



Vale of Leven Wind Farm Limited

Vale of Leven Wind Farm

Environmental Impact Assessment Report (Volume 1)

Chapter 15 – Schedule of Environmental Commitments

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15 SCHEDULE OF ENVIRONMENTAL COMMITMENTS

15.1 Introduction

- 15.1.1 The assessment of the Proposed Development has identified a number of potential impacts that could arise as a result of its construction and operation. Mitigation measures have accordingly been identified and proposed to counter adverse impacts and reduce the significance of residual effects on the receiving environment.
- 15.1.2 The embedded and additional environmental mitigation measures identified during the EIA process are reported in **Chapters 5 to 14** of **Volume 1** of the EIA report.

Table 15.1 presents a summary of environmental commitments listed according to the relevant environmental topic, which would be applied during the construction and operation of the Proposed Development. Table 15.1: Summary of Environmental Commitments

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
Proposed Development					
2.1	Micrositing	In those places where environmental features may be affected by micrositing, tolerance would be constrained to less than 50 m, and such changes would be managed in consultation with an Ecological Clerk of Works (ECoW) for the Proposed Development during its construction phase. The micrositing constraints relevant to the Proposed Development are outlined in each technical chapter.	Construction	Contractor	Chapter 2: Proposed Development in Volume 1 of the EIA Report
2.2	Battery Energy Storage System (BESS)	The battery technology type for the Proposed Development would meet all the relevant safety and environmental standards. All requirements for environmental (e.g., Pollution Prevention Control (PPC) permitting) or health and safety consents (e.g., Control of Major Accident Hazards (COMAH)) would be discussed, confirmed and agreed with WDC prior to construction.	Pre-construction	Applicant / Contractor	Chapter 2: Proposed Development in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>To minimise additional land- take, the substation construction compound (100 m x 75 m) will be utilised. Sufficient space within the substation construction compound remains to accommodate the battery energy storage facility alongside any bunding or drainage required.</p> <p>The applicant's final choice of battery model would ensure compliance with the above parameters. The number, dimensions, housing type, finish, arrangement, security fencing and landscaping of energy storage elements would be agreed with WDC prior to construction of the battery storage facility.</p>			
2.3	Environmental Management	All construction works would be conducted in accordance with a project Construction Environmental Management Plan (CEMP). The CEMP would be submitted to WDC for review and approval prior the construction works commence.	Construction	Contractor	Chapter 2: Proposed Development in Volume 1 of the EIA Report
2.4	Temporary Construction Compounds and Work Areas	<p>The compounds would be constructed in accordance with the specification set out in the EIAR. Construction works would comply with the project's CEMP, best practice guidance, and with any suitably worded condition imposed on the deemed planning permission.</p> <p>The construction compound and lay down areas would be constructed by first stripping the topsoil, which would be stored in a mound for subsequent reinstatement at the end of the construction period, in line with industry best practice. Care would be taken to maintain separate stockpiles for turf and the different soil types to prevent mixing during storage. A geotextile would then be placed on the substratum, which would be overlain by a working surface of stone to approximately 750 mm thickness. Measures for ensuring compliance with industry best</p>	Construction	Contractor	Chapter 2: Proposed Development in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>practice would be set out in a CEMP that would be finalised and agreed with WDC.</p> <p>Reinstatement would involve removing the stone and underlying geotextile before carefully ripping the exposed substrate and replacing the excavated soil.</p>			
2.5	Maintenance and Operation of Wind Turbines	Routine servicing of the turbines would typically be undertaken twice a year, with a full annual service and a minor service every intervening six months. In the first year, there would likely be an initial three-month service post-commissioning. Individual turbines would be switched off when servicing is ongoing. Maintenance and servicing would include activities such as changing of gearbox oils and individual turbine components.	Operation	Applicant	Chapter 2: Proposed Development in Volume 1 of the EIA Report
2.6	Construction hours	It is anticipated that the main construction hours for the Proposed Development would be between 07:00 and 19:00 hours Mondays to Fridays, and 07:00 to 13:00 hours on Saturdays, unless otherwise agreed with WDC. Certain activities, such as electrical works in the substation, or turbine erection in the event of delays due to high winds, may require to be undertaken outside of these hours.	Construction	Contractor	Chapter 2: Proposed Development in Volume 1 of the EIA Report
2.7	Access	During construction, access to areas where construction is taking place, or when there are construction related activities, may be restricted for health and safety purposes in accordance with the Construction (Design and Management) Regulations 2015. In this instance, notices would be placed in prominent locations around the Site outlining any areas of restricted access. Measures for ensuring public safety during construction would be agreed in advance with WDC's Access Officer and set out in the CEMP. The CEMP would outline measures to inform recreational users of the construction work	Construction	Applicant / Contractor	Chapter 2: Proposed Development in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		and direct users into safe areas where there would be no conflict with plant and machinery.			
2.8	Substation Compound	The substation compound would measure approximately 100 m x 75 m and would contain a storage yard/laydown area. The substation compound would be enclosed by palisade type fencing. Lighting would be kept to a minimum and would be limited to working areas only and would comply with health and safety requirements. Lighting would be down lit and linked to timers and movement sensors to reduce potential light pollution.	Operation	Applicant / Contractor	Chapter 2: Proposed Development in Volume 1 of the EIA Report
Ecology					
6.1	Direct habitat loss due to the construction of infrastructure	Best practice and embedded mitigation measures will be taken for habitats and species, such as complying with best practice, micro-siting provisions, provision of biodiversity management and enhancement measures, presence of an ECoW during works, and adherence to a detailed CEMP and SPP. Temporary crane pad sections, construction compounds and borrow pits would be restored at the end of construction.	Construction	Applicant / Contractor	Chapter 6: Ecology in Volume 1 of the EIA Report
6.2	Ancient Woodland .	The Proposed Development will include a detailed Biodiversity Enhancement Management Plan (BEMP), which will be based on the identified 'Search Areas' listed in Appendix 6.6: Outlined Biodiversity Enhancement Management Plan . The OBEMP includes the following proposals: <ul style="list-style-type: none"> • 15.05 ha of woodland enhancement (including enhancement of ancient woodland) and 96.36 ha of native broadleaved woodland creation (via planting) in Search Area B. The ancient 	Construction / Operation	Applicant / Contractor	Chapter 6: Ecology in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>woodland at Barr Wood will primarily be enhanced through enrichment planting, soil translocation, and deadwood creation from trees requiring felling for Site Access construction;</p> <ul style="list-style-type: none"> Creation of approximately 2000 m of new native species-rich hedgerows in Search Area E. <p>Full details of the proposals and associated monitoring and reporting schedules are provided in Appendix 6.6.</p>			
6.3	Annex I Habitats (Wet Heath / Blanket and wet modified bog)	<p>The OBEMP includes the following proposals:</p> <ul style="list-style-type: none"> 89.94 ha of peatland restoration/enhancement in Search Area A, likely primarily delivered through drain blocking and removal of self-seeding conifer trees; Restoration of qualifying grassland habitats within the Auchenroch Glen Sites of Special Scientific Interest (SSSI) (Search Area C, 12.19 ha) through the removal and management of encroaching bracken; 7.25 ha of native mixed scrub creation/enhancement in Search Area D, via planting; and <p>Full details of the proposals and associated monitoring and reporting schedules are provided in Appendix 6.6</p>	Construction	Applicant / Contractor	Chapter 6: Ecology in Volume 1 of the EIA Report
6.4	Bats	<p>In line with best practice guidance on bats (NatureScot <i>et al.</i> 2021) the Proposed Development will utilise the method of reduced rotation speed whilst idling by feathering, at all turbines, to reduce collision risks to bats during the bat active period (April to October).</p>	Operational phase	Applicant / Contractor	Chapter 6: Ecology in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		Creation of woodland and riparian habitat through the delivery of the BEMP, as detailed in Appendix 6.6 , would create and enhance bat foraging and commuting habitat within the Site and locally.			
6.5	Protected Species	To ensure all reasonable precautions are taken to avoid negative effects on habitats, protected species and aquatic interests, a suitably qualified Ecological Clerk of Works (ECoW) would be appointed prior to the commencement of construction to advise the applicant and the Principal Contractor on all ecological matters. The ECoW will be required to be present onsite during the construction phase and will carry out monitoring of works and briefings with regards to any ecological sensitivities on the Site to the relevant staff of the Principal Contractor and subcontractors.	Pre-construction	Contractor	Chapter 6: Ecology in Volume 1 of the EIA Report
		A Species Protection Plan (SPP) following the principles contained in the draft SPP provided in Appendix 6.5 will be finalised and then implemented during the construction phase. The SPP details measures to safeguard protected species known or likely to be in the area. The SPP includes pre-construction surveys and good practice measures during construction. Pre-construction surveys will be undertaken to check for any new protected species in the vicinity of the construction works. The results of the pre-construction surveys will be used to update the draft SPP ahead of construction starting. The SPP will remain a live document to be updated as required and in agreement with the ECoW where changes to the distribution and status of protected species and features are recorded.	Construction	Contractor / Applicant	Chapter 6: Ecology in Volume 1 of the EIA Report Appendix 6..5: Species Protection Plan in Volume 3 of the EIA Report
Ornithology					

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
7.1	Important Ornithological Features (IOFs)	<p>During the construction phase, the following embedded mitigation would be implemented to ensure legal compliance and minimise the likelihood of significant effects on IOFs, and this has been taken into consideration in the assessment:</p> <p>To ensure all reasonable precautions are taken to avoid impacts on birds during construction and decommissioning, the Applicant will appoint a suitably qualified Ecological Clerk of Works (ECoW) prior to the commencement of construction and decommissioning and they will advise the Applicant and the Principal Contractor on all ornithological matters (with the assistance of a suitably qualified/licenced ornithologist if required). The ECoW will be required to be present on Site during the construction and decommissioning periods and will carry out monitoring of works and briefings with regards to any ornithological sensitivities on the Site to the relevant staff within the Principal Contractor and subcontractors; and</p> <p>A Breeding Bird Protection Plan (BBPP) will be implemented during construction of the Proposed Development. The BBPP will detail measures to ensure legal compliance and safeguard breeding birds known to be in the area and will include species-specific guidance. The BBPP shall include pre-construction surveys and good practice measures during construction. Pre- and during-construction surveys will be undertaken to check for any new breeding bird activity in the vicinity of the construction works. The ECoW will oversee the implementation of the above measures.</p> <p>To reduce the risk of collisions of black grouse (and other species) any new fencing would be suitably marked, following guidance by Trout & Kortland (2012).</p>	Pre-Construction / Operation	Applicant / Contractor	Chapter 7: Ornithology in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
7.2	Potential reduction in habitat quality/availability	Mitigation, compensation and significant enhancement measures are proposed as part of the Proposed Development's OBEMP, detailed in Appendix 6.6 .	Construction / Operation	Applicant / Contractor	Chapter 7: Ornithology in Volume 1 of the EIA Report
7.3	Disturbance effects associated with the operation of the proposed substation.	Measures would be undertaken to minimise lighting and disturbance impacts associated with the operation of the proposed substation. Options include provision of screening (opaque fencing or native tree/vegetation planting), minimisation of lighting requirements and timings, and directional lighting away from the lek site. Further details relating to substation design are provided in Chapter 2: Proposed Development .	Operational phase	Applicant / Contractor	Chapter 7: Ornithology in Volume 1 of the EIA Report
Geology, Hydrogeology, Hydrology and Peat					
8.1	Potential effects on watercourses	A programme of water monitoring would be required prior to any construction activity and during construction of the Proposed Development. The monitoring programme would be agreed with SEPA, NatureScot, WDC, Marine Science Scotland, Loch Lomond Fisheries Trust (LLFT) and Clyde River Foundation (CRF) and it is expected to include monitoring of the watercourses which drain from the site.	Pre-construction / Construction	Applicant / Contractor	Chapter 8: Geology, Hydrogeology, Hydrology and Peat in Volume 1 of the EIA Report
8.2	Peat and Peat Management	A comprehensive programme of peat depth probing has been undertaken in order 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 Peat Management Plan (see Appendix 8.2: Peat Management Plan). As shown in Chapter 6: Ecology and Biodiversity, Appendix 8.1: Peat Landslide Hazard Risk Assessment and Appendix 8.2: Peat Management Plan , measures have been proposed to ensure the stability of peat and carbon rich soils	Pre-construction - Construction	Applicant / Contractor	Chapter 8: Geology, Hydrogeology, Hydrology and Peat in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>and that peat and soils that would be disturbed by the Proposed Development can be safeguarded and beneficially re-used on Site. Appendix 8.2 aligns with habitat and biodiversity enhancement measures, including peatland restoration opportunities, as identified in Appendix 6.6.</p> <p>Measures include general and embedded mitigation, such as complying with best practice, micro-siting provisions, presence of an ECoW and adherence to a detailed Construction and Environmental Management Plan (CEMP).</p>			
8.3	Peat Landslide Hazard	<p>A Design and Geotechnical Risk Register would be compiled to include risks relating to peat instability, as this would be beneficial to both the developer and the Contractor in identifying potential risks that may be involved during construction. Good construction practice and methodologies to prevent peat instability within areas that contain peat deposits are identified in Appendix 8.1. These include:</p> <ul style="list-style-type: none"> • 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; • Minimisation of ‘undercutting’ of peat slopes, but where this is necessary, a more detailed assessment of the area of concern would be required; • Careful micro-siting of turbine bases, crane hardstandings and access track alignments to minimise effects on the prevailing surface and sub-surface hydrology; • Raising peat stability awareness for construction staff by incorporating the issue 	Construction	Applicant / Contractor	Chapter 8: Geology, Hydrogeology, Hydrology and Peat in Volume 1 of the EIA Report

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		<p>into the site induction (e.g. peat instability indicators and good practice);</p> <ul style="list-style-type: none"> • 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; • 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); • Developing robust drainage systems that would require minimal maintenance; and • Developing drainage systems that would not create areas of concentrated flow or cause over/under-saturation of peat habitats 			
8.4	Watercourses and Watercourse crossing	The crossings would be designed to pass the 200-yr flood event and their design and construction details would be agreed with SEPA and WDC as part of the final CEMP.	Pre-construction / Construction	Applicant / Contractor	Chapter 8: Geology, Hydrogeology, Hydrology and Peat in Volume 1 of the EIA Report
8.5	Groundwater Dependent Habitats	Measures, such as permeable access tracks and regular cross track drains, have been proposed to safeguard existing water flow paths and maintain existing water quality. It is considered therefore that the water dependent habitats identified by the NVC mapping can be sustained. This would be confirmed, in accordance with good practice, by the Ecological Clerk of Works (ECoW) at the time of the	Construction	Applicant / Contractor	Chapter 8: Geology, Hydrogeology, Hydrology and Peat in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		construction who would ensure existing surface water flow paths and water flushes are maintained			
8.6	Pollution risk	<p>Good practice measures would form part of the final CEMP, to be applied in relation to pollution risk, and management of surface runoff rates and volumes. Any further specific mitigation which may be required to reduce the significance of a potential effect is identified in the assessment of likely effects during the construction and operation phases.</p> <p>As a principle, preventing the release of any pollution/sediment is preferable to dealing with the consequences of any release. General Measures would include:</p> <ul style="list-style-type: none"> • Prior to construction, a site-specific drainage plan would be produced. This would consider any existing local drainage which may not be mapped and incorporate any site-specific mitigation measures identified during the assessment. • 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. • The final CEMP would contain details on the location of spill kits, would 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 would be 	Pre-Construction / Construction	Applicant / Contractor	Chapter 8: Geology, Hydrogeology, Hydrology and Peat in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>identified to deal with any major environmental incidents.</p> <ul style="list-style-type: none"> • A wet weather protocol would be developed. This would detail the procedures to be adopted by all staff during periods of heavy rainfall. Tool box talks would be given to engineering/construction/supervising personnel. • Roles would be assigned to different engineering / construction / supervising personnel and the inspection and maintenance regimes of sediment and runoff control measures would be adopted during these periods. In extreme cases, the above protocol would dictate that work onsite may have to be temporarily suspended until weather/ground conditions allow. 			
8.7	Water quality and Pollution Risk	<p>Water quality monitoring during the construction phase would be undertaken for the surface water catchments that drain from the Proposed Development to ensure that none of the tributaries of the main channels are carrying pollutants or suspended solids. Monitoring would be carried out at a specified frequency (depending upon the construction phase) on these catchments.</p> <p>The monitoring scheme would also allow the quality of water draining toward Dumbarton Muir SSSI and Auchenreoch Glen SSSI to be assessed and quantified.</p> <p>Monitoring would continue throughout the construction phase and immediately post construction. Monitoring would be used to allow a rapid response to any pollution incident as well as assess the efficacy of good practice or remedial</p>	Construction	Applicant / Contractor	Chapter 8: Geology, Hydrogeology, Hydrology and Peat in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>measures. Monitoring frequency would increase during the construction phase if remedial measures to improve water quality were implemented. Detailed water quality monitoring plans would be developed during detailed design. WDC, SEPA, NatureScot, Marine Scotland, LLFT and CRF would be consulted on the plans and would be contained within the final CEMP.</p> <p>The performance of the good practice measures would 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> <p>Good practice measures in relation to pollution prevention would include the following:</p> <ul style="list-style-type: none"> • Refuelling would take place at least 50 m from watercourses and would not occur when there is risk that oil from a spill could directly enter the water environment; • Foul water generated onsite would be managed in accordance with best practice and be drained to a sealed tank and routinely removed from the Site; • A vehicle management plan and speed limit would be strictly enforced onsite to minimise the potential for accidents to occur; • Drip trays would be placed under vehicles which could potentially leak fuel/oils when parked; • Areas would be designated for washout of vehicles which are a minimum distance of 50 m from a watercourse; 			

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		<ul style="list-style-type: none"> Washout water would also be stored in the washout area before being treated and disposed of; If any water is contaminated with silt or chemicals, run-off would not enter a watercourse directly or indirectly without treatment; Water would be prevented as far as possible, from entering excavations; Procedures would be adhered to for storage of fuels and other potentially contaminative materials in line with the Controlled Activity Regulations (CAR) to minimise the potential for accidental spillage; and A plan for dealing with spillage incidents would be designed prior to construction, and this would be adhered to should any incident occur, reducing the effect as far as Practicable. This would be included in the final CEMP. <p>Site investigation (e.g., trial pitting and/or boreholes) would be undertaken prior to any construction works where excavation would be required to establish the wind farm and it would inform detailed design and construction methods to ensure pollution risk is further considered prior to construction. These methods would be specified in the final CEMP.</p>			
8.8	Erosion and Sedimentation	<p>Good practice measures for the management of erosion and sedimentation would include the following:</p> <ul style="list-style-type: none"> All stockpiled materials would be located outwith a 50 m buffer from watercourses, 	Construction	Applicant / Contractor	Chapter 8: Geology, Hydrogeology, Hydrology and Peat in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>including on up-gradient sides of tracks and battered to limit instability and erosion;</p> <ul style="list-style-type: none"> • Stockpiled material would either be seeded or appropriately covered, minimising the area of exposed bare ground; • Monitoring of stockpiles/excavation areas during rainfall events; • Water would be prevented as far as possible, from entering excavations through the use of appropriate cut-off drainage; • Where this is not possible, water that enters excavations would pass through a number of silt/sediment traps to remove silt prior to discharge into the surrounding drainage system. Detailed assessment of ground conditions would be required to identify locations where settlement lagoons would be feasible; • Clean and dirty water on-site would be separated, and dirty water would be filtered before entering the stream network; • If the material is stockpiled on a slope, silt fences would be located at the toe of the slope to reduce sediment transport; • The amount of ground exposed, and time period during which it is exposed, would be kept to a minimum and appropriate drainage would be in place to prevent surface water entering deep excavations; • A design of drainage systems and associated measures to minimise sedimentation into natural watercourses 			

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>would be developed - this may include silt traps, check dams and/or diffuse drainage;</p> <ul style="list-style-type: none"> Silt/sediment traps, single size aggregate, geotextiles or straw bales would 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 would avoid periods of heavy rainfall where possible; and Construction personnel and the Principal Contractor would carry out regular visual inspections of watercourses to check for suspended solids 			
8.9	Fluvial Flood Risk	<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 the 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 would include the following:</p> <ul style="list-style-type: none"> Drainage systems would be designed to ensure that any sediment, pollutants or foreign materials which may cause blockages are removed before water is discharged into a watercourse; Onsite drainage would 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; 	Construction	Applicant / Contractor	Chapter 8: Geology, Hydrogeology, Hydrology and Peat in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<ul style="list-style-type: none"> • Appropriate drainage would attenuate runoff rates and reduce runoff volumes to ensure minimal effect upon flood risk; • Where necessary, check dams would 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 • As per good practice for pollution and sediment management, prior to construction, section specific drainage plans would be developed and construction personnel made familiar with their implementation. 			
8.10	Water Abstractions	<p>Any water abstraction would only be made with authorisation from SEPA and in accordance with the CAR. Good practice that would be followed in addition to the CAR Licence regulations includes:</p> <ul style="list-style-type: none"> • Water use would be planned so as to minimise abstraction volumes; • Water would be re-used where possible; • Abstraction volumes would be recorded; and • Abstraction rates would be controlled to prevent significant water depletion in a source. 	Construction	Applicant / Contractor	Chapter 8: Geology, Hydrogeology, Hydrology and Peat in Volume 1 of the EIA Report
8.11	Potential Operational Impacts	Should any maintenance be required onsite during the operational life of the project which would involve construction activities; mitigation measures would be adhered to along with the measures in the final CEMP to avoid potential effects	Operation	Applicant / Contractor	Chapter 8: Geology, Hydrogeology, Hydrology and Peat in Volume

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		Should any non-routine maintenance be required at the sections of track crossing wet areas (defined visually onsite by a contractor or operational personnel) there would be potential for erosion and sedimentation effects to occur due to the existence of disturbed material. Should this type of activity be required, then the good practice measures as detailed for the construction phase would be required on a case by case basis. Extensive work at water crossings/adjacent to the water environment may require approval from SEPA under the CAR (depending upon the nature of the activity).			1 of the EIA Report
Traffic and Transportation					
9.1	Construction Traffic	<p>Mitigation measures to control potential impacts of construction traffic associated with the Proposed Development would be proposed as necessary and would include the implementation of a Construction Traffic Management Plan (CTMP). The following measures would be implemented through the CTMP during the construction phase:</p> <ul style="list-style-type: none"> • During the construction period, a project website, blog or social media feed would be regularly updated to provide the latest information relating to traffic movements associated with vehicles accessing the site. This would be agreed with WDC. • Agree Abnormal Indivisible Loads (AIL) route modifications and improvements with WDC and other relevant stakeholders. Works which will be required to facilitate turbine deliveries are outlined in the respective delivery route options RSR, which are presented in Technical Appendix 9.1; 	Pre-Construction / Construction	Applicant / Contractor	Chapter 9: Traffic and Transport in Volume 2 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<ul style="list-style-type: none"> • A site worker transport and travel arrangement plan, including transport modes to and from the worksite (including pick up and drop off times); • A Transport Management Plan will be prepared for AIL deliveries; • All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads; • Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway; • Wheel cleaning facilities may be established at the site entrance, depending on the views of WDC; • Normal site working hours would be limited to between 07:00 and 19:00 (Monday to Friday) and 07:00 and 13:00 (Saturday), though component delivery and turbine erection may take place outside these hours; • Appropriate traffic management measures would be put in place on the A813 Stirling Road leading through to the site, from its junction with the A82(T), to avoid conflict with general traffic, subject to the agreement of WDC. Typical measures would include HGV turning and crossing signs and/or banksmen at the site access and warning signs; • Provide construction updates on the project website and or a newsletter to be 			

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>distributed to residents within an agreed distance of the site;</p> <ul style="list-style-type: none"> • Adoption of voluntary reduced speed limits at locations to be agreed with WDC; • All drivers would be required to attend an induction to include: <ul style="list-style-type: none"> ○ A toolbox talk safety briefing; ○ The need for appropriate care and speed control; ○ A briefing on driver speed reduction agreements (to slow site traffic at sensitive locations through the villages); and ○ Identification of the required access routes and the controls to ensure no departure from these routes. 			
9.2	Abnormal wear on its road network/ damage to road infrastructure	<p>Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route would be recorded to provide a baseline of the condition of the road prior to any construction work commencing. This baseline would provide evidence of any change in the road condition during the construction phase. Any necessary repairs would be coordinated with WDC's roads team. Any damage caused by traffic associated with the Proposed Development during the construction period, that would be hazardous to public traffic, would be repaired immediately.</p> <p>There would be a regular road review, and any debris and mud would be removed from the carriageway using an on-site road sweeper to ensure road safety for all road users.</p>	Pre-construction / Construction	Applicant / Contractor	Chapter 9: Traffic and Transport in Volume 2 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>Before the ALLs traverse the routes from the port of entry (POE), the following tasks would be undertaken to ensure load and road user safety:</p> <ul style="list-style-type: none"> • Ensure any vegetation which may foul the loads is trimmed back to allow passage; • Confirm there are no roadworks or closures that could affect the passage of the loads; • Check no new or diverted underground services on the proposed route are at risk from the abnormal loads; and • Confirm the police are satisfied with the proposed movement strategy 			
9.3	Interactions between road users and the delivery of abnormal loads.	<p>All abnormal load deliveries would be undertaken at appropriate times (to be discussed and agreed with the local authority 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.</p> <p>Advance warning signs would be installed on the approaches to the affected road network. Flip up panels (shown in grey) would be used to mask over days where convoys would not be operating. When no convoys are moving, the sign would be bagged over by the Traffic Management contractor.</p> <p>This signage will assist in helping improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist).</p> <p>The location and numbers of signs would be agreed post consent and would form part of the Traffic Management Proposal for the project.</p>	Pre-construction/- Construction	Applicant / Contractor	Chapter 9: Traffic and Transport in Volume 2 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>The Abnormal Load Transport Management Plan would also include:</p> <ul style="list-style-type: none"> • Procedures for liaising with the emergency services to ensure that police, fire and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates and agreeing communication protocols and lay over areas to allow overtaking; • A diary of proposed delivery movements to liaise with the communities to avoid key dates such as local events; • A protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries or normal business traffic; and • Proposals to establish a construction liaison group to ensure the smooth management of the project/public interface with the applicant, the construction contractors, the local community, and if appropriate, the police forming the committee. This committee would form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising. 			
9.4	Potential interactions between construction traffic and users of the paths and public road	<p>If required, a Path Planning Study will be conducted post consent and will be secured through a planning condition. Findings from the study will be used to formulate a set of measures into a Path Management Plan (PMP).</p> <p>Users of the Rights of Way will be separated from construction traffic through the use of barriers. Crossing points will be provided where required, with path users having right of way. Appropriate Traffic</p>	Construction	Applicant / Contractor	Chapter 9: Traffic and Transport in Volume 2 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>Signs Manual Chapter 8 compliant temporary road signage would be provided to assist at these crossing for the benefit of all users.</p> <p>The principal contractor will ensure that speed limits are always adhered to by their drivers and associated subcontractors. This is particularly important within close proximity to the Core Paths, Rights of Way and at crossing points. Advisory speed limit signage will also be installed on approaches to areas where path users may interact with construction traffic.</p> <p>Signage will be installed on the site exits that makes drivers aware of local speed limits and reminding drivers of the potential presence of pedestrians and cyclists in the area. This will also be emphasised in the weekly toolbox talks.</p> <p>No scoping response has been received from The British Horse Society, however measures implemented on similar schemes will be given consideration as part of the Proposed Development. These measures are predominantly focused around the interactions between HGV traffic and horses.</p> <p>The British Horse Society has previously recommended the following actions that will be included in the site training for all HGV staff:</p> <ul style="list-style-type: none"> • On seeing riders approaching, drivers must slow down and stop, minimising the sound of air brakes, if possible; • If the horse still shows signs of nervousness while approaching the vehicle, the engine should be shut down (if it is safe to do so); • The vehicle should not move off until the riders are well clear of the back of the HGV; 			

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		<ul style="list-style-type: none"> If drivers are wishing to overtake riders, please approach slowly or even stop in order to give riders time to find a gateway or lay by where they can take refuge and create sufficient space between the horse and the vehicle. Because of the position of their eyes, horses are very aware of things coming up behind them; and All drivers delivering to the site must be patient. Riders will be doing their best to reassure their horses while often feeling a high degree of anxiety themselves. <p>A Staff Travel Plan will be deployed where necessary, to manage the arrival and departure profile of staff and to encourage sustainable modes of transport, especially car-sharing. A package of measures could include:</p> <ul style="list-style-type: none"> Appointment of a Travel Plan Coordinator (TPC); Provision of public transport information; Mini-bus service for transport of site staff; Promotion of a car sharing scheme; and Car parking management. 			
Cultural Heritage and Archaeology					
10.1	Cultural Heritage Assets	<p>A watching brief of ground-breaking works is proposed in any areas considered to be of low or higher potential for remains of these dates, and in any areas of the Inner Study Area (ISA) considered to be of medium or higher potential for post-medieval remains. These areas are shown on Volume 2a, Figure 10.1.</p> <p>It is proposed that the location of shieling ground (68099) is subject to a programme of pre-construction photographic recording and topographic</p>	Pre – Construction / Construction	Applicant / Contractor	Chapter 10: Cultural Heritage and Archaeology in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		survey of any upstanding features which may relate to the asset. A watching brief of ground breaking works in this area is also proposed			
10.2	Micrositing	Should micrositing activities result in direct impacts on any heritage assets, programmes of pre-construction photographic recording, topographic survey and archaeological excavation as appropriate will be carried out prior to construction commencing. Following the implementation of pre-construction mitigation, a watching brief of any micrositing ground breaking works which would directly impact any heritage assets is proposed.	Construction	Applicant / Contractor	Chapter 10: Cultural Heritage and Archaeology in Volume 1 of the EIA Report
10.3	Possible impacts on undiscovered archaeological remains in the ISA.	A watching brief of ground-breaking works is proposed in any areas of the ISA considered to be of medium or higher potential for post-medieval, and in any areas considered to be of low or higher potential for remains of prehistoric or medieval remains. These areas are shown on Volume 2a, Figure 10.1	Construction	Applicant / Contractor	Chapter 10: Cultural Heritage and Archaeology in Volume 1 of the EIA Report
Noise and Vibration					
11.1	Construction effects	<p>An outline Construction Environmental Management Plan (CEMP) would be secured through a planning condition. This would include measures to reduce potential effects during the construction and decommissioning phases of the Proposed Development. Best Practical Means (BPM) discussed within BS 5228-1 and 522802 would be implemented, such as proposed mitigation including:</p> <ul style="list-style-type: none"> Contractor shall aim to be a proactive and considerate neighbour, for example, potentially affected residents shall be approached in advance of any potential disturbance and kept informed of works 	Construction	Applicant / Contractor	Chapter 11: Noise and Vibration in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>progress, with a noise complaint handling procedure and responded to quickly,</p> <ul style="list-style-type: none"> Using normal working hours of Monday to Friday 07:00 – 19:00, Saturday 07:00 - 13:00, and no work during night-time hours/ Sundays/ Bank holidays where noise will be audible at the site boundary, Sunday working only undertaken in emergencies or with prior approval from the local authority, Noisy plant not used simultaneously and/or close together to avoid cumulative noise levels where possible, Turning generators off overnight, or measures implemented to minimise noise levels to nearest dwellings, If blasting is confirmed for the Proposed Development, potential effects could be reduced: Blasting taken place under strictly controlled conditions with the agreement of the local authority, at regular times from Monday to Friday 10:00 – 16:00 A scheme outlining the mitigation measures to be adopted will be submitted to the mineral planning authority, for approval of blasting details. 			
Aviation and Radar					
13.1	Glasgow Airport Radar	The Applicant is in discussions with Glasgow Airport to agree appropriate means of technical mitigation of the Proposed Development's effects on their Primary Surveillance Radars (PSRs) and Instrument Flight Procedures. This would be secured via a planning condition requiring a Radar Mitigation Scheme.	Pre-construction	Applicant	Chapter 13: Aviation and Radar in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		<p>Mitigation of the effects of the Proposed Development infringing the Glasgow Airport OHS would be achieved by:</p> <ul style="list-style-type: none"> • Notification of the details of the Proposed Development, prior to construction, to the CAA as required by Article 225A of the ANO, in order to ensure that it is marked on aeronautical charts and listed in the UK AIP; • Listing of the location and height of the Proposed Development in the Aerodrome Obstacles section of the Glasgow Airport entry in the UK AIP; and • Installation of a CAA-approved lighting scheme on the Proposed Development. <p>In the event that any effects on Glasgow Airport Instrument Flight Procedures (IFPs) are identified, these would be mitigated by re-design of the relevant procedures to restore the required minimum obstacle clearance. The re-designed procedures would then be submitted to the CAA for approval. IFP mitigation would be secured by a planning condition requiring an IFP Scheme</p>			
13.2	NATS En Route plc (NERL)	The Applicant is in discussions with NERL to agree appropriate means of technical mitigation of the Proposed Development's effects on their PSRs. This would be secured via a planning condition requiring a Radar Mitigation Scheme.	Pre-construction	Applicant	Chapter 13: Aviation and Radar in Volume 1 of the EIA Report
13.3	Aviation lighting	Under international civil aviation regulations and UK civil air law, all obstacles at or exceeding 150 m agl are required to have aviation warning lighting to mitigate effects on low flying civilian aircraft. This is based on the international civil aviation standard that the minimum height for aircraft flight, other than during takeoff and landing, is 150 m agl.	Pre-Construction	Applicant	Chapter 13: Aviation and Radar in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		In accordance with the guidance in UK CS-ADR-DSN, a reduced lighting scheme has been designed that would identify the perimeter of the Proposed Development and the highest turbine within it. This will be submitted to the CAA for approval.			
Other Issues					
14.1	Felling of trees for access track	<ul style="list-style-type: none"> • Micro-siting of the access track will be used to minimise the impact on trees with a competent Woodland Manager/Arboriculturist advising at the time of marking out the track. This will help to minimise the final number of trees to be felled. • Cut and fill road construction methods should be avoided or minimised, the use of “no-dig” geogrid root protection materials should be used to protect roots from damage caused by compaction of soil arising from vehicular traffic. • Compensatory planting will be secured by a condition of planning consent and a Compensatory Planting Plan (CPP) will be developed as part of the OBEMP in accordance with the UK Forestry Standard for approval by Scottish Forestry with works being implemented in accordance with good forestry practice. • There are approximately 1 ha of open areas at Barr Wood which will be planted with a range of native tree species suited to the site. • In addition to the compensatory planting, the loss of woodland from Barr Wood (approximately 0.06 hectares), should be compensated for by the creation of new deadwood habitats nearby to allow those 	Construction	Applicant / Contractor	Chapter 14: Other Issues in Volume 1 of the EIA Report

Ref	Potential Effect	Description of Mitigation Measure	Development Phase	Responsible Party	Document Source
		invertebrates and fungi resident within the trees the opportunity to relocate.			