18 Schedule of Environmental Commitments

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18. Schedule of Environmental Commitments

18.1 Introduction

18.1.1 Best practice in EIA recommends the use of a Schedule of Environmental Commitments, which can act as a quick reference for anyone interested in the mitigation measures to which the Applicant has committed to implementing and upon which the assessment of residual effects presented in this EIAR has been based. It will be utilised by the Applicant's design team throughout development of the detailed design, and the appointed Contractors will be required to allow for, and ultimately implement, each of the measures in this schedule as a minimum at the construction stage.

18.1.2 Table 18.1 presents a Schedule of Environmental Commitments for the Proposed Development, listed according to the relevant environmental topic area.

Table 18.1 - Schedule of Environmental Commitments

Environmental Subject Area	Environmental Commitment	Timing
The Proposed Development		
Infrastructure	A micro-siting allowance of 50 m in all directions is being sought for the following infrastructure elements: - Turbines and crane pads; - access tracks; - watercourse crossings; - substation and energy storage compound; and - construction compounds/temporary laydown area. to allow for local variations in ground conditions, topography or unforeseen environmental constraints identified by pre-construction surveys. The final positioning will be addressed through an appropriately worded condition.	Pre-construction
Turbines and Turbine Foundations	A full ground investigation will be completed prior to construction to inform turbine foundations.	Pre-construction
	The area above the foundations will be backfilled and seeded with native seed mix to encourage re-vegetation.	Construction
Substation and Energy Storage Compound	The design of the substation and control room building is relatively flexible and where appropriate may be clad in local materials to match in with the surroundings. Details of the final design of all components of the substation and energy storage compound are proposed to be secured through an appropriately worded condition.	Pre-construction
Construction Compounds and Crane Pads	Prior to commencing construction work, a detailed appraisal of the areas will include an assessment by the project ecologist and surveys to confirm the nature of the sub-strata.	Pre-construction
	Detailed location, size and engineering properties will be confirmed prior to the start of construction, after the turbine supplier and model have been confirmed.	Pre-construction
	On completion of construction works, it is proposed that the temporary laydown area will be restored for forestry purposes.	Post-construction
Access	Any timber to be removed from site to facilitate the Proposed Development, and any pre-construction SI works, will be via the permitted existing forestry haul route to Station Road at Douglas West. All other Proposed Development traffic will be via the existing private haul road from junction 11 of the M74.	Pre-construction

Environmental Subject Area	Environmental Commitment	Timing
	Prior to construction, any required improvements to public roads will be undertaken and appropriate highway safety measures will be agreed with SLC and Transport Scotland, with necessary signage or traffic control measures implemented throughout the construction phase on the agreed basis.	Pre-construction
	Existing onsite access / forestry tracks and wayleaves will, where possible, be retained, re-used and upgraded (where necessary).	Construction
	All new access tracks have been designed to avoid any sensitive environmental receptors and will be made of locally sourced stone (within South Lanarkshire, potentially in part from on-site borrow pits (if suitable).	Construction
Traffic	Vehicles will be routed as agreed with SLC, Transport Scotland and Police Scotland, to minimise disruption and disturbance to local residents and road users.	Pre-construction
Borrow Pits	Detailed site investigations prior to construction will be carried out to further confirm the rock type, rock characteristics and suitability, as well as potential volumes to be extracted from the search area. Final borrow pits identified will be defined within the Construction Environmental Management Plan (CEMP)	Pre-construction
Drainage design	A detailed drainage design will be undertaken and submitted to the Scottish Ministers, in consultation with SEPA, prior to construction.	Pre-construction
Construction Environmental Management Plan (CEMP)	The CEMP shall be produced in consultation with the Scottish Ministers, SNH, SEPA, Forestry Commission Scotland (FCS) and SLC. The CEMP shall include, but not be limited to, the following environmental issues during construction: - noise and vibration; - dust and air pollution; - surface and ground water; - ecology and ornithology (including protection of habitats and species); - agriculture (including protection of livestock and land); - cultural heritage; - waste (construction and domestic); - details of the size, location and volumes to be extracted from borrow pits; - pollution prevention strategy; - pollution incidence response (for both land and water); and - site operations (including maintenance of the construction compound, working hours and safety of the public).	Pre-construction and pre-decommissioning

Environmental Subject Area	Environmental Commitment	Timing
	The Applicant shall provide the following for the above environmental issues: - Details of the all the environmental mitigation which is described within this chapter and how the Contractor will implement this mitigation and monitor its implementation and effectiveness. - Details of how the Contractor will abide by the local and national legislative requirements e.g. *The Water Environment (Controlled Activities) (Scotland) Regulations 2011;* - Details of how the Contractor will implement and monitor construction best practice techniques e.g. the control of noise and dust. - Details of a Waste Management Plan which will include opportunities to reduce and re-use waste on site, recycling of waste which cannot be reused and disposal of waste to landfill. - Details on how the Contractor will liaise with the public and local landowners and how they will respond to any queries and/or complaints.	
	The CEMP will, where applicable, cross-reference and correspond with the Construction Traffic Management Plan (CTMP). The Contractor shall amend and improve the CEMP as required throughout the construction and decommissioning period.	Construction and decommissioning
Construction Traffic Management Plan (CTMP)	The CTMP will detail the management of traffic to and from site, including abnormal loads and daily workers commute. It shall also include mitigation for impacts to public transport, local private access and public foot paths, cycle ways and bridleways where relevant. The Contractor and/or Applicant shall amend and improve the CTMP as required throughout the construction and decommissioning period.	Pre-construction and pre-decommissioning
Operation Environmental Management Plan (OEMP)	An OEMP will be developed for the site to govern operation of the wind farm and ongoing environmental mitigation measures.	Pre-operation
Public Access	Temporary diversions will be put in place for the construction period affecting each section of public access route, with suitable alternatives clearly signposted. It is proposed that the details of these diversions will be secured by an appropriately worded condition.	Pre-Construction
Landscape and Visual		
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.		
Mitigation through Design	The design rationale adopted included: - opportunity to develop further renewable energy development within an already productive landscape and within an established wind farm picture.	Pre-Submission

Environmental Subject Area	Environmental Commitment	Timing
	- avoid inconsistent turbine spacing, to minimise visual confusion and ensure a balanced / compact array from key views. - a review of whether turbines of 200 m could be accommodated at the site in a manner which would not be out of context with the overarching characteristics of the landscape. - appropriate offsets from all properties and settlements, have been maintained to ensure that no property would experience an overbearing visual impact such that it became an unattractive place to live. - alignment of the Proposed Development turbines with the Existing Hagshaw Hill Wind Farm and Extension, Galawhistle Wind Farm, Hazelside Wind Farm, Douglas West Wind Farm, Cumberhead Wind Farm and Dalquhandy Wind Farm ensures that the Proposed Development would appear as part of an agreeable overall array in key views. - taking all other engineering and environmental constraints into account. - considering the layout of other structures and ancillary features of the Proposed Development to utilise existing infrastructure as far as possible.	
Visual mitigation during operation	The turbines would be painted an off-white colour with a low reflectivity semi-matt finish (or similar as agreed with the Local Planning Authority (LPA)), widely regarded to be the least intrusive in the landscape when seen against the sky in a host of weather conditions typically experienced within the UK.	Operation
Ecology and Nature Conservation		
Mitigation During Construction	General mitigation for habitats would include the standard in-built mitigation and adoption of good practice; for instance, the presence of an ECoW and implementation of appropriate pollution prevention and standard good practice construction environmental management as part of a robust CEMP. To ensure standard good practice measures are effective, pollution prevention proposals will be site specific and adapted to the local ground conditions.	Construction
	A Species Protection Plan (SPP) would ensure that the risk of bats being disturbed by construction activities is minimised.	Pre-construction and construction
Mitigation During Operation	All proposed turbines would be located at or beyond an estimated set-back distance of 65.7 m to reduce bat collision risk.	Operation
	In order to assess the long-term risk of collision effects on *Nyctalus* bats, a monitoring plan will be developed prior to construction. If required, a Bat Mitigation Plan containing appropriate mitigation measures proportionate to level of risk would be developed, in agreement with SNH.	Operation

Environmental Subject Area	Environmental Commitment	Timing
Mitigation During Decommissioning	Mitigation measures during decommissioning are likely to be similar to those outlined for the construction phase.	Decommissioning
Ornithology		
Breeding Bird Protection Plan (BBPP)	A Breeding Bird Protection Plan (BBPP) will be set up in agreement with SNH, to avoid the destruction or disturbance of any nest site, and with species-specific temporal and spatial restrictions around construction works should any active nest be located.	Pre-construction
	Pre-construction breeding bird surveys will be undertaken by a suitably qualified ornithologist to determine whether any breeding activity is taking place within potential species-specific disturbance zones of any proposed infrastructure (assumed to be 500 m for Schedule 1 raptors and 750 m for black grouse).	Pre-construction
	If breeding is detected within a potential disturbance zone, all construction work will cease, and a disturbance risk assessment will be prepared. This will consider the likelihood and possible implications of the associated construction activities on the breeding attempt and set out necessary measures to ensure no disturbance occurs, which will be agreed with SNH.	Construction
Noise		
Construction Noise	Control of working hours and best working practices to be implementation during construction.	Construction
Operational Noise	Operational monitoring will be agreed with SLC as required, to ensure compliance with noise limits imposed by planning conditions, with the option of selective constraint of turbine operation, if considered to be necessary in any circumstances.	Operation
Cultural Heritage		
Written Scheme of Investigation (WSI)	If required under the terms of a planning condition, the scope of any required archaeological works would be developed in consultation with (and subject to agreement of) WoSAS acting on behalf of SLC and set out in one or more Written Scheme(s) of Investigation (WSI) provided for the approval of the Council in advance of construction works commencing.	Pre-Construction
	All required mitigation works will be conducted by a professional archaeological organisation, in accordance with the WSI.	Pre-construction
Post excavation requirements	If significant discoveries are made during any archaeological monitoring works which are required to be carried out under the terms of a planning condition, and it is not possible to preserve the discovered site or features in situ, provision would be made for the excavation where necessary, of any archaeological remains encountered.	Construction

Environmental Subject Area	Environmental Commitment	Timing
	The provision would include the consequent production of written reports, on the findings, with post-excavation analysis and publication of the results of the works, where appropriate.	
Construction Phase Guidelines	Written guidelines would be issued for the use by all construction contractors, outlining the need to avoid causing unnecessary damage to known heritage assets. These would set out arrangements for calling upon retained professional support in the event that buried archaeological remains of potential archaeological interest should be discovered in areas not subject to archaeological monitoring. These will also make clear the legal responsibilities placed upon those disturbed artefacts or human remains.	Construction
Hydrology, Hydrogeology and Geology		
Project Design	Where possible a 50 m buffer was implemented around all watercourses considered to have continuous flow throughout the year. Exceptions are three locations where infrastructure encroaches on this: - T4 crane pad and access track. Small watercourse is physically separated within a valley; - T9 to T11 access track. This is an existing track requiring no new excavation; and - proposed substation and temporary laydown area. Small drain may not have continuous flow.	Pre-construction
	Access track design makes use of existing tracks and minimises the need for new track construction, and new water crossings.	Pre-construction
	Felling of forestry will be minimised and replanting areas to include everything except those areas required for turbines and permanent infrastructure and suitable buffer areas.	Pre-construction
Site Investigations	To determine groundwater conditions across the site, pre-construction site investigations will be conducted. These will focus on areas where construction is proposed to be undertaken and will allow the turbines and the associated infrastructure to be micro-sited away from unsuitable areas, such as areas of contamination (unlikely) or where there are significant groundwater flows.	Pre-construction
	Targeted monitoring and assessment of the groundwater levels and flows beneath the site.	Pre-construction
	Any peat identified in the borrow pit search areas will be avoided for actual borrow pit excavation.	Construction
Peat	Any peat excavated will be re-used on site as set out in the Outline Peat Management Plan (OPMP)	Construction
Water Quality	The appointed Contractor will undertake pre-construction baseline water quality sampling and analysis at the Hagshaw Burn and Shiel Burn and implement a programme of regular monitoring and analysis of the water quality of the watercourses throughout the construction period.	Pre-construction and Construction

Environmental Subject Area	Environmental Commitment	Timing
Construction Environmental Management Plan (CEMP)	The Contractor will produce a CEMP prior to commencement of construction activities which contains a construction method statement that includes: - a detailed breakdown of the phasing of construction activities; - a pollution risk assessment of the site and the proposed activities; - identification of all Controlled Waters that may be affected by the works and temporary discharge points to these watercourses; - planning and design of appropriate pollution control measures during felling, earthworks and construction; - management of the pollution control system, including dewatering of excavations (if required) away from watercourses; - contingency planning and emergency procedures; and - on-going monitoring of construction procedures to ensure management of risk is maintained.	Pre-construction
Pollution Impact from Silt-laden Run-off	All earthmoving works or similar operations will be carried out in accordance with BSI Code of Practice for Earth Works BS6031:1981.	Construction
	All watercourse crossings and site discharges will be regulated under the CAR licensing regime and all necessary licences will be sought from SEPA prior to the commencement of any operations on site.	Pre-construction
	Site management will check the local weather forecast daily and prime all site staff to ensure that everyone is aware of their responsibilities to maintain the pollution control system during wet weather or suspend sensitive operations during adverse weather conditions.	Construction
Forestry Felling	Felling works will be undertaken in accordance with good practice set out in the Forestry Commission's UK Forestry Standard (Forestry Commission, 2017). This includes appropriate buffering of watercourses and management of riparian zone vegetation, implementation of a suitable drainage plan, keeping watercourses and buffer areas clear of brash as far as practicable, removing any accidental blockages, and employing methods to minimise soil damage and subsequent erosion.	Construction
Pollution Impact from Chemical Contaminated Run-off	All fuels and other chemicals to be stored in accordance with best practice procedures, including being kept within a designated fuelling site located at a safe distance from existing watercourses and in appropriate impermeable bunded containers / areas, which will be defined within the CEMP. These will be designed to capture any leakage, whether from a tank or from associated equipment such as filling and off-take points, sighting gauges etc., all of which will be located within the bunded area.	Construction

Environmental Subject Area	Environmental Commitment	Timing
	Oil booms and soakage pads will be maintained in all work areas and spill kits kept in all vehicles to enable a rapid and effective response to any accidental spillage or discharge. All construction staff will be trained in the effective use of this equipment.	Construction
	Construction vehicles and plant will be regularly maintained and all maintenance, fuelling and vehicle washing will be undertaken on appropriate impermeable surfaces away from watercourses in order to minimise risks of leaks to soil and surface waters.	Construction
	Concrete batching will be undertaken at a designated area at the temporary construction compound at the main site entrance, over 100 m from the nearest watercourse (a small drain). The Contractor will develop a method statement to address the on-site batching of concrete and the transport, transfer, handling and pouring of liquid concrete at foundations. A limited amount of water abstraction will be required to facilitate the on-site batching process. A separate CAR licence application for any water abstractions required will be made to SEPA at the appropriate point prior to the commencement of construction.	Pre-construction
	Cement, grout and unset concrete will not be allowed to enter the water environment. No operations involving concrete transfer between vehicles or into vehicles will take place within 30 m of watercourses and waterbodies.	Construction
	All vehicles used for delivery of concrete will only be washed out at locations to be agreed with SEPA. Excess concrete or wash-out liquid will not be discharged to drains or watercourses on site or at compounds. Drainage from washout facilities will be collected and treated or removed to an appropriate treatment point / licensed disposal site.	Construction
	The requirement for dewatering will be minimised in all locations by timely and efficient excavation of the foundation void and subsequent concrete pouring and backfilling.	Construction
Banking Integrity	Construction staff will be instructed to maintain a sufficient distance from the burns located on site in order to ensure there is no incursion towards the burn.	Construction
Septic Tanks	Welfare facilities will either connect directly to self-contained storage tanks or to a septic tank, subject to approval from SEPA.	Construction
	If self-contained or septic tanks are to be used, these will be maintained and emptied on a regular basis by a suitably licensed contractor	Construction and Operation
Drainage During Operation	Prior to construction, a detailed Drainage Strategy (DS) will be developed and agreed with SEPA and SLC. The DS will detail the site drainage design, including the type of surface to be used for the access track, the soft engineering and habitat enhancement measures proposed to slow surface water flows and any necessary	Pre-construction

Environmental Subject Area	Environmental Commitment	Timing
	ponds, swales, cross drains and bunds, to ensure that runoff from hard surfaces will be controlled. The DS will also detail the dimensions and final design of proposed pipe culverts for watercourse crossings which will be designed to maintain continuous flows.	
	Prior to construction, detailed design for the watercourse crossings, and the requirements for CAR authorisations or licences will be agreed with SEPA in order to ensure that fluvial geomorphological impacts are minimised during operation.	Pre-construction
Traffic and Transport		
Construction	The following good practice measures will be adopted during the construction of the Proposed Development: - preparation and implementation of a Construction Traffic Management Plan; - use of the agreed access routes to the site will be enforced by the developer, and all principal and sub-contractors; - at locations where slow moving abnormal load traffic is considered likely to cause a road hazard it is recommended that escorted traffic is complemented by advance publicity and temporary signage where necessary; - wheel washing is proposed in the vicinity of the site compound to reduce the risk of transferring any mud onto the road and to suppress any dust; - all site vehicles will be parked off-road and as discretely as possible; - preparation and implementation of a Public Access Strategy to mitigate any potential conflict between site traffic during construction and the local path network; - once final loads and transport configurations are known, an updated review of maximum axle loadings on structures along the access routes; - similarly, an updated review of clear heights; - confirmation that there are no roadworks or closures that could affect the passage of the loads; - confirmation that there are no underground services on the access route that would be at risk from any abnormal loads; and - confirmation that the relevant Police / escort authorities are satisfied with the route being used and that the appropriate roads authorities have been further contacted regarding the proposed loads and route.	Construction
	A trial run of the abnormal load deliveries will be undertaken using the proposed load trailer and a scaffold to represent the load dimensions to confirm that the loads can be safely accommodated.	Construction

Environmental Subject Area	Environmental Commitment	Timing
Decommissioning	The mitigation measures set out for the construction phase will also be implemented, where relevant, during the decommissioning stage of the Proposed Development.	Decommissioning
Socio-Economics, Tourism and Recreation		
No significant adverse effects associated with the Proposed Development were identified, therefore no mitigation measures were considered necessary		
Aviation, Radar and Telecommunications		
Radar	The impacts on the NATS primary radars will be mitigated through the blanking of the affected radars and the provision of in-fill coverage from the unaffected Terma radar at Glasgow Airport.	Pre-construction
	The impacts on the Glasgow main primary radar will be mitigated through the blanking of the radar and the provision of in-fill coverage from the unaffected Terma radar at Glasgow Airport	
Aviation Lighting	The Proposed Development will have aviation lighting to mark it as an en-route obstacle to low flying aircraft. The lighting requirements will be agreed with the CAA with the lights meeting the requirements set out in in Article 222 of the UK Air Navigation Order (ANO). It is anticipated that approximately five turbines will be lit, marking the development periphery and the highest points.	Construction and Operation
Shadow Flicker		
Mitigation during operation	Prior to the erection of the first turbine a written scheme (known as the 'Wind Farm Shadow Flicker Protocol') shall be submitted to and approved in writing by SLC. This would set out mitigation measures to alleviate shadow flicker attributable to the Proposed Development as well as protocol for addressing a complaint received from a receptor within the study area. This matter could be secured by way of an appropriately worded condition.	Operation
Forestry		
Mitigation through Design	Turbine locations were assessed against the Baseline Forest Plan and forecast crop heights in 2021 with compartments assessed to highlight the level of fit with the Baseline Forest Plan. This assessment formed the basis of a more detailed pre-application consultation and site visit with FCS to explore appropriate approaches to design and mitigation to limit forestry impacts.	Pre-Construction/ Construction
	A Wind Farm Forest Plan was designed with an acceptable fit with the Baseline Forest Plan and associated felling and replanting designs, resulting in the smallest possible impact on the overall forest when considered in the context of felling areas, harvesting volumes or replanting design.	

Environmental Subject Area	Environmental Commitment	Timing
Forest Residue Management Plan	*Merchantable Timber* -Of the Phase 2 harvesting required 32.25 ha constitutes crops which will be felled and not be replanted. These areas will be conventionally harvested using standard forestry timber harvesting and forwarding machinery, with merchantable material stacked by product at roadside ready for onward haulage to market. Brash mats will be used to support harvesting and extraction machinery and to protect underlying soils from rutting, compaction and erosion.	Construction
	Brash & Stumps - It is proposed brash mats are left in-situ within keyhole areas and areas where there is no infrastructure post-harvesting, and tree stumps in areas to be harvested and maintained as tree free will remain in-situ and allowed to degrade naturally along with the brash as per standard forestry practice. The brash and stumps generated from the Proposed Development (estimated at a total of 6,849 m^3 or 6,347T) will be sold into local markets along with material from the surrounding coupe ground being felled under Forest Plan approval	
	There will be no requirement for mulching or spreading of crops across the site.	
Compensatory Planting Plan	In accordance with best practice, and as agreed with FCS in pre-application consultation, approval is only being sought for felling directly associated with the infrastructure footprint and tree free areas under this submission.	Construction
	An area of 35.08 ha has been identified as requiring compensatory planting under the Control of Woodland Removal Policy. As agreed with Forestry Commission in pre-application consultation, this area does not include areas of ground due to be restored and replanted post-construction	
	It is proposed that the required area of compensatory planting will be delivered via a suitably worded Planning Condition. Due to the lack of appropriate open ground within the Cumberhead Forest, it is not possible to deliver compensatory planting on site, however, suitable areas have been identified on properties under the ownership of the neighbouring landowner (part of the same group of companies as the Applicant).	
	Ground for compensatory planting will be secured via a lease over the identified ground to the Applicant, with the Applicant meeting all costs for planting, protection and establishment plus associated professional costs for monitoring and management.	
	Compensatory planting will be delivered in the first planting season following commencement of the Proposed Development with forestry reports submitted to FCS in years 1, 5 and 10, detailing full stocking assessment, establishment and management recommendations.	

Environmental Subject Area	Environmental Commitment	Timing
	Delivery of the planting, establishment and maintenance will be overseen by Bidwells on behalf of the Applicant, conducting regular inspections and producing annual silvicultural management recommendations to be delivered by the Applicant in order to ensure the delivery of successful and timely tree establishment. All compensatory planting areas will be protected and insured against fire by the Applicant.	
	Target stocking density will be to achieve no less than 2,500 stems per hectare for commercial conifers, 1,600 stems per hectare for native woodland areas and 1,200 stems per hectare for W4 areas at establishment, with trees capable of onward growth without significant additional management input.	
	Establishment will be defined as the point when the average tree height is 2.0 m or more with average stocking densities as defined above. At this point FCS will be invited to inspect the compensatory planting, before seeking agreement that the compensatory planting commitment has been delivered. The Applicant will retain the lease for this period, or such additional time as may be required to deliver establishment of the compensatory planting. After the area is agreed as being established the woodland will revert to the landowner.	

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