

**CLOICH FOREST WIND FARM**  
**EIA Report – Volume 1 – EIA Report Text**

**Chapter 18**  
**Summary of Mitigation**



## 18 SUMMARY OF MITIGATION

This Chapter of the Environmental Impact Assessment Report (EIA Report) provides a summary of mitigation measures that have been proposed within the EIA Report to prevent, reduce or offset the effects associated with the Cloich Forest Wind Farm ('the Development').

Embedded mitigation measures have been integral to the design evolution of the Development as outlined in **Chapter 2: Site Selection and Design** and **Chapter 3: Project Description**. The overall aim of the design strategy was to create a wind farm with a cohesive design that relates to the surrounding landscape whilst taking account of the environmental characteristics of the area in which the Development is located ('the Site'), for example priority habitats and key ornithological species, peat and hydrological resources.

Table 18.1 presents a schedule of mitigation measures for the Development listed according to the relevant environmental topic, which would be applied during the construction and operation of the Development.

**Table 18.1: Summary of Mitigation**

Chapter	Proposed Mitigation	Timing
<p><b>Chapter 3: Project Description</b></p>	<p><b>Micro-siting</b> A micro-siting allowance of 50 metres (m) in all directions is proposed for turbines and associated infrastructure. This is to allow for a degree of flexibility should unsuitable ground conditions be encountered or in the event of environmental constraints being identified during pre-construction surveys. Any changes will be subject to approval of an Ecological Clerk of Works (ECow) with other specialist environmental advice (e.g., hydrology, archaeology, etc.) as required.</p>	Pre-Construction and Construction
	<p><b>Construction Method Statements (CMSs)</b> The construction phase will be controlled via a series of detailed CMSs which will be prepared by a civil engineering contractor appointed by the Applicant, who will have overall responsibility for environmental management on the construction site.</p>	Pre-Construction and Construction
	<p><b>Construction Environmental Management Plan (CEMP)</b> The CEMP, produced prior to construction, will be the overarching live document which combines the principles of all other management plans and environmental plans outlined within this EIA Report and would support the CMSs. The CEMP will typically be supported by, but not limited to, the following documents which apply to the construction process:</p> <ul style="list-style-type: none"> <li>• Water Construction Environmental Management Plan (WCEMP);</li> <li>• Peat Management Plan;</li> <li>• Pollution Prevention Plan;</li> <li>• Traffic Management Plan;</li> <li>• Site Waste Management Plan (SWMP); and</li> <li>• Restoration Plan.</li> </ul>	Pre-Construction and Construction
	<p><b>Health and Safety</b> Health and safety issues during construction and decommissioning fall under the Construction (Design and Management) (CDM) Regulations 2015<sup>1</sup>. A Construction Phase Plan (Health and Safety Plan) will be prepared by the Construction Project Manager with records provided to the Applicant during the works to enable the Health and Safety File to be completed.</p>	Pre-Construction and Construction

<sup>1</sup> Health and Safety Executive (2015) Construction Design and Management Regulations 2015 [Online] Available at: <http://www.hse.gov.uk/construction/cdm/2015/index.htm> (Accessed 23/06/2021).

Chapter	Proposed Mitigation	Timing
<b>Chapter 5: Landscape and Visual Impact Assessment (LVIA)</b>	<b>Embedded Mitigation</b> Embedded Mitigation includes the design changes that been implemented during the development of the scheme, these are set out in detail in <b>Chapter 2: Site Selection &amp; Design</b> . All mitigation for landscape and visual effects is embedded within the final design for the Development.	Pre-Submission
	<b>Construction Environmental Management Plan (CEMP)</b> Measures such as arrangements for vegetation and soil removal, storage and replacement and the restoration of disturbed areas after construction will be detailed in the CEMP produced following consent and prior to construction, which will also include reference to CMSs.	Pre-Construction and Construction
<b>Chapter 6: Archaeology and Cultural Heritage</b>	<b>Embedded Mitigation</b> Embedded Mitigation includes the design changes that been implemented during the development of the scheme, these are set out in detail in <b>Chapter 2: Site Selection &amp; Design</b> . All mitigation for archaeological and cultural heritage effects is embedded within the final design for the Development.	Pre-Submission
	<b>Pre-Construction Surveys &amp; Tool Box Talks</b> Archaeological features (SM2756 and HER51667) would be subject to a full survey of prior to construction; tool box talks highlighting the archaeology within the Development Site; fencing (if required); and a watching brief during construction in the vicinity of SM2756.	Pre-Construction & Construction
	<b>Enhancement Mitigation</b> SM2756 Kilrubie Hill Ring Enclosures and the top of Whaup Law (SM2755) would be felled and not replanted as part of the Development's forestry proposals in order to end the planting disturbance to SM2756 and to open up viewsheds from Whaup Law Cairn (SM2755) which currently do not exist due to surrounding forestry.	Pre-Construction, Construction, and Operation

Chapter	Proposed Mitigation	Timing
	<p><b>Enhancement Mitigation – Light Detection and Ranging (LIDAR)</b></p> <p>LIDAR survey has been a successful tool for identifying archaeological features within forestry plantation and is recommended here.</p> <p>This LIDAR survey would be carried out over the most important and sensitive areas of historic landscape that would be affected by the Development, where appropriate permissions can be obtained. This would include the Meldon Valley, the valley of Flemington Burn and the Cademuir hillforts.</p> <p>In selected areas, the LIDAR would be collected at ultra-high resolution (to at least c. 0.25 m) alongside detailed vertical aerial photographs. These areas would include:</p> <ul style="list-style-type: none"> <li>• White Meldon and Black Meldon;</li> <li>• Upper and Lower Cademuir hillforts; and</li> <li>• Whiteside Hill hillfort.</li> </ul> <p>The full details of the specification for this survey would be resolved in discussions with Historic Scotland, the Council Archaeological Officer and Forestry Scotland senior archaeologist.</p>	Pre-Construction & Construction
Chapter 7: Ecology	<p><b>Embedded Mitigation – Environmental Clerk of Works (ECoW)</b></p> <p>A suitably qualified and experienced Environmental Clerk of Works (ECoW) will be appointed to provide appropriate ecological and environmental advice during construction, including the monitoring of compliance with conservation legislation, the recommendations of this EIA Report and any subsequent planning conditions.</p>	Pre-Construction and Construction
	<p><b>Embedded Mitigation – Pre-construction Survey for Protected Species</b></p> <p>Pre-construction Surveys for protected species, such as otter and badger, will be undertaken to provide up-to-date information about the distribution and abundance of the protected species identified in the baseline. The results of the surveys will inform the need for Species Protection Plans and associated mitigation and licencing requirements, all of which will be developed in line with NatureScot guidance.</p>	Pre-Construction
	<p><b>Embedded Mitigation – Bat Separation Distance</b></p> <p>To minimise the risk of bats colliding with operational turbines, the 50 m separation distance between blade tips and high-value bat habitats implemented during construction, will be maintained throughout the operational life of the Development by ensuring that tree regeneration does not encroach on the buffer.</p>	Operation

Chapter	Proposed Mitigation	Timing
	<p><b>Enhancement Mitigation - Outline Habitat Management Plan</b></p> <p>Habitat Management will be implemented in accordance with a Habitat Management Plan (HMP). A detailed HMP will be written and developed in full following consent, and in consultation with NatureScot, SBC, RSPB and the Tweed Forum, where relevant.</p> <p>Certain high-value areas (i.e., areas with broadleaved trees) will be enhanced with the provision of 15 bat boxes (i.e., three boxes on each of five trees). Exact specifications will be provided in the HMP.</p>	Pre-Construction, Construction, and Operation
<p><b>Chapter 8: Ornithology</b></p>	<p><b>Embedded Mitigation – Breeding Bird Protection Plan (BBPP)</b></p> <p>The key embedded mitigation with relevance to ornithological features is the implementation of a Breeding Bird Protection Plan (BBPP). This will be developed to detail good practice measures aimed at ensuring the safeguarding of breeding birds and legislative compliance during all phases of the Development. Proposed measures are outlined below.</p>	Pre-Construction, Construction, and Operation
	<p><b>Embedded Mitigation – Timing of Works</b></p> <p>Where possible, site clearance works will take place outside the main breeding bird season (March to August inclusive).</p>	Construction
	<p><b>Embedded Mitigation – Pre-Construction Surveys (Goshawk)</b></p> <p>Pre-construction surveys for goshawk is recommended. A pre-construction survey of areas of suitable habitat for nesting goshawk within 500 m of works will be completed ahead of any operations, by a suitably experienced and qualified Ecological Clerk of Works (ECoW), to check for active nests (or other evidence of breeding).</p>	Pre-Construction
	<p><b>Embedded Mitigation – Pre-Construction Surveys (Crossbill)</b></p> <p>Prior to any felling, precautions must be taken to avoid potential disturbance to nesting birds or destruction of active nests. A pre-construction survey of areas of suitable habitat for nesting crossbill within 150 m of works will be completed ahead of any operations, regardless of the time of year, by a suitably experienced and qualified ECoW, to check for evidence of breeding (such as active nests or territorial behaviour).</p>	Pre-Construction

Chapter	Proposed Mitigation	Timing
	<p><b>Embedded Mitigation – Pre-Construction Surveys (other breeding birds)</b> Where construction works are required during the breeding bird season (March to August inclusive), the area within 500 m of works will be surveyed ahead of any operations, by a suitably experienced and qualified ECoW, to check for active nests of all bird species.</p>	Pre-Construction
	<p><b>Embedded Mitigation – Toolbox Talk</b> A 'toolbox talk' will be delivered by a suitably experienced ECoW to ensure that all contractors working on the Development are aware of ornithological sensitivities and relevant legislation.</p>	Pre-Construction & Construction
	<p><b>Embedded Mitigation – Protection of Nesting birds</b> If any nests (or breeding territories of Schedule 1 species) are identified during pre-construction surveys, an exclusion zone around the nest/breeding territory will be established (with the distance appropriate to the species and agreed through consultation with NatureScot). No works will be permitted within the exclusion zone and no personnel or vehicles will be allowed to enter or pass through until the ECoW has confirmed that the breeding attempt has reached a natural conclusion. Where this is not feasible, NatureScot will be contacted and further mitigation measures agreed to ensure that nesting birds are not harmed and any breeding Schedule 1-listed species are not disturbed.</p>	Pre-Construction & Construction
	<p><b>Monitoring</b> It is proposed that ornithological monitoring should take place post-construction, in line with NatureScot guidance. In line with NatureScot guidance, monitoring should take place annually during construction, and after the Development becomes operational, during years 1-3, 5, 10 and 15 as a minimum, with the requirement for further surveys to be determined based on previous survey results. Goshawk nest monitoring will be undertaken in liaison with the Lothian and Borders Raptor Study Group, to determine the operational impacts on breeding success.</p>	Construction and Operation
<p><b>Chapter 9: Geology, Ground Conditions and Peat</b></p>	<p><b>Embedded Mitigation – Design</b> Design of the site layout avoiding key environmental constraints including avoidance of deepest peat (i.e., no turbines sited in peat &gt; 1 m) or limiting the impacts on deep peat where possible, as well as taking cognisance of hydrological and ecological features and associated buffers.</p>	Pre-Submission

Chapter	Proposed Mitigation	Timing
	<p><b>Embedded Mitigation – Best Practice</b> Best practice methods and works as outlined in the publication 'Good Practice during Wind Farm Construction'<sup>2</sup> will be adhered to during construction.</p>	Pre-Construction & Construction
	<p><b>Pre-Construction Surveys</b> Intrusive site investigations will be undertaken across the infrastructure areas prior to construction, particularly at turbine locations to determine the extent and nature of any peat.</p>	Pre-Construction
	<p><b>Micrositing</b> Where infrastructure associated with turbines is found to encroach on deep peat, this will be microsited (if possible) out with these areas in order to reduce the overall effect on peat disturbance, stability and loss of soils.</p>	Pre-Construction & Construction
	<p><b>Drainage</b> Maintenance of existing drainage is critical to avoid compaction of soils, therefore, all existing drainage network channels would be maintained and, where necessary, channelled below the access track construction drainage ditches on the upslope of the track.</p>	Pre-Construction & Construction
	<p><b>Peat Slide Risk Assessment</b> Slope stability monitoring will occur during pre-construction and construction phases of work, including for both peat stability and non-peat related stability.</p>	Pre-Construction & Construction
	<p><b>Outline Peat Management Plan</b> Best practice measures for managing excavated peat and peaty soils are detailed in Appendix A9.2: Outline Peat Management Plan.</p>	Pre-Construction & Construction

<sup>2</sup> Scottish Renewables et al. (2019) Good Practice during Wind Farm Construction, 4<sup>th</sup> Edition 2019 [Online]. Available at: <https://www.nature.scot/sites/default/files/2020-12/Good%20Practice%20during%20wind%20farm%20construction%20-%204th%20Ed.pdf> (Accessed 04/05/2021)

Chapter	Proposed Mitigation	Timing
<p><b>Chapter 10: Hydrology and Hydrogeology</b></p>	<p><b>Embedded Design</b></p> <p>The following mitigation measures relating to the hydrological environment are embedded into the design and construction of the Development:</p> <ul style="list-style-type: none"> <li>• 50 m watercourse buffers for construction works with the exception of watercourse crossings and access tracks; and</li> <li>• 250 m buffer from turbines bases and groundwater abstractions via boreholes has been established in accordance with LUPS-31.</li> </ul> <p>The existing network of access tracks which serve the forestry operations have been utilised, where possible, limiting the requirement for additional felling and for new watercourse crossings.</p>	<p>Pre-Submission</p>

Chapter	Proposed Mitigation	Timing
	<p><b>Embedded Design - Water Construction Environmental Management Plan (WCEMP)</b></p> <p>Construction good practice methods and works for protection of hydrological receptors are outlined in the Appendix A10.1: WCEMP. The WCEMP describes water management measures to control surface water run-off and drain hardstanding's and other structures during the construction and operation of the Development.</p> <p>Embedded measures include;</p> <ul style="list-style-type: none"> <li>• Buffer zones around receptors where no construction works are to be carried out e.g., watercourses (50 m) or private water supplies (buffer zone is dependent on type and abstraction volume of supply);</li> <li>• Appropriate material storage and maintenance;</li> <li>• Silt management including silt traps, silt fencing, sediment mats and settlement lagoons;</li> <li>• Infiltration trenches and rock stockpiles to treat run-off before discharging back to the hydrological network; and</li> <li>• Vehicle washout facilities for washing of associated vehicles.</li> <li>• Water quantity mitigation measures to prevent changes to yield include, but are not limited to;</li> <li>• Settlement lagoons to attenuate run-off from turbine foundations and tracks; and</li> <li>• Permanent swales and drainage ditches adjacent to access tracks with outlets at specified intervals to reduce the volume of water collected in a single channel and the potential for erosion.</li> </ul> <p>This will form part of a Pollution Prevention Plan (PPP) to be implemented for the Development. The PPP will set out measures to be employed to avoid or mitigate potential effects for all phases of the Development, and will also include an Incident Plan to be followed should a pollution event occur.</p>	<p>Construction and Operation</p>

Chapter	Proposed Mitigation	Timing
	<p><b>Private Water Supplies (PWS)</b> Mitigation measures are outlined in Technical Appendix A10.2: Private Water Supply Risk Assessment.</p> <p>A programme of private water supply monitoring will be undertaken at selected properties, to ensure that PWS is reinstated to baseline water quality and quantity conditions following the construction phase.</p>	<p>Pre-Construction &amp; Construction</p>

Chapter	Proposed Mitigation	Timing
<p><b>Chapter 11: Noise</b></p>	<p><b>Construction Noise Good Practice</b></p> <ul style="list-style-type: none"> <li>• Operations shall be limited to times agreed with Scottish Borders Council (the Council);</li> <li>• Deliveries of turbine components, plant and materials by HGV to site shall only take place by designated routes and within times agreed with the Council;</li> <li>• 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;</li> <li>• Where practicable, the work programme will be phased, which would help to reduce the combined effects arising from several noisy operations;</li> <li>• Where necessary and practicable, noise from fixed plant and equipment will be contained within suitable acoustic enclosures or behind acoustic screens;</li> <li>• All sub-contractors appointed by the main contractor will be formally and legally obliged, and required through contract, to comply with all environmental noise conditions and / or Construction Environmental Management Plans;</li> <li>• 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</li> <li>• 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 45 dB, LAeq, night shall not be exceeded at the nearest noise-sensitive receptors.</li> </ul> <p>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:</p> <ul style="list-style-type: none"> <li>• Compliance with planning conditions specifying limits to vibration resulting from blasting, restrictions on times of blasting, and a requirement for vibration monitoring;</li> <li>• Trial blasting, using progressively larger charge loads, to establish suitable acceptable charge; and</li> <li>• Provision of information on blasting to neighbouring residents.</li> </ul>	<p>Construction</p>

Chapter	Proposed Mitigation	Timing
<p><b>Chapter 12: Traffic and Transportation</b></p>	<p><b>Construction Traffic Management Plan</b></p> <p>A Construction Traffic Management Plan (CTMP) is proposed and will include specific mitigation measures, including:</p> <ul style="list-style-type: none"> <li>• As far as reasonably possible, deliveries should be scheduled outside of church service times;</li> <li>• Drivers of all delivery vehicles to be made aware during induction of the presence of schools, hospital and other amenities within settlements;</li> <li>• Delivery times will be scheduled to ensure that deliveries do not arrive in a convoy;</li> <li>• Timing of the deliveries will be outlined within the CTMP to ensure construction vehicles avoid potentially congested networks at peak hours; and</li> <li>• Communications with local communities should be undertaken for planned activities such as turbine deliveries and concrete delivery days (if onsite batching is not possible).</li> </ul>	<p>Pre-Construction and Construction</p>
<p><b>Chapter 13: Forestry</b></p>	<p><b>Tree Planting &amp; Compensatory Tree Planting</b></p> <p>Any tree crops permanently removed to accommodate the Development will be replanted on a like-for-like area basis either within the Site or at a suitable substitute location.</p>	<p>Construction and Operation</p>
<p><b>Chapter 14: Aviation and Radar</b></p>	<p><b>Infra-red Lighting</b></p> <p>Infra-red lighting will be installed to ensure the Development is visible to pilots of low flying aircraft.</p>	<p>Operation</p>
<p><b>Chapter 15: Socio-Economics, Land-Use, Recreation and Tourism</b></p>	<p><b>Access Management Plan</b></p> <p>Access Management Plan to be drafted and agreed with the Council prior to construction. The Access Management Plan may include a gating system operated by banksman at required locations; in addition, the Access Management Plan may include appropriate health and safety signage local route diversions (if required), and traffic management measures.</p>	<p>Construction</p>

Chapter	Proposed Mitigation	Timing
<p><b>Chapter 16: Climate Change and Carbon Balance</b></p>	<p><b>Embedded Design</b></p> <p>The design choices made as a consequence of the key constraints are considered to be mitigation which is 'embedded' in the design; the following are most relevant for the climate change impact assessment:</p> <ul style="list-style-type: none"> <li>• Development infrastructure is built to withstand strong windspeeds and to harness energy;</li> <li>• Turbine spacing is sufficient to reduce turbulence effects on turbines downwind;</li> <li>• The turbines are located to maximise energy generation while minimising environmental impacts;</li> <li>• The Development design aims to reduce impacts on peat – e.g., through use of existing track layout and avoiding areas of deep peat;</li> <li>• Implementation of a CEMP, PMP etc. during construction to minimise environmental impacts and peat disturbance; and</li> <li>• Buffers from watercourses incorporated in layout design, protecting water quality and also protecting Development infrastructure from flooding.</li> </ul>	<p>Pre-Construction &amp; Construction</p>