as shown on OS 1:25:000 mapping) where technically feasible. The design has strived to minimise the number of locations where infrastructure does encroach within the buffer. The layout of the access tracks was also designed to minimise the requirement for additional watercourse crossings and existing crossings and tracks have been used where technically feasible. The majority of the Proposed Development is located outside of this buffer (see <b>Figure 9.1</b> ) with the exceptions of parts of the existing access track which are scheduled to be upgraded as part of the development.
	Groundwater Dependant Habitats	Embedded mitigation	Measures, such as permeable access tracks and regular cross track drains, have been proposed to safeguard existing water flow paths and maintain existing water

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			<p>quality. It is considered therefore that the water dependent habitats identified by the NVC mapping can be sustained. This will be confirmed, in accordance with good practice, by the Ecological / Environmental Clerk of Works (ECoW) at the time of the construction who will ensure existing surface water flow paths and water flushes are maintained.</p>
	<p>General Measures</p>	<p>Construction</p>	<p>As a principle, preventing the release of any pollution/sediment is preferable to dealing with the consequences of any release.</p> <p>Prior to construction, a site-specific drainage plan will be produced. This will consider any existing local drainage which may not be mapped and incorporate any site-specific mitigation measures identified during the assessment.</p> <p>Measures would be included in the final CEMP for dealing with pollution/sedimentation/flood risk incidents and would be developed prior to construction. This would be adhered to should any incident occur, reducing the effect as far as practicable.</p> <p>The final CEMP will contain details on the location of spill kits, will identify ‘hotspots’ where pollution may be more likely to originate from; provide details to site personnel on how to identify the source of any spill; and state procedures to be adopted in the case of a spill event. A specialist spill response contractor will be identified to deal with any major environment incidents.</p> <p>A wet weather protocol will be developed. This will detail the procedures to be adopted by all staff during periods of heavy rainfall. Tool box talks will be given to engineering /construction /supervising personnel.</p> <p>Roles will be assigned to site staff and the inspection and maintenance regimes of sediment and runoff control measures will be adopted during these periods. In extreme cases, this protocol will dictate that work onsite may have to be temporarily suspended until weather/ground conditions allow.</p>

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	Ecology	Construction	<p>To ensure all reasonable precautions are taken to avoid negative effects on the water environment, a suitably qualified ECoW will be appointed prior to the commencement of construction to advise the Applicant and the Principal Contractor on all ecological and hydrological matters. The ECoW will be required to be present on-site during the construction phase and will carry out monitoring of works and briefings with regards to any ecological and hydrological sensitivities on the site to the relevant staff of the Principal Contractor and subcontractors.</p> <p>With respect to the water environment, the ECoW will also have responsibility to ensure water flow paths and quality to water dependant habitat are sustained during all phases of the Proposed Development.</p>
	Carbon Rich Soils and Peat	Construction	<p>The peat depth probing data has been used to accurately determine the volume of peat which will be disturbed by the Proposed Development. This data has been used to prepare a site-specific PMP (see <b>Technical Appendix 9.2</b>) which details the volume of acrotelmic and catotelmic peat which will be disturbed and how this will be safeguarded and reused on site. Further, the condition of the peat, and areas of peat that would potentially benefit from restoration have been identified and are discussed in Chapter 7 and <b>Technical Appendix 7.6 (BEMP)</b>.</p> <p>As shown in <b>Technical Appendix 9.1</b> Peat Landslide Hazard Risk Assessment (PLHRA) and <b>Technical Appendix 9.2</b> Peat Management Plan (PMP) measures have been proposed to ensure the stability of peat and carbon rich soils and that peat and soils that will be disturbed by the Proposed Development can be safeguarded and beneficially re-used on site.</p>
	Peat Management	Construction	<p>A detailed review of the distribution and depth of peat at the site is contained in <b>Technical Appendix 9.2</b>. The site design has largely avoided areas of deep peat and where peat will be encountered by the Proposed Development it can be readily managed and accommodated within the site layout without significant environmental impact. No surplus peat will be generated and the volumes of peat / peaty soil generated from the proposed excavations will be used to reinstate track verges, turbine bases, crane hardstandings and restoration of onsite borrow pits.</p>

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	Peat Landslide Hazard	Construction	<p>The site specific PLHRA (<b>Technical Appendix 9.1</b>) confirms, regarding peat stability, that there are very few areas of peat instability risk across the Proposed Development and the hazard impact assessment concluded that, with the employment of appropriate mitigation measures, all of the areas of peat instability can be considered as an insignificant risk.</p> <p>A Design and Geotechnical Risk Register will be compiled to include risks relating to peat instability, as this will be beneficial to both the developer and the Contractor in identifying potential risks that may be involved during construction.</p> <p>Good construction practice and methodologies to prevent peat instability within areas that contain peat deposits are identified in Technical Appendix 9.1. <b>These include:</b></p> <ul style="list-style-type: none"> <li>• measures to ensure a well-maintained drainage system, to include the identification and demarcation of zones of sensitive drainage or hydrology in areas of construction;</li> <li>• minimisation of ‘undercutting’ of peat slopes, but where this is necessary, a more detailed assessment of the area of concern will be required;</li> <li>• careful micrositing of turbine bases, crane hardstandings and access track alignments to minimise effects on the prevailing surface and sub-surface hydrology;</li> <li>• raising peat stability awareness for construction staff by incorporating the issue into the site induction (e.g. peat instability indicators and good practice);</li> <li>• introducing a ‘Peat Hazard Emergency Plan’ to provide instructions for site staff in the event of a peat slide or discovery of peat instability indicators;</li> <li>• developing methodologies to ensure that degradation and erosion of exposed peat deposits does not occur as the break-up of the peat top mat has significant implications for the morphology, and thus hydrology, of the peat (e.g. minimisation of off-track plant movements within areas of peat);</li> <li>• developing robust drainage systems that will require minimal maintenance; and</li> </ul>

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			<ul style="list-style-type: none"> <li>developing drainage systems that will not create areas of concentrated flow or cause over/under-saturation of peat habitats.</li> </ul>
	Water Quality Monitoring	Pre -construction and operation	<p>Water quality monitoring before and during the construction phase will be undertaken for the surface water catchments that drain from the site to ensure that none of the tributaries of the main channels are carrying pollutants or suspended solids.</p> <p>Monitoring will be carried out at a specified frequency (depending upon the construction phase) on these catchments.</p> <p>Monitoring will continue throughout the construction phase and immediately post construction. Monitoring will be used to allow a rapid response to any pollution incident as well as to assess the impact of good practice or remedial measures. Monitoring frequency will increase during the construction phase if remedial measures to improve water quality were implemented. Water quality monitoring plans will be developed during detailed design. Scottish Water, SEPA, ABC, NatureScot, AFT and ADSFB will be consulted on the plans and which will be contained within the final CEMP.</p> <p>It is also proposed that the licenced abstraction that serves Killean Estate, as discussed in <b>Technical Appendix 9.4</b>, is included as part of the monitoring programme.</p> <p>The performance of the good practice measures will be kept under constant review by the water monitoring schedule, based on a comparison of data taken during construction with a baseline data set, sampled prior to the construction period.</p>
	Pollution Risk	Construction	<p>Good practice measures in relation to pollution prevention will include the following:</p> <ul style="list-style-type: none"> <li>refuelling will take place at least 50m from watercourses and where there is no risk that oil from a spill could directly enter the water environment;</li> </ul>

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			<ul style="list-style-type: none"> <li>• foul water generated on-site will be managed in accordance with best practice and be drained to a sealed tank and routinely removed from site;</li> <li>• a vehicle management plan and speed limit will be strictly enforced onsite to minimise the potential for accidents to occur;</li> <li>• drip trays will be placed under stationary vehicles which could potentially leak fuel/oils;</li> <li>• areas will be designated for washout of vehicles which are a minimum distance of 50m from a watercourse;</li> <li>• washout water will also be stored in the washout area before being treated and disposed of;</li> <li>• if any water is contaminated with silt or chemicals, runoff will not enter a watercourse directly or indirectly prior to treatment;</li> <li>• water will be prevented as far as possible, from entering excavations;</li> <li>• procedures will be adhered to for storage of fuels and other potentially contaminative materials in line with the CAR, to minimise the potential for accidental spillage; and</li> <li>• a plan for dealing with spillage incidents will be designed prior to construction, and this will be adhered to should any incident occur, reducing the effect as far as practicable. This will be included in the final CEMP.</li> </ul> <p>Site investigation (e.g., trial pitting and/or boreholes) will be undertaken prior to any construction works where excavation will be required to establish the wind farm and it will inform detailed design and construction methods to ensure pollution risk is further considered prior to construction. These methods will be specified in the final CEMP.</p>
	Erosion and Sedimentation	Construction	Good practice measures for the management or erosion and sedimentation will include the following:

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			<ul style="list-style-type: none"> <li>• all stockpiled materials will be located out with a 50m buffer from watercourses, including on up gradient sides of tracks and battered to limit instability and erosion;</li> <li>• stockpiled material will either be seeded or appropriately covered, minimising the area of exposed bare ground;</li> <li>• monitoring of stockpiles/excavation areas during and after significant rainfall events;</li> <li>• water will be prevented as far as possible, from entering excavations through the use of appropriate cut-off drainage;</li> <li>• where the above is not possible, water that enters excavations will pass through a number of settlement lagoons and silt/sediment traps to remove silt prior to indirect discharge into the surrounding drainage system. Detailed assessment of ground conditions will be required to identify locations where settlement lagoons will be feasible;</li> <li>• clean and dirty water on-site will be separated and dirty water will be filtered before entering the water environment;</li> <li>• if the material is stockpiled on a slope, silt fences will be located at the toe of the slope to reduce sediment transport;</li> <li>• the amount of ground exposed, and time period during which it is exposed, will be kept to a minimum and appropriate drainage will be in place to prevent surface water entering deep excavations, specifically borrow pit excavations;</li> <li>• a design of drainage systems and associated measures to minimise sedimentation into natural watercourses will be developed - this may include silt traps, check dams and/or diffuse drainage;</li> <li>• silt/sediment traps, single size aggregate, geotextiles or straw bales will be used to filter any coarse material and prevent increased levels of sediment. Further to this, activities involving the movement or use of fine sediment will avoid periods of heavy rainfall where possible; and</li> <li>• construction personnel and the Principal Contractor will carry out regular visual inspections of watercourses to check for suspended solids in watercourses downstream of work areas.</li> </ul>



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	Fluvial Flood Risk	Construction	<p>Sustainable Drainage Systems (SuDS) shall be incorporated as part of the Proposed Development.</p> <p>SuDS techniques aim to mimic pre-development runoff conditions and balance or throttle flows to the rate of runoff that might have been experienced at site prior to development. Good practice in relation to the management of surface water runoff rates and volumes and potential for localised fluvial flood risk will include the following:</p> <ul style="list-style-type: none"> <li>• drainage systems will be designed to ensure that any sediment, pollutants or foreign materials which may cause blockages are removed before water is discharged into a watercourse;</li> <li>• on-site drainage will be subject to routine checks to ensure that there is no build-up of sediment or foreign materials which may reduce the efficiency of the original drainage design causing localised flooding;</li> <li>• appropriate drainage will attenuate runoff rates and reduce runoff volumes to ensure minimal effect upon flood risk;</li> <li>• where necessary, check dams will be used within cable trenches in order to prevent trenches developing into preferential flow pathways and trenches shall be backfilled with retained excavated material; and</li> <li>• as per good practice for pollution and sediment management, prior to construction, site-specific drainage plans will be developed and construction personnel made familiar with the implementation of these.</li> </ul>
	Water Abstractions	Construction	<p>For any water for construction activities good practice that will be followed in addition to adherence to the CAR regulations includes:</p> <ul style="list-style-type: none"> <li>• water use will be planned so as to minimise abstraction volumes;</li> <li>• water will be re-used where possible;</li> <li>• abstraction volumes will be recorded; and</li> <li>• abstraction rates and volumes will be agreed with SEPA to prevent significant water depletion in any third party water source.</li> </ul>

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	Watercourse Crossings	Construction	<p>Two new watercourse crossings and 14 existing crossings which will be upgraded as part of the development are required for the Proposed Development as detailed within <b>Technical Appendix 9.3</b> and shown on <b>Figure 9.1</b>.</p> <p>The crossings will be designed to pass the 200-yr flood event plus an allowance for climate change and their design and construction details will be agreed with SEPA and ABC as part of the final CEMP.</p>
	Construction Within Watercourse Buffer	Construction	<p>It is recognised during construction within the watercourse buffer there is a need for increased monitoring and management of the works. Specific drainage management plans, methods statements, monitoring, and pollution incident response plans relevant to the works at these locations are required and need to be agreed with statutory consultees, including SEPA.</p> <p>Examples of the additional safeguards that will be deployed at these locations and included in the management plans, subject to agreement with consultees, include, but are not limited to the following:</p> <ul style="list-style-type: none"> <li>• increased induction and training for staff highlighting sensitivities;</li> <li>• a wet weather working protocol and provision to cease works during prolonged rainfall or periods of high runoff (pluvial or fluvial);</li> <li>• reduction in extent of working area to minimise the potential to disturb ground;</li> <li>• additional passive water quality control measures, such as temporary water diversion ditches, silt fences and silt traps to control and treat runoff from working areas;</li> <li>• daily inspection of works and watercourses and full-time supervision of construction and restoration and works;</li> <li>• deployment of real-time water quality monitoring telemetry with predetermined water quality trigger levels based on baseline water quality data (e.g. for pH, dissolved oxygen and electrical conductivity); and</li> <li>• documentation that clearly identifies responsibilities and actions and contact details should a pollution event be recorded.</li> </ul>

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	Geotechnical Risk Register	Construction/Operation	As detailed in <b>Technical Appendix 9.1</b> , it is proposed that a geotechnical risk register is maintained during the construction and post-construction phase of the Proposed Development. It is expected that this will be maintained by the Developer, and secured by an appropriately worded predevelopment condition of consent.
	Drainage	Operation	As detailed in <b>Technical Appendix 9.2</b> , during and following construction the drainage measures deployed at the site (temporary and permanent) will be subject to routine inspection by the dedicated site ECoW and the Developer. This will be specified in a site-specific CEMP and will be secured by an appropriately worded predevelopment condition of consent
Chapter 10: Transport & Traffic	Construction Traffic	Construction	<p>The assessment does not predict any significant effects, and as a result no mitigation is required to address any predicted environmental effects associated with the increased traffic generated during the worst-case month of the construction programme. However, industry standard ‘good practice’ measures will be implemented to reduce traffic and transport effects during construction in the form of a Construction Traffic Management Plan (CTMP).</p> <p>The CTMP will include the following measures:</p> <ul style="list-style-type: none"> <li>• development of a logistics plan highlighting access points, loading bays, welfare and storage on-site;</li> <li>• approved haul routes to/from the site, and protocols to ensure HGVs adhere to these routes;</li> <li>• provision of a site induction pack to be given to all workers on-site, containing information of delivery routes, any route restrictions and maximum load capacities;</li> <li>• temporary construction signage to be erected along identified construction routes;</li> <li>• a construction traffic speed limit through sensitive areas along haulage routes;</li> <li>• on-site wheel washing facilities;</li> </ul>

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			<ul style="list-style-type: none"> <li>• a construction material “lay down” area to allow for a staggered delivery schedule, and avoiding peak and/or unsociable hours; and</li> <li>• roads to be maintained in a clean and safe condition, with wheel washing facilities made available on-site.</li> </ul>
	Abnormal Loads	Construction	<p>Abnormal loads are generally very large, slow-moving vehicles and the potential for conflict with other road users is greater when undertaking turning manoeuvres, including at the proposed turning area off the A83 (T) at the site entrance, and travelling along narrow sections of road. A convoy escort will be required along the route identified in the Abnormal Load Route Assessment (ALRA) (<b>Technical Appendix 10.1</b>) document produced alongside this EIA. Measures relating to the movement of abnormal loads may include:</p> <ul style="list-style-type: none"> <li>• advance warning signs on the affected road network;</li> <li>• an advance escort may be required to warn oncoming vehicles ahead of the abnormal load vehicle;</li> <li>• abnormal load convoys should normally be no more than three HGVs long, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic if permitted; and</li> <li>• the times in which deliveries are scheduled should be agreed with Police Scotland and TS, and avoid typical peak periods of traffic on the surrounding road network.</li> </ul>
Chapter 11: Noise	Construction noise	Construction	<p>For all activities, measures would be taken to reduce noise levels with due regard to practicality and cost as per the concept of ‘best practicable means’ as defined in Section 72 of the Control of Pollution Act 1974.</p> <p>The following noise mitigation options could be implemented where appropriate:</p> <ul style="list-style-type: none"> <li>• Consideration would be given to noise emissions when selecting plant and equipment to be used on-site;</li> <li>• All equipment should be maintained in good working order and fitted with the appropriate silencers, mufflers or acoustic covers where applicable;</li> <li>• Stationary noise sources would be sited as far away as reasonably possible from residential properties and where necessary and appropriate, acoustic barriers could be used to screen them;</li> </ul>

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			<ul style="list-style-type: none"> <li>• The movement of vehicles to and from the Proposed Development would be controlled and employees instructed to ensure compliance with the noise control measures adopted; and</li> <li>• Site operations would be limited to 07:00-19:00 Monday to Friday and 07:00 - 13:00 on Saturdays, except during wind turbine /erection and commissioning or during periods of emergency work.</li> </ul> <p>There are many strategies to reduce construction noise by the limitation of activities that would result in predicted noise levels being lower than the specified targets. Any such measures should be considered adequate, and the mitigation adopted should not be limited to the proposed measures.</p>
	Construction Blasting	Construction	<p>With specific regard to blasting, it is proposed that the following mitigation measures are implemented:</p> <ul style="list-style-type: none"> <li>• Good practice on blasting, as recommended by Planning Advice Note (PAN) 50 ‘Controlling the environmental effects of surface mineral workings’ shall be followed;</li> <li>• The vibration and air overpressure reduction methods outlined in Section 8.6.9.2 of BS 5228-2:2009 shall be adhered to where appropriate;</li> <li>• Advance warning shall be given to nearby residents;</li> <li>• Blasting should only occur between the hours of 08:00-18:00 on Mondays-Fridays or between the hours of 08:00-13:00 on Saturdays; and</li> <li>• No more than three blasts per day should occur.</li> </ul> <p>Depending upon the charge sizes required it may be prudent to perform trial blasts with smaller amounts of explosive and measure vibration magnitudes at various distances to more accurately determine how vibration propagates at the Proposed Development.</p> <p>As with operational noise, if planning permission is granted for the proposed wind farm, planning conditions can be proposed so that appropriate noise mitigation measures and construction practices are included within a CEMP.</p>

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	Operational noise	Operation	<p>The wind turbine layout was designed to ensure that there is an adequate separation distance between any of the proposed turbines and the nearest residential property.</p> <p>Due to this consideration of the noise impacts in the design of the Proposed Development, by embedding mitigation measures in the wind turbine layout, when a conservative candidate machine is modelled this meets the noise limits are derived in accordance with ETSU-R-97.</p> <p>If planning permission is granted for the Proposed Development, planning conditions can be proposed to provide a degree of protection to nearby residents in the form of limits relating to noise level and tonality.</p> <p><b>Technical Appendix 11.6</b> contains a set of draft planning conditions relating to noise that the Applicant considers appropriate.</p>
Chapter 12: Aviation, Radar and Defence	NERL Lowther Hill Radar	Operation	NERL has identified that a Large Blanking Radar Mitigation Scheme (RMS) will remove or reduce the impact on NERL Lowther Hill Radar. The RMS will be agreed prior to the Proposed Development becoming fully operational.
	Aviation Lighting	Operation	A reduced visible aviation lighting scheme has been agreed with the CAA. The reduced scheme means that not every perimeter wind turbine needs to be lit and no tower lights are required provided an infrared scheme is agreed with the MOD. An infrared lighting scheme will be agreed with the DIO prior to the Proposed Development becoming fully operational.