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SCHEDULE OF MITIGATION 18

INTRODUCTION

18.1 The Schedule of Mitigation provides a summary of mitigation measures that have been proposed throughout the Environmental Statement (ES) to prevent, reduce or offset the effects of the proposed development on the environment.

18.2 Mitigation measures have been integral to the design evolution of the proposed development as described in Chapter 2: Site Description and Design Evolution. A series of environmental and technical constraints were identified to minimise potential significant environmental impacts prior to finalising the final design of the proposed development. Areas which were examined in depth include landscape and visual constraints, sensitive species and habitats, cultural heritage, operational noise and hydrological constraints.

18.3 The mitigation measures in Table 18.1 are those which would be applied during the construction and operation of the proposed development.

Table 18-1
Schedule of Mitigation

Chapter	Type of Mitigation, Compensation or Enhancement	Mitigation, Compensation or Enhancement Measures
Chapter 3: Description of the Development	Construction	**Micrositing** The agreed micrositing distance may form a planning condition accompanying consent for the proposed development. It is proposed that a 50m micrositing tolerance of turbines and all other infrastructure would be applied to the proposed development (so long as infrastructure does not move into a constrained area). Any movements from the consented locations would be subject to checking and approval of the Environmental Clerk of Works (ECoW). **Borrow Pits** The borrow area restoration would involve the contouring of the final working face to blend with surrounding ground levels or profiling back of any rock faces to allow for natural revegetation, the replacement of overburden removed from the borrow area, together with suitable material from other parts of the wind farm site. The borrow area would be allowed to re-vegetate naturally or would be seeded with native plant species in consultation with the Ecological Clerk of works. **Construction Environmental Management Plan (CEMP)** Good practice measures and mitigation would be implemented during construction to avoid and reduce impacts. These measures are set out in a draft Construction and Environmental Management Plan (CEMP) for the proposed development (ES Technical Appendix 3.1). This document identifies the environmental management, mitigation and monitoring requirements and would ensure that the principal contractor would implement mitigation measures during the construction phase. The CEMP would evolve during the different phases of the project. As such it would be subject to constant review to address: • any conditions required in the consent; • to ensure it reflects best practice at the time of construction; • to ensure it incorporates the findings of pre-construction site investigations; • changes resulting from the construction methods used by the contractor(s);

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		• unforeseen conditions encountered during construction; and • changes in best practice. The CEMP is a standalone document that would be maintained and updated on Site, and would be augmented by associated design specifications and Construction (Design and Management) (CDM) 2015 Regulations documentation such as the Principal Contractor's Construction Phase Plan.
	Pre, during and post construction	**Wind Farm Forest Plan** An outline Forestry Management Plan (OFMP) has been developed and has been included as Technical Appendix 3.2. **Compensatory Planting Plan** In order to comply with the criteria of the Scottish Government's Control of Woodland Removal Policy, off-site compensation planting would be required. The Applicant is committed to providing appropriate compensatory planting and it is considered possible that compensatory planting requirements for the proposed developments could also be met through native woodland creation under the proposed HMP relating to wildcat corridors. Further discussion with Scottish Forestry Is planned to determine whether an exception to normal compensatory planting requirements can be met in this case.
	Operation	**Aviation Lighting** The turbines are over 150m to blade tip and in line with current guidance from the CAA, are required to be lit with medium intensity (2000 candela) steady red aviation warning lights in accordance with Article 222 of the UK Air Navigation Order (ANO) 2016. A second light serving as an alternative should be provided in case of failure of the operating light. Additionally at least three (to provide 360 degree coverage) low-intensity (32 candela) lights should be fitted at an intermediate level of half the nacelle height.
Chapter 7: Landscape and Visual	Embedded Mitigation	The design of the proposed development was informed by a number of landscape and visual considerations, particularly the relationship with the Clashindarroch Wind Farm. Chapter 2: Site Description and Design Evolution provides a detailed review of the design process undertaken. In addition to the Clashindarroch Wind Farm, other landscape and visual considerations included: • selection of a turbine height which could be accommodated by the scale of

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		the landform across the Site and be reasonably consistent with the turbines of the Clashindarroch Wind Farm; • achievement of a layout which relates reasonably satisfactorily to the varied landform across the Site and the turbines of the Clashindarroch Wind Farm, when seen from multiple directions and elevations around the Site and taking account of the location of key sensitive receptors such as Tap o' Noth and the western ridgeline; • consideration of the cumulative landscape and visual impacts from a wind farm on the Site in addition to the Clashindarroch Wind Farm as well as other nearby operational, consented and proposed wind farms; and • potential visibility from the closest residential receptors particularly the Tillathrowie area to the north east and the Deveron Valley to the west. The layout of the proposed development turbines and ancillary components, with the potential to impact the landscape and visual resource, evolved through an iterative process bringing together the key considerations above. This has resulted in a layout of the proposed development consisting of 14 wind turbines, a reduction of three turbines from the scoping layout, as well as turbine repositioning. Further detail is provided in Chapter 2: Design Evolution.
	Construction	The use of existing tracks and infrastructure already in place for felling operations and the existing Clashindarroch Wind Farm has been incorporated into the design where possible to reduced environmental and landscape impacts.
Chapter 8: Ornithology	Embedded Mitigation	Mitigation has been a key consideration throughout the development of the wind farm design and in the assessment of the final proposals, and it has been addressed in the following ways: • by avoiding/minimising effects through alterations in the scheme layout design, based on available baseline data • by avoiding/minimising effects through programming and the approach to construction.
	Pre and during construction (Good Practice Measures)	**Timing and Pre-construction Surveys** Pre-construction breeding raptor and owl surveys, completed by suitably experienced ornithologists, are proposed in order to help inform the approach to the construction works and felling operations associated with the proposed

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		development so that breeding Schedule 1 species active nest sites would be protected and would not be disturbed during the breeding season.
	Operation	**Breeding Bird & Habitat Monitoring** Pre- and post-construction breeding bird surveys would be carried out for black grouse, goshawk, merlin and hen harrier. Surveys would be undertaken in the breeding season prior to works commencing (including felling) and for the first 10 years of the development (i.e. annually for the first 3 years, then in the 5th and 10th years). Following this the need for further monitoring would be reviewed. The potential increased collision risk to hen harrier, in particular, as a result of habitat change near to the proposed wind turbines would be monitored as part of the proposed post-construction breeding bird surveys and for the duration of the wind farm. If monitoring indicates a greater level of impact than has been anticipated in this assessment, then the wind farm operator would, in consultation with SNH, seek solutions to attempt to further mitigate these effects through habitat management measures. The location, extent and quality of habitat suitable for nesting hen harrier would be monitored at the start of wind farm operation and then at 5-year intervals during the lifetime of the proposed development to inform the need for any habitat management measures.
Chapter 9: Ecology	Embedded Mitigation	Mitigation has been a key consideration throughout the development of the wind farm design and in the assessment of the final proposals, and it has been addressed in the following ways: • by avoiding/minimising effects through alterations in the scheme layout design, based on available baseline data • by avoiding/minimising effects through programming and the approach to construction
	Pre / during construction / operation	**Habitat Management Plan (HMP)** An HMP would be produced and agreed with Aberdeenshire Council, prior to development commencing. The HMP would provide compensation for the habitats to be lost during construction and additional nature conservation

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		enhancements that would apply for the lifetime of the wind farm and potentially beyond. An Outline HMP (OHMP) is included in Technical Appendix 9.5: Outline Habitat Management Plan. The main aim of the OHMP with regards to non-avian ecology would be to offset the potential long-term adverse effects from the operation of the proposed development on the wildcat (*Felis silvestris*) population within the Strathbogie Wildcat Priority Area (WPA). **Wildcat Habitat Corridors** The primary methodology proposed in the HMP is the creation of habitat corridors to improve connectivity between the larger forest blocks within and near to the Strathbogie WPA. Additional objectives will be the improvement of riparian zones within the project area, the creation of artificial dens and the retaining of windthrow areas in suitable undisturbed locations (>500m from the turbines). The applicant proposes to engage with landowners in these areas in order to establish which specific locations could be acceptable for wildcat habitat creation and to discuss and agree the detailed planting plans.
	Pre-construction / Construction	**Pre-Construction Surveys** Pre-felling and pre-construction surveys for the relevant protected species (i.e. badger, bats, otter, pine marten, red squirrel and wildcat) would be completed. The results would inform detailed protection plans that would be developed prior to works commencing. The protection plans would include appropriate best practice measures to ensure that the potential adverse effects on the species during felling and construction are avoided and that the works proceed lawfully with respect to the legislation protecting the species. It is vital that significant disturbance to wildcat, especially breeding females, is avoided during the works due to the 'critically endangered' status of the population in Scotland. A set of outline SPPs have been included in Technical Appendix 9.4 which set out the proposed approach. **Wildcat SPP** An outline SPP for wildcat has been developed in consultation with FLS, SNH and SWA (see Appendix 9. 5). The following summarises the content of that document.

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		• Pre-works Survey • Tree Felling / Site Clearance • Risk of Killing / Injury to Wildcat (and other species) The following measures would be implemented during felling / construction works to minimise the risk of killing or injuring wildcats during vehicle movements and felling/clearance works: • Felling / construction would be restricted to daylight hours only (avoiding dusk / dawn periods); • Vehicle speed restrictions of <15 mph on site would be strictly imposed; and • Log stacks, brash piles and root plates would be removed from the felling areas (i.e. minimum of 250 m from the wind farm) during or immediately following felling. **General Disturbance during Works** Restricting felling to outside of the breeding season would reduce the potential impact on wildcat. FLS have committed to balancing felling for the proposed development against harvesting planned for the same period elsewhere within Clashindarroch Forest. No other felling operations would occur elsewhere within the forest at the same time as felling within the wind farm area. This would help to avoid potential cumulative disturbance effects on the same individual wildcat territories. Artificial lighting may be required during the works, such as vehicle and plant headlights and warning lights. Restricting works to daylight hours would help to minimise any potential impacts on wildcat from artificial lighting. Additionally, lighting at the construction compound and areas of works will be directional and light spill will be avoided to surrounding woodland.

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		Resting Places - Disturbance No felling / construction works would be carried out within 250 m of any potential wildcat resting place (i.e. including all features that could provide suitable enclosed denning or above ground shelter) until sufficient monitoring has been carried out to determine that the site is not a resting place. What constitutes sufficient monitoring would be agreed in advance with SNH though consultation on the survey method statement. If the monitoring evidence confirms, or indicates, that the feature is in use as a resting place then altering the felling / construction plan would be considered so that any impact on the site can be avoided. Where that is not possible SNH would be consulted on the appropriate course of action, whether an EPS derogation licence could be granted and under what circumstances. If the evidence from monitoring is sufficiently convincing to conclude that the site is not used by a breeding female then, depending on the circumstances, if disturbance cannot be avoided, an EPS derogation licence would be sought. This would require an assessment of the potential impacts on the wildcat population and details of the proposed mitigation in the form of a site-specific protection plan. If the resting place is confirmed or suspected to be used by a breeding female then a protection zone would be established, at least 200 m around the site, and no felling or other work would be carried out in that zone until SNH has been consulted on the monitoring evidence and the appropriate course of action. Due to the conservation status of the species SNH have advised that they may not be in a position to permit the disturbance of a wildcat breeding site. This assessment would have to be made on a case-by-case basis. It is important to note that a proven wildcat resting place is legally protected whether it is in current use or not. **Resting Places - Destruction** If the felling / construction plans cannot be altered to avoid destruction of a non-breeding resting place then SNH would be consulted on whether, under the specific circumstances, an EPS derogation licence could be granted. This would require an assessment of the impact on the wildcat population and details of the proposed mitigation in the form of a site-specific protection plan. For example, mitigation could include the creation of at least three features suitable as wildcat resting places in suitable locations in the surrounding area (i.e. adjacent to suitable habitat, >500 m from the wind farm). For confirmed or suspected breeding sites the only course of action would be to establish a protection zone (at least 200 m wide, surrounding the site). No felling or other work would be carried out until SNH has been consulted on the

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		monitoring evidence and the potential options for mitigation. This assessment would have to be made on a case-by-case basis. As stated above in relation to disturbance, it may not be possible to obtain an EPS licence to allow the destruction of a wildcat breeding site, even if it is not in use at the time. **Watching Brief / Works Supervision** There would be a watching brief in place during the felling and construction operations to help ensure that the relevant SPP measures are correctly and consistently applied and also to react to any new evidence of wildcat that may be found during the works. This would be the responsibility of the appointed ECoW. **Species Protection Plans (excluding wildcat)** Species Protection Plans (SPPs, for each relevant species) would be developed by a suitable experienced ecologist, and agreed in consultation with SNH, in advance of works commencing on the site. The SPPs would set out in sufficient detail the measures and procedures that would be followed to ensure the protection of sensitive species as well as legally protected species during construction. Outline SPPs have been included in Technical Appendix 9.4. The SPPs would detail the pre-construction survey methods for each species (i.e. badger, bats, otter, pine marten, red squirrel and wildcat). To ensure that the baseline information for all potentially-affected protected species is up-to-date, surveys would be undertaken not more than 8 months prior to the commencement of works (including felling) construction. The pre-construction surveys would be completed in all areas of suitable habitat up to 250 m around proposed turbine locations, felling areas, access tracks and other wind farm infrastructure. The SPP would also detail the measures, for each species, to ensure that the effects of felling / construction works are avoided, or minimised as far as is practically possible, and that the works proceed lawfully with respect to the legislation protecting the species. Additionally, as part of standard FLS procedures in preparation for felling, there would be an assessment made of the current status of the populations of key species within the area (including red squirrel and pine marten) to inform the felling workplan process and ensure that appropriate mitigation measures for each species are put in place as required.
	Construction	**Construction and Environmental Management Plan (CEMP)** The environmental protection measures during construction and site

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		restoration works would be outlined in a Construction and Environmental Management Plan (CEMP). The outline content of the CEMP is provided in Technical Appendix 3.1. The CEMP would be prepared following the determination of the application and would include an outline of the proposed approach to construction methods and environmental protection during all aspects of construction works. The CEMP would be agreed in consultation with SEPA, SNH and Aberdeenshire Council. The CEMP would include detailed Method Statements based on best practice for: • pollution prevention measures, site drainage, water monitoring and sensitive habitat protection (including buffers around GWDTEs), as outlined in Technical Appendix 3.1; and • instructions on how to use and store excavated soils and translocated vegetation turfs for site road verges and batters, wind turbine bases and crane pad batters; as well as restoration techniques and monitoring methods. Damage to sensitive habitats would be reduced, as far as possible, prior to, during and following construction works. These would include measures outlined in the publication 'Good Practice during Windfarm Construction' by Scottish Renewables et al. (2019) and the latest edition of the Forestry & Water Guidelines (Forestry Commission 2011). Tree felling operations would be undertaken with conventional harvesting and forwarding equipment with low ground pressure (flotation) tracks, as required, to minimise ground disturbance during the forestry operations. The phasing of clear-felling to reduce acidification risk to freshwater habitats from acidic episodes and associated aluminium solubility draining from peaty soils would be detailed within the Felling Plan. The proposed phases of felling are outlined in Technical Appendix 3.2. Disturbance to soils and peat during the felling process would be further reduced by the use of brash mats for the harvesting and forwarding machinery to run on. As a result of their use, the brash mats would be compacted and would be left in situ to breakdown naturally as there would be a risk of causing further damage and risk of polluted run-off affecting nearby watercourses if the brash were removed or attempted to be removed. Within the felling areas, tree stumps and root-plates would be left in situ, apart from where it is necessary for construction works (e.g. along the route of proposed access tracks, at proposed borrow pit sites, turbine bases and crane pads).

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		If consented the proposed development would appoint suitably experienced and qualified ECoW for the duration of the pre-works, construction and site restoration phases. The ECOW would oversee the implementation of ecological mitigation / environmental protection measures during construction. The ECoW would be impartial and have the authority to stop works immediately should any environmental issues arise. The appointment of the individual(s) covering the ECoW role would be agreed in advance in consultation with SNH. The ECoW would provide monthly reports on the progress of the works in relation to the implementation of the environmental protection measures (including measures under the outline SPP) and a final report at the end of the construction and site restoration works. Copies of the reports would be provided to SNH and SEPA. The ECoW would be integral in the successful implementation of the CEMP and the Species Protection Plans. **Fisheries Management Plan** An outline Fisheries Management Plan (FMP) has been agreed in consultation with fisheries biologists form the Deveron, Bogie and Isla Rivers Charitable Trust (see Appendix 9.6). The outline FMP would be developed in detail, in consultation with the Trust, well in advance of works (including felling) commencing on the site. The FMP would set out in sufficient detail the proposed fish and water quality monitoring regime prior to, during and following construction. It would also set out the measures and procedures that would be followed to ensure the protection of fish and fish habitats during the works.
	Operation	**Wildcat** A wildcat monitoring programme would be implemented during the operational phase of the proposed development. A detailed monitoring plan would be developed in consultation with SNH, SWA and FLS (and any other interested parties) in advance of works commencing on the proposed development. The main objectives would be to determine the extent to which wildcat behaviour has been influenced by the presence of the wind farm, inform decisions on any changes to wind farm operational mitigation and to assess the development and effectiveness of the habitat enhancement measures proposed under the HMP.

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		Bats If the proposed permanent aircraft warning lighting is fitted to the wind turbines and the option of a radar activated lighting system is not implemented a bat activity monitoring and mitigation plan will be developed, in consultation with SNH, prior to wind farm operation. The proposed bat activity monitoring will assess the potential for the proposed lighting to act as an attractant to bats and to increase the risk of bat mortality from the operating wind turbines (NB most published studies that have considered this issue have not found that red aviation warning lighting on wind turbines attracts bats. However, in most cases this was in relation to flashing rather than steading burning lights, some studies have shown that migratory bats can be attracted to steading burning red lighting). **Operation General Best Practice Measures** During the operation of the wind farm, general maintenance would be required on the wind turbines and tracks. All access to areas requiring maintenance would be confined to areas previously used for construction activities with no new access tracks constructed. Method statements for all potential maintenance and emergency maintenance works would be developed in accordance with best practice for both terrestrial and freshwater habitats and therefore protected species.
Chapter 10: Cultural Heritage	Embedded Mitigation	The proposed development has undergone a number of design iterations and has evolved in response to all environmental and technical constraints identified as part of the baseline research. The final proposed layout as shown on Figure 10.1 has therefore embedded design-based mitigation in order to avoid heritage assets where ever possible and to reduce the magnitude of direct impacts where heritage assets cannot be completely avoided.
	Construction (Watching Brief)	Mitigation in relation to most heritage assets has been embedded into the design of the proposed infrastructure, in order to avoid direct impacts wherever possible. For the assets listed in Table 10-7 additional, appropriate mitigation would be undertaken in the form of: • fencing off assets that might be accidentally damaged during construction works; and • a watching brief on the elements of the ground works that would have a

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		direct impact on the heritage assets. The precise scope of the watching brief would be negotiated with Aberdeenshire Council and the agreed mitigation programme would be documented in a Written Scheme of Investigation.
Chapter 11: Hydrology, Hydrogeology & Geology	Embedded Mitigation	The proposed development has undergone design iterations and evolution in response to the hydrological and hydrogeological constraints identified as part of the baseline studies and field studies so as to avoid and/or minimise potential effects on receptors where possible. This has included watercourse locations, areas of potential flooding and GWDTEs. In accordance with wind farm construction best practice guidelines, a 50m buffer was applied between watercourses and any proposed construction activities or infrastructure within the Site. The layout of the proposed access track was designed to minimise the requirement for any additional watercourse crossings. The existing access track watercourse crossings would be used and upgraded where required.
	Pre-construction	During the pre-construction phase, pragmatic and appropriate requirements would be discussed with stakeholders at the two identified Private Water Supplies (PWS) at Corrylair and Wester Tillathrowie in advance of construction activities. These would include: • pre-construction surveys and discussions with owner/occupiers of the identified PWS; • consideration of measures to mitigate for temporary supply interruption to be agreed prior to works at the identified PWS; • water level and quality monitoring before, during and after construction at all eight identified PWS. The water quality monitoring plan would be developed during detailed design and AC, SEPA and the DDSFB would be consulted on the plan and the agreed plan would be contained within the final CEMP.
	Construction	**Construction and Environmental Management Plan** The CEMP will outline the necessary surface water management, oil and chemical delivery and storage requirements, waste management, traffic and transport management and would specify monitoring requirements for waste

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		water, water supply including an Environmental Incident Response Plan (EIRP) and all appropriate method statements and risk assessments for the construction of the proposed Development. Prior to construction, section specific drainage plans would be produced. These would take into account any existing local drainage which may not be mapped and incorporate any section 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, 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. As identified in the outline CEMP (Technical Appendix 3.1), a specialist spill response contractor would be identified to deal with any major environment incidents. 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 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. Good practice measures would be applied in relation to pollution risk, sediment management, peat management and management of surface runoff rates and volumes. This would form part of the Construction Environment Management Plan (CEMP) to be implemented for the proposed Development and would be prepared prior to construction. **Pollution Risk** Good practice measures in relation to pollution prevention would include the following: • refuelling would take place at least 50m from watercourses and where possible it would not occur when there is risk that oil from a spill could directly enter the water environment. For example, refuelling during periods of heavy rainfall or when standing water is present would be avoided;

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		• foul water generated onsite would be managed in accordance with best practice and would be drained to a sealed tank and routinely removed from Site; • drip trays would be placed under vehicles when parked, if the vehicles could potentially leak fuel/oils; • areas would be designated for washout of vehicles which would be a minimum distance of 50m from watercourses; • washout water would also be stored in the washout area before being treated and disposed of; • if any water was found to be contaminated with silt or chemicals, runoff would not be allowed to 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 the storage of fuels and other potentially contaminative materials in line with the Water Environment (Oil Storage) (Scotland) Regulations 2006, to minimise the potential for accidental spillage (e.g. stored in 110% bunded storage facilities); 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. The possibility of a pollution event occurring during the operation phase is considered very unlikely. There would be a limited number of vehicles required onsite for routine maintenance in addition to the Applicant's operational presence. Storage of fuels/oils onsite would be limited to the hydraulic oil required in turbine gearboxes and this would be bunded (satisfying storage guidance) to prevent fluid escaping. **Erosion and Sedimentation** Good practice measures for the management of erosion and sedimentation would include the following: • all stockpiled materials would be located more than 50m from watercourses; • water would be prevented as far as possible, from entering excavations through the use of appropriate cut-off drainage; • where the above is not possible, water that enters excavations would pass through a number of settlement lagoons and silt/sediment traps to

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		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 onsite would be separated and dirty water would be filtered before entering the stream network; • if materials were to be 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; • where required stockpiled material would either be seeded or appropriately covered, minimising the area of exposed bare ground; • a design of drainage systems and associated measures to minimise sedimentation into natural watercourses would be developed. This could include silt traps, check dams and/or diffuse drainage; • 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. **Fluvial Flood Risk** Sustainable Drainage Systems (SuDS) would be incorporated as part of the proposed development. 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: • drainage systems would be designed to ensure that any sediment, pollutants or foreign materials which could 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 could reduce the efficiency of the original drainage design causing localised flooding; • appropriate drainage would attenuate runoff rates and reduce runoff

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		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 would 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 would be made familiar with the implementation of these. **Water Abstraction** Abstraction of water for construction activities is proposed from the existing abstraction borehole within the site boundary, licence number CAR/R/1116526. Good practice that would be followed in addition to the CAR Licence regulations includes: • 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. **Water Course Crossings** Two additional water crossings are required for the proposed development as detailed within Chapter 3: Description of the Development. The locations of existing watercourse crossings that would be used on the existing access track are shown on Figure 11.1. Crossings that would require upgrade are also shown on Figure 11.1. • A schedule of all watercourse crossings is shown as Technical Appendix 11.3. Design details for the two proposed watercourse crossings and the upgraded crossings would be agreed with SEPA as part of the detailed site design. All engineering works would be undertaken in accordance with a Controlled Activity Regulations (CAR) Licence. **Forestry Felling** The forestry management plan would include contingencies for possible events

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		such as severe weather. The plan would describe how the Site would be set out and worked to reduce the risk of adverse effects. This would cover the selection of cultivation techniques to minimise disturbance, such as mounding or scarification, and the appropriate matching of harvesting machinery to ground conditions. The timing of operations to avoid adverse weather and ground conditions, and the strict enforcement of protective riparian buffer areas would also be covered in the plan. Detailed consideration of the required felling and of forest management are given in Technical Appendix 3.2: Forestry
	Construction and Post Construction	**Water Quality Monitoring** Water quality monitoring during the construction phase would be undertaken for the surface water catchments that drain the Site, 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. This 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 to assess the impact of good practice or remedial measures. Monitoring frequency would increase during the construction phase if remedial measures to improve water quality were required to be implemented. The water quality monitoring plan would be developed during detailed design and AC, SEPA and the DDSFB would be consulted on the plan and the agreed plan would be contained within the final CEMP.
Chapter 13: Highways, Traffic & Transport	Construction	**Construction Traffic Management Plan (CTMP)** An Outline CTMP has been provided with this consent application (Technical Appendix 13.4) which is designed to provide preliminary details of proposed traffic management measures and associated interventions that would be implemented during the construction phase of the proposed Development in order to minimise disruption and ensure safety. The Outline CTMP would be supplemented with additional information as appropriate by Vattenfalls's appointed contractor(s), prior to commencement of construction activities. Should consent be granted, the Outline CTMP would be updated to a CTMP, the content of which would be agreed with AC through consultation and enforced via a planning condition. The CTMP would be used during the construction phase of the proposed Development to ensure traffic to, from and on the site is properly managed.

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		The Outline CTMP describes the following measures: **Signage** - Any signage required on the public highway would be erected and positioned in accordance with the requirements of the Traffic Signs Manual and Safety at Street Works and Road Works – A Code of Practice, and in consultation with the A&BC. Any permanent signs and street furniture which are required to be relocated to allow abnormal loads to pass shall be identified in consultation with A&BC and through the trial run. Warning signage on the Site must be complied with at all times. The two most important signs are "no entry" and "no unauthorised vehicles". In order to proceed beyond these signs, vehicle drivers must stop and contact the ganger/ foreman in control of the area to be escorted through the local area. **Abnormal Load Management** - An Abnormal Loads Assessment would set out the key points and issues associated with the selected route for the abnormal loads, to verify that the route is feasible for the selected turbine delivery, subject to physical and operational mitigation works. Detailed abnormal load delivery traffic management measures would need to be identified and included in the final CTMP (or provided as stand-alone report) setting out the mitigation required to address the potential issues the Abnormal Loads Assessment might identify. Prior to the movement of abnormal loads, extensive public awareness is required to allow residents to plan and time their journeys to avoid disruption. The haulage Contractor shall remain responsible for obtaining all necessary permits from the relevant road and bridge authorities along the access route. The movement of abnormal loads will be timed to avoid periods of heavy traffic flow (i.e. it is proposed to move the loads during the night) to minimise disruption to the public. Specific timing restrictions imposed by the police or local authority have not been determined at this stage. Through urban areas temporary parking restrictions may be necessary to guarantee a clear route for the abnormal loads, and these need to be arranged in advance through the appropriate local authority. The parking restrictions would need to be locally enforced. Due to the size of vehicles required to transport these loads, escorts would be required for the entire route to control oncoming and conflicting traffic. **Adverse Weather Conditions -** All works would be forward planned wherever practicable taking into account the anticipated weather conditions. At the start of the day, the Site foreman would assess the weather conditions prior to permitting their operatives to access the Site. Due to the location and topography of the Site the weather can be severe, resulting in an adverse effect on visibility. The weather would be constantly monitored and if necessary, all plant / vehicle movements would be stopped / suspended by the Site foreman if they deem it is unsafe for work to continue. The site foreman

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		would assess the track and site conditions at the start of each day to determine if conditions are suitable to allow access to plant or vehicles. During winter or poor weather, a separate procedure would be introduced to allow the track conditions to be communicated to all parties accessing the Site. An assessment would be carried out every morning by the general foreman or the foreman in control of site operations which would then be communicated to the gatehouse. Contractors should contact the Principal Contractors general foreman to find out the situation at the Site prior to arrival to the Site, if required. All Contractors would be required to make their own assessment of track conditions during access or egress from the Site and take appropriate action determined during their assessment. During the course of the day, and in the event of weather conditions deteriorating, the Principal Contractor would notify the nominated personnel from the Contractors on site to the present condition. Contractors would be reminded that they have a duty to consider the weather and track conditions throughout the day and come back down off the hillside if they feel unsafe at any time. **On-Site Management** **On-site Safety** - All personnel entering the working area would wear hi-visibility vest or jacket, head protection, safety footwear, eye protection and gloves at all times when out with the vehicle. Everyone required to work within the Site would be made aware that they have a responsibility for the safety of themselves and others. All site operatives and visitors have a “duty of care” to themselves and others and need to be conscious of the surroundings and ongoing activities locally. In the event of an emergency, right of way to all emergency services would be given at all times. Emergency services and control of access would be carried out in compliance with the Site emergency procedures. **Parking** - Parking areas located at the Site construction compound would have safe and secure barriers to segregate all personnel from site plant and vehicle routes. All signage within designated car parking areas must be followed, with no vehicles parked in a way which restricts either vision or access. No parking whatsoever would be allowed on public roads; all cars that are directed to the Site car park would be required to reverse park to comply with ScottishPower Renewables and the Principal Contractors requirements. **On-Site Tracks** - Access tracks would be monitored on a daily basis to identify any deterioration of the track condition. Non-emergency remedial works to the track would be carried out at times outside peak times of usage and significant emergency repairs would be undertaken immediately and adjacent track sections would be restricted from use as required to safely accommodate works. All routes would be monitored for dust and control or suppression

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		methods would be deployed as appropriate through the use of towed dust suppression systems. **Site Traffic** - All traffic visiting the Site would be required to report to site security where they would obtain clear instructions, before further movement is acceptable. If applicable an induction would be completed, vehicle permits would be issued, and the Site rules & emergency procedure would be explained. All traffic would use the signed site passing places and all drivers would accommodate other track users in a courteous manner. Reversing (other than to park) within the compound areas is not permitted. Full time site traffic (vehicles/plant situated on-site for majority of construction phase) that requires re-fuelling would follow the instructions supplied at their induction and also the guidelines within their method statement for the works. Heavy site traffic would be equipped with audible reversing warning with additional visual aids e.g. reversing cameras, mirrors utilised on all plant. All safety features must be inspected on a daily basis with faults immediately reported to the Foreman Fitter who would assess and repair any damage to the plant. Management would ensure that all loads are covered fully to limit the loss of material in transit. **Vehicle Cleaning** - A method of ensuring vehicles leave the site clean and do not transport dirt onto the A920 would be operated within the Site to ensure materials are not transferred onto the highway, and road cleaning would take place when required to remove any deposits that are carried from the Site. **Driving and Speed Restrictions** - All vehicles (cars, LGVs, HGVs and ALs) shall be driven in a safe and defensive driving manner at all times within speed limits. A zero-tolerance policy shall be adopted by all Contractors, such that any infringement results in that person not returning to site. All cars and drivers of site operative vehicles used for commuting to and from site must be road worthy and legally compliant. All commercial vehicles and drivers must be road worthy and legally compliant.
	Construction	**Abnormal Indivisible Loads (AIL)** An abnormal load assessment has been carried out and is included as Technical Appendix 13.1. Abnormal load deliveries would be carried out during daylight hours, for safety reasons, and outside of typical peak hours to minimise disruption and delay on the local and wider road network. Once vehicle details are known, the haulier would provide load specifications to each affected road authority so that the suitability of the structures along the route can be re-confirmed, prior to undertaking any deliveries. Turbine deliveries should be timed to avoid peak

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		times and school start / finish times. This measure would also ensure deliveries occur during times when pedestrian activity is lower. All abnormal load deliveries would be undertaken using Police escort vehicles to control other road users where abnormal loads are required to use the whole carriageway to complete a manoeuvre or where a narrow section of the route requires single file running. The mitigation works proposed on the turbine delivery route would ensure that the largest vehicles are able to negotiate the various junctions and other constraints safely and without undue delay. Street furniture would be temporarily removed to enable the vehicles to over sail the verges and footways as required. The haulier would provide load specifications to each affected road authority so that the suitability of the structures along the route can be re-confirmed, prior to undertaking any deliveries.
Chapter 14: Noise	Embedded Mitigation	In relation to operational noise, adverse operational and cumulative noise effects were intrinsic considerations in the design of the proposed development to avoid any long-term effects that could affect the planning consent of the proposed development and/or nearby noise-sensitive receptors. The proposed development has therefore been designed to ensure that effects from operational noise are not significant, mainly through siting of the turbines
	Construction	**Good Practice Measures** The adoption of Best Practicable Means is the most effective means of controlling noise from construction sites. The precise noise mitigation measures to control noise from construction activities, with respect to the proposed development, may require agreement with the Aberdeenshire Council prior to the works starting. However, generic measures are provided below to illustrate the range of techniques available: • All roads would be kept clean and maintained in a good state of repair to avoid unwanted rattle from vehicles; • Materials would be handled in a manner that minimises noise; • All plant would have noise emission levels that comply with the limiting levels defined in EC Directive 2000/14/EC (Ref. 14.14) (and UK Statutory Instrument 2001/1701 (Ref. 14.15)), and any subsequent amendments; • Consideration would be given to the recommendations set out in Annex B of BS5228-1:2009+A1:2014 with respect to noise sources, remedies and their effectiveness; • Plant would be operated in a proper manner with respect to minimising noise emissions, i.e. minimisation of drop heights, no unnecessary revving

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		of engines, etc.; • Plant would be started up sequentially rather than all at once; • Plant would be subject to regular maintenance and kept in good working order to meet manufacturers' noise rating levels; • Plant that is used intermittently would be shut down when not in use; • Vehicles would not wait or queue on the public highway with engines idling; and • Reversing alarms would incorporate one of the following features where practicable – directional sounders, broadband signals, self-adjusting sounders or flashing warning lights. Alternative and comparable systems could be used to minimise noise and nuisance from reversing alarms. Experience from other sites has shown that by implementing these measures, typical noise levels from construction activities could be reduced by 5dB or more. Problems concerning noise from construction works can sometimes be avoided by taking a considerate and neighbourly approach to relations with local residents. Works should not be undertaken outside the hours agreed with the local authority.
	Construction	If blasting is to be employed at some of the borrow pits, the potential noise and vibration effects of blasting operations would be reduced (unless otherwise agreed with A&BC due to important separation distances) according to the guidance set out in the relevant British Standards and PAN50 Annex D: • blasting should take place under controlled conditions with the agreement of the relevant authorities, at regular times within the working week, that is, Mondays to Fridays, between the hours of 10:00 and 16:00. Blasting on Saturday mornings should be a matter for negotiation between the contractor and AC; • vibration levels at the nearest sensitive properties are best controlled through onsite testing processes carried out in consultation with AC. This site testing-based process would include the use of progressively increased minor charges to gauge ground conditions both in terms of propagation characteristics and the level of charge needed to release the requisite material. If required, the use of onsite monitoring at neighbouring sensitive locations during the course of this preliminary testing can then be used to define upper final charge values that would ensure vibration levels remain within the criteria set out previously, as described in BS 5228-2 and BS 6472-2; • blasting operations would need to adhere to good practice as set out in BS

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		5228-2, and in PAN50, Annex D, Paragraph 95 in order to control air overpressure; and • a scheme would be submitted to AC for approval of blasting details, which would outline the mitigation measures to be adopted.
Chapter 15: Aviation	Operation	**Aviation Lighting** All 14 of the proposed wind turbines would be at or above 150m, in height, in respect of the proposed development. As such, these turbines would require lighting under the Air Navigation Order (ANO). It is proposed that visibility sensors be installed on turbines. Should atmospheric conditions mean that visibility around the site is greater than 5km, lights would operate in a lower intensity mode of 200 candela. If visibility is restricted to 5km or less for example by, low cloud cover, rain, mist, haze or fog) lights would operate at 2000 candela. It is also proposed to investigate methods of radar operated lighting, noting that such systems are not yet approved for use in UK airspace. In terms of charting, there is an international civil aviation requirement for all structures of 300 feet (91.4 metres) or more to be charted on aeronautical charts. Accordingly, such structures should be reported to the Defence Geographic Centre (DGC) which maintains the UK's database of tall structures (the Digital Vertical Obstruction File) at least 6 weeks prior to the start of construction to enable them to be marked on civil and military aeronautical charts. The DGC will require the accurate location of the turbines / meteorological masts, accurate maximum heights, the lighting status of the turbines and / or meteorological masts and the estimated. **NATS Allanshill PSR** A technical solution has been recognised by NATS to mitigate En Route operational impacts; it involves the implementation of a plot suppression zone which comprises blanking of the Allanshill PSR and providing infill coverage from the Perwinnes PSR. This solution is known as blocking infill. Blocking infill uses 'terrain shielding' such that the remote sensor cannot detect the turbines due to intervening terrain, thus providing clutter-free returns from the area above the turbines. The applicant has entered contract negotiations with NATS for technical mitigation of the Allanshill PSR. The technical mitigation solution would remove turbine effects to the Allanshill PSR.

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		MOD Buchan ADR The Buchan ADR has been upgraded to TPS77 radar standard which is able to provide an inherent mitigation capability. The upgraded radar should have resilience, utilising hardware and software, to wind turbine induced clutter through the use of pulse Doppler processing. However, where the inherent radar performance is not considered to be satisfactory for ADR purposes, the TPS77 has an enhanced signal processing capability which enables the implementation of a Non-Automatic Initiation Zone (NAIZ). A NAIZ prevents the radar from automatically creating tracks from any returns that originate within the NAIZ. In creating an NAIZ around a wind farm, none of the turbine returns are processed, thereby significantly reducing the possibility of unwanted tracks. Tracks which have been formed from returns originating outside the NAIZ (an aircraft transiting through the NAIZ), would still be tracked as it transits through the NAIZ. The MOD have previously assessed and accepted a mitigation solution based on a NAIZ technical solution for the 16 wind turbine layout. However the MOD Scoping Opinion for the 14 wind turbine layout reversed their previous acceptance of the mitigation solution as the windfarm parameters had changed. The applicant is in discussion with the MOD in order to reach agreement that the suggested mitigation solution provides a volume of airspace above the proposed development which achieves agreed performance metric when the mitigation is in place; a technical mitigation solution will be agreed with the UK MOD prior to construction of the proposed development.
Chapter 16: Socio-economic, Tourism, Recreation & Land Use	Construction	**Public Access** Public access across the Site would need to be managed during construction for safety reasons, and recreational users may need to be excluded from parts of the Site for periods of time. Measures for ensuring public safety during construction will be set out in the Construction Environmental Management Plan (CEMP), an outline of which is provided at Technical Appendix 3.1, and periods of exclusion would be kept to the minimum necessary for safe working. The CEMP will set out measures to ensure that recreational users of the Site are informed of the construction work and directed into safe areas where there would be no conflict with plant and machinery.

Chapter	Type of Mitigation, Compensation or Enhancement	Mitigation, Compensation or Enhancement Measures
Chapter 17: Other Issues	Operation	If interference to television reception occurs which is linked to the operational phase of the proposed development, this would be addressed using reasonable measures such as survey work and, if required, the installation of satellite television or upgrades of the current antennae system.