



Appendix 14.1

Schedule of Commitments

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14 Schedule of Commitments

14.1 Introduction

1. The Schedule of Commitments provides a summary of good practice, mitigation measures and commitments that have been proposed throughout the Environmental Impact Assessment Report (EIAR) to prevent, reduce or offset the effects of the Proposed Development on the environment.
2. The mitigation measures and commitments in **Table 14.1** are those which would be applied prior to construction, during construction and during operation of the Proposed Development. A number of these measures are embedded mitigation, undertaken through good practice and to adhere to relevant legislation during all stages of the Proposed Development.

14.2 Schedule of Commitments

EIAR Chapter	Matter/Effect Requiring Mitigation	Timing/Phase	Mitigation
Chapter 4: Development Description	Access to Site	Pre-Construction	<p>Prior to construction, any required consents for improvement works to public roads would be sought, and works undertaken in accordance with such consents and appropriate highway safety measures would be agreed with South Ayrshire Council as part of the Ayrshire Roads Alliance, Dumfries and Galloway Council and Transport Scotland, with necessary signage or traffic control measures implemented throughout the construction phase on the agreed basis.</p> <p>Road upgrading works will be required along the C46W to accommodate abnormal loads. Until such time as a candidate wind turbine is selected and a detailed route to site assessment is undertaken, specific upgrades required are not known. However, the Applicant has undertaken an appraisal of potential significant effects at the time of writing. This Proposed Offsite Access Route Appraisal is included in Appendix 4.1 of the EIAR.</p> <p>The upgrading works will be subject to a separate consent from the Proposed Development and it is anticipated that much of the works will fall under permitted development. It is anticipated that consenting approach for the proposed offsite access works will be included as a Grampian condition to the Proposed Development consent.</p>
	Access	Construction	<p>It is proposed that the wind turbines would be delivered to the King George V Dock in Glasgow. The wind turbines would be moved from the dock to the Site under escort. From the King George V Dock, the wind turbines would be moved west along Kings Inch Drive to the M8, where they would travel east before travelling south along the M74/M6 to the A75 and U52w then on to the A714 where they would travel north and onto the C46W public road before accessing the Site.</p>
	Access track material	Construction	<p>All new access tracks would be made of locally sourced stone (from onsite borrow pits or imported from local quarries).</p>
	Construction Environmental Management Plan (CEMP)	Construction	<p>The Principal Contractor (PC) responsible for undertaking the construction works would produce a CEMP. An Outline CEMP is provided in Appendix 4.2 Outline Construction Environmental Management Plan of the Environmental Impact Assessment Report (EIAR).</p> <p>The CEMP would be developed in accordance with ScottishPower Renewables (the Applicant), Scottish Natural Heritage (SNH)¹, Scottish Environment Protection Agency (SEPA), and Forestry Commission Scotland², Historic Environment Scotland (HES), Marine Scotland Science and Association of Ecological Clerk of Works (EcoW) guidance on Good Practice During Wind Farm Construction (SNH, 2019).</p> <p>The PC would consult with the Scottish Ministers, NatureScot³, SEPA, HES and South Ayrshire Council on the production of the CEMP.</p> <p>The CEMP would describe how the PC would ensure suitable management of, but not limited to, the following environmental issues during construction of the Proposed Development:</p> <ul style="list-style-type: none"> • noise and vibration; • dust and air pollution; • surface and groundwater; • 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 incidence response (for both land and water); and • Site operations (including maintenance of the temporary construction compounds, working hours and safety of the public). <p>The CEMP would form an overarching document for all Site management requirements, including:</p> <ul style="list-style-type: none"> • Traffic Management Plan; • Construction Methodology Statement; • Pollution Prevention Plan (including monitoring, as appropriate); • Site Waste Management Plan;

¹ Now known as NatureScot..

² Now known as Scottish Forestry.

³ Formerly known as SNH.

EIAR Chapter	Matter/Effect Requiring Mitigation	Timing/Phase	Mitigation
			<ul style="list-style-type: none"> • Peat Management Plan; • Water Management Plan; and • Access Management Plan.
	Construction hours	Construction	Working hours would be agreed by the appointed PC and the Applicant prior to works commencing. However, normal construction hours would be between 07:00 and 19:00 Monday to Friday and 07:00 to 13:00 on weekends, or as agreed with the South Ayrshire Council's Environmental Health Officer (EHO). Due due to weather conditions and health and safety requirements, some generally quiet activities, for example abnormal load deliveries (which are controlled by Police Scotland) and also the lifting of the wind turbine components, may occur outside the specified hours stated.
	Micrositing	Construction	During the construction process there may be a requirement to microsite (i.e. refine to a limited degree) elements of the Proposed Development infrastructure (e.g. due to unsuitable ground conditions or environmental constraints). A 50 metre (m) micrositing tolerance of wind turbines and all other infrastructure is proposed for the Proposed Development. Within this micrositing distance any changes from the consented locations would be subject to approval of the ECoW as required and in consideration of other known constraints.
	Environmental Clerk of Works	Construction	An ECoW would be onsite during the construction phase. The ECoW would ensure that the construction activities undertaken by PC are carried out in accordance with the mitigation measures contained within the CEMP and any planning conditions relating to environmental matters, and this would be monitored by the Applicant. The services of other specialist environmental advisors, such as an Archaeological Advisor, would be procured to support on specific environmental issues as required.
	Soil storage	Construction	Necessary excavations would be made initially by stripping back the soil from the area to be excavated. This soil would typically be stored separately, either in a mound adjacent to the excavation area for backfill, if required, or stored at a designated area onsite for further use or reinstatement of temporary works areas. The handling of soils would be undertaken in accordance with best practice techniques.
	Drainage	Construction	<p>A detailed drainage design would be undertaken and submitted to the Scottish Ministers, in consultation with the SEPA, for approval prior to construction.</p> <p>Should surface water run-off or groundwater enter the excavation during construction of the wind turbine foundations, appropriate pumping measures away from watercourses will be implemented to ensure the works are safely carried out and the excavation is sufficiently dry to allow concrete placement.</p>
	Forestry (felling/compensatory planting)	Construction	<p>It is anticipated that construction of the Proposed Development would require approximately 223.48 hectares (ha) of advanced felling. The requirements and undertaking of felling would be in close consultation with FLS, Scottish Forestry and documented in the Forestry Report which is contained in Appendix 13.1 Forestry of the EIAR. Figure 13.1.6 Windfarm Felling Plan and Figure 13.1.7 Windfarm Restocking Plan of the EIAR illustrate the proposed tree felling and restocking required for the construction of the Proposed Development.</p> <p>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 extent, location and composition of such planting would be agreed with Scottish Forestry and would take into consideration any revision to the felling and restocking plans prior to the commencement of operation of the Proposed Development.</p>
	Temporary Construction Compound	Construction	The main Temporary Construction Compound area would house temporary portable cabin structures to be used as the main construction office and welfare facilities, including toilets, clothes drying and kitchen, with the provision for sealed waste storage and removal. It would also be used for the storage and assembly of certain components, containerised storage for tools and small parts, and oil and fuel storage. Adequate parking would be provided for cars and light vehicles. A portable cabin would be located at the entrance to the compound and used by staff responsible for controlling access to the Temporary Construction Compound and Site, which would also house the mandatory signing in and out procedure for the Site. The smaller compound area would house some of these temporary construction related facilities, but on a smaller scale. A concrete batching plant would be located within the main Temporary Construction Compound and would comprise aggregate and cement hoppers, water bowsers/tanks, a mixer and a control cubicle. Aggregates and sand would be stockpiled and contained adjacent to the plant. It would be necessary to provide a limited private water supply and foul drainage.
	Borrow pits	Construction	To minimise the volume of imported material brought to Site and any associated environmental impact, borrow pits located within the Site would be used to source aggregate for construction of the Proposed Development, where suitable material is found to be present. If there is insufficient suitable material available from the borrow pits, stone would be sourced from local quarries and imported.
	Borrow pits	Operation	Following construction, the borrow pit(s) would be restored and reinstated to agreed profiles.
	Temporary Construction Compound	Operation	On completion of construction works, it is proposed that all temporary structures be removed and the existing hardstanding left in place. Detailed site investigations prior to construction would 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. The final borrow pit(s) identified during the geotechnical evaluation would be defined within the CEMP. The pollution control measures to be implemented during usage of the borrow pit(s) and its reinstatement would also be covered within the CEMP.

EIAR Chapter	Matter/Effect Requiring Mitigation	Timing/Phase	Mitigation
	Lighting	Operation	<p>Aviation lighting would be installed as soon as practicable on erected wind turbines with the hub to be lit by 2000 candela steady red lights, with a single set of intermediate steady red lights halfway down the tower at a reduced intensity of 32 candela. This is in line with the Civil Aviation Authority's (CAA) Policy Statement on Lighting of Onshore Wind Turbine Generators in the United Kingdom (UK) with a maximum blade tip height at or in excess of 150m Above Ground Level (CAA, June 2017)⁴.</p> <p>It is proposed that visibility sensors are installed on the Proposed Development wind turbines in line with the 2017 CAA Policy Statement so that where visibility is restricted to 5 kilometre (km) or less from all the wind turbines in the Proposed Development, the lights would operate at 2000 candela and where visibility is greater than 5km from all the wind turbines, the nacelle obstruction lights would be dimmed to 200 candela.</p> <p>The Applicant proposes to install an Aircraft Detection Lighting System (ADLS) whereby the lights would only be switched on when an aircraft transits the Site. Given the lights are only required for aircraft flying at night in the vicinity of the Site at altitudes of up to 3000ft above mean sea level, it is anticipated that the lights would be rarely on in this quiet airspace. Further detail on the Applicant's proposed mitigation measures and how they are being taken forward is provided in Appendix 13.4 Indicative Aviation Lighting Landscape and Visual Impact Mitigation Plan (IALLVMP) of the EIAR.</p> <p>The Applicant would also work with aviation and landscape conservation stakeholders to agree a specification and working protocol for the installation/operation of an electronic conspicuity (EC) ADLS, as opposed to the radar based PSR ADLS. The details of this would be included in the final ALLVIMP developed in consultation with all stakeholders to confirm the approved measures, post consent and prior to erection of wind turbines at the Proposed Development. The Applicant proposes that this is controlled by way of a planning condition applied to the consent for the Proposed Development.</p> <p>Furthermore, the applicant also proposes the utilisation of International Civil Aviation Organisation (ICAO) Annex 14 lights which demonstrate a tightly focused beam which would reduce intensity below zero degrees of horizontal to reduce the intensity of light at close proximity to ground based receptors.</p> <p>Regarding the use of a reduced lighting scheme, whilst it would typically reduce the density of lights at a site, which may reduce the level of predicted effects sufficiently to make them unlikely to be significant, it is acknowledged that the Proposed Development sits within the Galloway Dark Sky Park (DSP) buffer and so even reduced lighting is likely to remain a significant effect. To this end, the Applicant has proposed a condition which requires the use of an ADLS (as mentioned above) and does not rely on a reduced lighting scheme.</p>
	Enhancement measures	Operation	<p>Following completion of the Proposed Development, enhancement measures would include:</p> <ul style="list-style-type: none"> • provide waymarkers or signposts along the existing core path (SA47) located within the Site Boundary; • improve the condition of sections of the existing core path (SA47) located within the Site Boundary; • provision of bins and seating areas within the Site Boundary; • provision of information boards along the Old Road through Straiton heritage path within the Site Boundary to inform readers of the heritage of the route; and • provision of one of the temporary SPR construction compounds being partially converted to a permanent car park for recreational users. <p>The Applicant is committed to working with local stakeholders and consultees to identify additional recreational improvement and enhancement opportunities, where these are within the Site Boundary or if on third party land they will be subject to the approval of landowners.</p>
	Maintenance	Operation	<p>The Proposed Development would be maintained throughout its operational life by a service team made up of operation management, operations technicians and support functions. During periods of scheduled maintenance, technicians who may be based in the local area would be required for up to several weeks per year. Additionally, the technicians would be required to undertake unscheduled maintenance throughout the year. This team would either be employed or contracted directly by the developer, by the wind turbine manufacturer or by the maintenance service provider. Management of the Proposed Development would typically include wind turbine maintenance, health and safety inspections and civil maintenance of tracks, drainage and buildings.</p>

⁴ CAA (2017). Policy Statement on Lighting of Onshore Wind Turbine Generators in the United Kingdom with a Maximum Blade Tip Height at or In Excess of 150m Above Ground Level.

EIAR Chapter	Matter/Effect Requiring Mitigation	Timing/Phase	Mitigation
			<p>Maintenance activities would typically include, but not be limited to, the following:</p> <ul style="list-style-type: none"> • civil maintenance of tracks and drainage; • scheduled routine maintenance and servicing; • unplanned maintenance or call outs; • electrical maintenance; • blade inspections; • fencing; and • snow clearing.
	Site restoration	Operation	<p>As soon as practical once installation is complete, the immediate construction area would be restored to a profile to be agreed with South Ayrshire Council. Crane hardstandings would be retained for future maintenance. The soil would be replaced where appropriate and as advised by an onsite ECoW. Any surplus soil would be used to restore track edges after construction. This progressive reinstatement has been found to assist with re-establishment of the local habitats, as it minimises the time soil is stored.</p> <p>The upper vegetated turfs would be used to dress infrastructure edges and to reinstate the surface of restoration areas. It is anticipated that most of the soil resources within areas directly affected by construction activities would be able to be stored and reinstated as close as possible to where they were excavated in accordance with good practice; so that the Site would be restored with minimal movement of material from its original location. It is not anticipated that any excavated material would leave the Site.</p> <p>Further detail on restoration would be provided within the CEMP, an outline of which is provided in Appendix 4.2 Outline Construction Environmental Management Plan of the EIAR.</p>
Chapter 5: Landscape and Visual	Visual impact	Pre-Construction	The design of the Proposed Development and wind turbine layout would be designed to minimise the effect on the surrounding landscape and minimise visual impacts from the development on receptors. This includes locating the wind turbines at lower elevations in the Foothills with Forest and windfarms Landscape Character Type to avoid the higher points of hills and ensuring the wind turbines are screened by existing landform in key viewpoints along the Stinchar and Girvan Valleys. Wind turbines will also be sited to maximise the distance from the Merrick WLA, and the siting of infrastructure will be positioned to ensure that Black Hill provides as much screening as possible from the WLA.
	Ground disturbance	Operation	Localised ground disturbance alongside proposed new access tracks caused by the construction of undergrounding of the proposed cabling, cut and fill to accommodate the access track and hardstandings, and any further areas subject to disturbance during construction, would be reinstated after construction is complete.
Chapter 6: Hydrology, Hydrogeology, Geology and Soils	Sub-surface flows and groundwater levels	Pre-Construction	<p>A number of additional, smaller watercourse crossings have been identified during fieldwork, which comprise crossings of flush zones and small headwater channels. These crossings would have structures installed appropriate to local conditions and would be anticipated to be designed as oversized circular culverts or layers of pipes for flush zones.</p> <p>The following mitigation measures are proposed to reduce potential alterations to sub-surface flows and groundwater levels by the works and, as result, reduce potential effects on Groundwater Dependent Terrestrial Ecosystems (GWDTE):</p> <ul style="list-style-type: none"> • development and implementation of a drainage system, encouraging the infiltration of surface water runoff via SuDS arising from the infrastructure; • the access tracks would be microsited, where possible, to avoid areas of potential GWDTE; • use of permeable fill in the construction of the access tracks to maintain flow and inclusion of cross-formation drains to maintain groundwater flows, where practicable; and • consideration shall be given to peat storage and reuse in areas of GWDTE, to avoid causing long-term alterations in local hydrological conditions.
	Construction Site Licence	Pre-Construction	The Site would require a Construction Site Licence, this pre-construction application process would involve descriptions of pollution control methods and specific detailed design features to gain SEPA approval.
	Forestry	Pre-Construction and Construction	Felling contractors would be expected to conduct felling, harvesting and associated activities in accordance with forestry good practice measures, provided in Appendix 13.1 Forestry Assessment of the EIAR.
	Access tracks	Pre-Construction and Construction	During the detailed design and construction phases, sections of track would be surveyed and microsited, within 50m, to optimise the distances from the waterbodies and peat, taking into account local topography and local characteristics.

EIAR Chapter	Matter/Effect Requiring Mitigation	Timing/Phase	Mitigation
	Pollution incidents	Construction	<p>The adoption of the applicable good practice measures as summarised in Appendix 4.2 Outline Construction Environmental Management Plan of the EIAR would reduce the probability of an incident occurring and also reduce the magnitude of any incident due to a combination of good site environmental management procedures, including minimised storage volumes, staff training, contingency equipment and emergency plans.</p> <p>Key measures identified to reduce potential for pollution include:</p> <ul style="list-style-type: none"> • application of a 50m buffer zone from Ordnance Survey 1:10,000 watercourses, except where access is required; • secure oil and chemical storage in over-ground bunded areas, limited to the minimum volume required to serve immediate needs with specified delivery and refuelling areas; • emergency spill kits retained onsite at sensitive locations; • special measures at concrete batching plants with pre-cast structures used where appropriate; • cessation of work and development of measures to contain and/or remove pollutant should an incident be identified; and • a surface water quality monitoring programme is recommended, to commence 12 months prior to construction and continue into early operational period. During construction, this would include an adaptive monitoring system enabling early investigation of parameters outwith expected ranges, with prompt alerts to the construction team to amend any work activities causing an adverse effect.
	Erosion and sedimentation	Construction	<p>The adoption of the applicable good practice measures as summarised in the Appendix 4.2 Outline Construction Environmental Management Plan and Appendix 6.6 Initial Borrow Pit Assessment of the EIAR would reduce the probability of an incident occurring and also reduce the magnitude of any incident due to a combination of good site environmental management procedures, including additional precautions when operating machinery close to watercourses, soil management, staff training, contingency equipment and emergency plans.</p> <p>Key measures identified to reduce erosion and sedimentation include:</p> <ul style="list-style-type: none"> • existing forestry tracks would be used where applicable to reduce earthworks; • vegetation clearance would be scheduled only as needed, buffer strips would be retained as vegetated features and revegetation encouraged with native species; • silt traps would be employed and maintained in appropriate locations; • temporary interception bunds and drainage ditches would be constructed upslope of excavations such as borrow pits to minimise surface runoff ingress and in advance of excavation activities; • borrow pits would have appropriate and specific drainage, likely to include a series of settlement lagoons to reduce sediment load and would be monitored prior to discharge; and • excavation and earthworks would be suspended during and immediately following periods of heavy rainfall in order to minimise sediment generation and soil damage.
	Surface water drainage	Construction	<p>The adoption of the applicable good practice measures summarised in the Appendix 4.2 Outline Construction Environmental Management Plan of the EIAR would reduce the impact of modification to surface water drainage patterns, with artificial drainage installed only where necessary and would, wherever practical, be installed in advance of ground being cleared of vegetation. All structures would be designed and constructed following good practice techniques and would be of sufficient capacity to receive storm flows with an allowance for increased flows due to climate change.</p> <p>Key measures identified to minimise alterations to surface water drainage patterns include:</p> <ul style="list-style-type: none"> • minimising the number of watercourse crossings, using and upgrading existing structures where applicable; • application of sustainable drainage techniques to increase peak lag time and implementation of cross-drains at appropriate intervals and frequent discharge points to reduce scour potential; • minimising the size and duration of in-channel works; and • appropriate design of crossing structures to ensure sufficient capacity to convey 1:200-year storm flows and enable mammal and fish passage.
	Modification of groundwater levels and flows	Construction	<p>The adoption of the applicable good practice measures as summarised in the Appendix 4.2 Outline Construction Environmental Management Plan of the EIAR would reduce potential for lowering effects upon groundwater systems, with the effects of dewatering likely to be local and temporary, with groundwater expected to return to former levels quickly following cessation of construction activities. The key concerns for good groundwater management involve careful decisions involving locations of drainage and dewatering activity and ensuring such activities are undertaken sympathetically and minimised in terms of extent and time to avoid excessive influence on groundwater levels and flows.</p> <p>Key measures identified to minimise alterations to groundwater levels and flows include:</p> <ul style="list-style-type: none"> • drainage systems, typically consisting of french drains (using a gravel layer as water conduit, rather than pipework, running downhill to a soakaway zone designed to enable water to percolate back into soil), would be installed at hardstanding locations where applicable;

EIAR Chapter	Matter/Effect Requiring Mitigation	Timing/Phase	Mitigation
			<ul style="list-style-type: none"> dewatering activity would be limited to the minimum necessary duration; and access tracks crossing GWDTE would have appropriate drainage measures applied to maintain current groundwater conditions.
	Loss and compaction of soils and peat	Construction	<p>The design principles and adoption of the applicable good practice measures summarised in Appendix 4.2 Outline Construction Environmental Management Plan and Appendix 6.2 Soil and Peat Management Plan of the EIAR would reduce the soil losses and compaction of soil effects, with the combination of planning infrastructure on very shallow soils, minimising excavation, promoting local reuse of suitable material, identifying catotelmic/amorphous peat in-situ and the majority of vehicle movements being restricted to existing or new access tracks or clearly demarcated construction areas. This combination of measures resulting in any notable effect being very localised and temporary in nature.</p> <p>Site monitoring would identify any areas where soil effects are noted and enable a fast response to minimise effect.</p> <p>Key measures identified to minimise loss and compaction of soils and peat include:</p> <ul style="list-style-type: none"> reducing excavation depth and footprint required for proposed Site infrastructure by careful placement; limiting storage of soil and peat to a maximum height of 2m; appropriate re-use of excavated material for reinstatement and profiling of track verges on disturbed ground; appropriate re-use of excavated material to reinstate and/or reprofile borrow pits to an average 1.50m depth; and limiting movements to specific corridors avoiding sensitive receptors such as deep peat.
	Peat stability	Construction	<p>The inherent design principles and adoption of the applicable good practice measures summarised in the Appendix 4.2 Outline Construction Environmental Management Plan and Appendix 6.2 Soils and Peat Management Plan of the EIAR would reduce the effect of peat instability.</p> <p>Key measures identified to minimise peat stability risk include:</p> <ul style="list-style-type: none"> avoidance of removal of slope support; avoidance of heavy loading on slopes; forestry clearance activities to follow good practice and take account of slope stability; good drainage practice to ensure flows not concentrated onto slopes or into excavations; restricting earthmoving activities during and immediately after intense and prolonged rainfall events; and creating and managing of geotechnical risk register or similar management system throughout the detailed design and construction phases. <p>Two locations were identified as requiring further investigation, known as 'Detailed Assessment', in Appendix 6.1 Peat Stability Assessment of the EIAR. Following a site visit and interpretation of the additional site data, location-specific peat stability measures were identified, including:</p> <ul style="list-style-type: none"> additional site investigation pre-construction, including post-felling surveys, with any additional areas of concern identified and assessed (and specific mitigation implemented, as applicable); micrositing to avoid/minimise disturbance of deeper peat and coincident breaks of slope; slope management measures for particular slopes; appropriate borrow pit excavation methodology at the proposed borrow pit (BP04); and specific drainage designs including routes, scour prevention and discharge locations to be implemented to reduce potential adverse effect on slope stability during construction.
	Micrositing of infrastructure	Construction and Operation	Micrositing of proposed infrastructure would be considered, taking account of other design constraints, to minimise disturbance of soils and peat. Reinstatement of infrastructure post-construction would also be considered.
	Surface water quality monitoring programme	Pre-Construction, Construction and Operation	A surface water quality monitoring programme is recommended, to commence 12 months prior to construction and continue into early operational period. During construction, this would include an adaptive monitoring system enabling early investigation of parameters outwith expected ranges, with prompt alerts to the construction team to amend any work activities causing an adverse effect.
	Modification of groundwater levels and flows	Operation	The adoption of the applicable good practice measures would incorporate a sustainable drainage strategy that minimises disturbance of natural groundwater systems to reduce adverse effect on groundwater levels and flows.
Chapter 7: Ecology and Biodiversity	Watercourse crossings	Pre-Construction	All crossings of watercourses which have been confirmed to support fish (or potentially support fish) would be designed to ensure the free movement of fish past them. Where provision is required for fish, the priority is that natural channel substrate is retained, which may be accomplished using depressed invert culverts.

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			Palmullan Burn, Dalqhairn Burn and Tairlaw Burn all provide suitable salmonid habitat, and all watercourse crossings would be in accordance with River crossings & migratory fish: Design guidance (Scottish Executive, 2012) to ensure fish access is preserved. A 50m buffer has been applied to safeguard all remaining watercourses from indirect effects arising from the Proposed Development.
	Watercourse crossings	Pre-Construction	Watercourse and ditch crossings have been avoided in the design of the access track layout as far as possible. Where access necessitates watercourse crossings, construction features have been limited and utilised existing watercourse crossings as far as possible. Where watercourses are crossed, clear-span bridges are the preferred solution to minimise ecological effects and allow safe passage of otters, fish, water voles. Where culverts are required, they have been designed to be as short as possible and allow as much light penetration as possible at the culvert inlets and outlets to encourage use by fish and otters.
	Bat collision risk	Pre-Construction	The recommended minimum 50m habitat standoff distances from blade swept path to key habitat features have been incorporated into the design to reduce collision risk to bats.
	Badgers	Pre-Construction	Pre-construction checks for setts would be undertaken including checking of stored materials prior to use, providing a means of escape from excavations.
	Brown Hare	Pre-Construction	Pre-construction checks for setts would be undertaken including checking of stored materials prior to use, providing a means of escape from excavations.
	Water Vole	Pre-Construction	Pre-construction surveys would be undertaken to ascertain the relative population density of the areas to be impacted by habitat loss and/or degradation and construction related disturbance. A SPP plan would be created which would detail: <ul style="list-style-type: none"> • a suitable onsite receptor site preferably linked to the existing, donor population which would be an equal area to that lost plus an additional 50% to account for population expansion; • methodology of trapping and translocation methods; • sensitive timing of works; • demarcation of exclusion zones; and • future monitoring commitments. A derogation licence to destroy burrows and/or disturb water vole would be applied for and construction works would be overseen by a suitably qualified ECoW.
	Environmental Clerk of Works	Pre-Construction and Construction	A suitably qualified experienced ECoW would be appointed by the PC prior to and for the duration of the construction period. Tool Box Talks would be delivered to all construction staff by the PC's ECoW. The ECoW would be qualified and experienced with regard to environmental and ecological construction issues and ideally be a member of the Association of Environmental Clerk of Works (AECOW ⁵) (or equivalent).
	Pine Marten surveys and presence	Pre-Construction and Construction	Pre-construction pine marten surveys which would ensure any additional/new pine marten dens and/or well-used feeding areas are recorded and can be protected (including within areas that were inaccessible during the surveys reported herein). If the pre-construction surveys identify that construction works would result in the loss of pine marten dens, the Applicant would provide details for compensatory measures to be adopted (including installation of artificial dens). The workforce would be alerted to potential pine marten presence via Toolbox Talks delivered by the ECoW.
	Red squirrels	Pre-Construction and Construction	Pre-construction red squirrel surveys will be undertaken to ensure any new red squirrel dreys and/or well-used feeding areas are recorded and can be protected (including within areas that were inaccessible during the surveys reported herein, i.e. very dense thicket stage coniferous plantation). If the pre-construction surveys identify that construction works would result in the loss of red squirrel dreys, and there is no alternative approach available, the Species Protection Plan (SPP) would provide details for compensatory measures to be adopted (including installation of artificial dreys). In addition, construction activities may result in the killing or injuring of red squirrels that may become trapped in exposed excavations or through direct interactions with plant. However, it is expected that measures included in the SPP, including the delivery of a Tool Box Talk to alert site personnel to potential red squirrel presence would reduce or eliminate this risk. Habitat loss effects would be mitigated through design considerations and project assumptions set out in preceding sections and through key-hole design of the Proposed Development, minimising direct habitat loss and severance of commuting routes.
	Site SPP	Pre-Construction and Construction	An SPP would cover the following species/species groups as a minimum: fish, herpetofauna (amphibians and reptiles), bats, badger, otter, water vole, pine marten and red squirrel. Pre-construction surveys would be conducted according to standard guidance. Pre-construction surveys would include densely forested areas (e.g. thicket stage) that were inaccessible in the surveys reported herein, due to close nature of planting; if these are

⁵ AECOW is the qualifying body for Environmental Clerks of Works. AECOW has been developed to raise professional standards amongst those providing ECoW services.

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			inaccessible for pre-construction survey, an ECoW would directly supervise all felling within these inaccessible areas. The results would be interpreted and used to provide any specific mitigation measures prescribed within the SPP. Requirements for buffer zones would be identified within the SPP (complying with legal and guidance requirements), enforced onsite by the ECoW and informed to the workforce via Tool Box Talks and appropriate fencing and signage. Where it is identified that construction works would result in the loss of protected species resting sites (e.g. badger setts, red squirrel dreys, pine marten dens, otter holts, water vole burrows etc.), species would be excluded according to the terms of any derogation licenses. The SPP would also specify measures to be put in place to ensure works would minimise the risk of disturbance, killing, or injuring of species, such as: avoiding working at night where possible to minimise disturbance to nocturnal/crepuscular species; pre-checking of stored materials prior to use; covering and capping excavations or pipes when not in use; providing a means of escape from excavations; direction of Site lighting away from sensitive features for protected species such as watercourses; Site speed limit of no greater than 15mph.
	Fish/aquatic ecology SPP	Pre-Construction and Construction	<p>The fish/aquatic ecology SPP would include for timing of instream construction works within watercourses confirmed to support salmonids (or potentially support salmonids), i.e. Pulreoch Burn, Tairlaw Burn, Knockoner Burn and Pulmullan Burn, to be planned where possible to avoid the sensitive lifecycle stages of the fish present, i.e. to avoid October to May inclusive.</p> <p>The Aquatic Ecology SPP would address sensitivity, including to noise and vibration, of those fish species present (brown trout) and ensure that appropriate construction methods would be implemented to minimise and avoid disturbance or avoidance behaviour during critical life stages.</p> <p>Should any part of a watercourse containing fish need to be impounded during the works, a fish rescue and translocation would be carried out to remove fish from the impoundment. Fish translocation operations require authorisation from Marine Scotland Science, the District Salmon Fishery Board and the relevant landowner, therefore, such operations would need to be planned well in advance.</p> <p>In order to help maintain baseline fish populations, a Fish Monitoring Programme would be prepared and implemented as part of the SPP that compares changes in pre-construction densities detailed in Appendix 7.5 Aquatic Ecology Baseline Report of the EIAR with those during construction and post-windfarm construction.</p> <p>These surveys would be undertaken between July and October for at least one year after all construction and restoration has been completed.</p>
	Herpetofauna SPP	Pre-Construction and Construction	The herpetofauna section of the SPP would set out measures to reduce potential for injury or killing. For example, the ECoW would check existing piles of spoil (brush, logs or rocks) for resting/hibernating reptiles prior to clearance and any excavations which are left open overnight would be inspected for reptiles prior to in-filling, if dug during the reptiles' active period (generally accepted as being late March until the end of October). Any reptiles found would be removed and placed in suitable reptile habitat away from the Proposed Development.
	Bog Habitat	Pre-Construction	<p>The outline habitat management prescriptions presented in Appendix 7.6 Outline Habitat Management Plan of the EIAR have been designed to offset the permanent direct and indirect loss of approximately 9.368.8ha of bog habitat which is predicted to result from the construction of the Proposed Development.</p> <p>The Outline Habitat Management Plan identifies the methods which are likely to be required to disrupt water drainage and manage conifer regeneration in order to restore bog habitat conditions within the OHMP area. These include:</p> <ul style="list-style-type: none"> • cross tracking and ground-smoothing to flatten forestry ridges and infill drainage furrows by upturning trees stumps and to manage regenerating trees; • damming of drainage channels and forestry drainage furrows; • hand clearance of regenerating trees; and • raking of resulting brush into piles.
	Outline Habitat Management Plan (OHMP)	Pre-Construction, Construction and Operation	An OHMP has been included as Appendix 7.6 Outline Habitat Management Plan of the EIAR. A detailed Habitat Management Plan (HMP) would be prepared, building upon the outline principles set out in the OHMP, detailing areas of habitat creation/restoration, management, and monitoring required as part of the Proposed Development, in consultation with NatureScot and other key consultees. During and after construction, areas that have been disturbed adjacent to construction areas would be restored or reinstated before the construction ends.
	General construction measures	Construction	Temporary construction compounds and onsite working areas would be sited away from sensitive habitats, running and standing water; to minimise the risk of polluted run-off/waste water or chemicals entering these habitats and dust deposition. Appropriate signage would be used to clearly identify these areas to avoid accidental encroachment. Construction methods would follow relevant best environmental practice to eliminate or reduce the potential for adverse effects on the water environment through a Pollution Prevention Plan (PPP). The PPP would also include details of incident response plans, mitigation and emergency responses to spillages, failure of temporary works, bank collapse, vandalism, extreme weather events etc. If a construction related incident occurs which could significantly affect the onsite watercourses, construction should stop until the problem is identified and isolated. SEPA and Ayrshire Rivers Trust (ART) would be informed and appropriate mitigation measures implemented to ensure no further

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			impacts can occur. The aim of remedial actions should be to restore baseline conditions as quickly as possible. Construction would comply with the best practice construction methods outlined by SEPA in 'Engineering in the Water Environment Good Practice Guide: temporary construction methods' (SEPA, 2009) and in CIRIA, 2015. The PPP would include water protection measures specified in Chapter 6: Hydrology, Hydrogeology, Geology and Soils of the EIAR. These include implementation of pollution prevention measures, dust control, and buffer zones around sensitive features; use of check dams, silt fencing etc.
	Working hours	Construction	These would be agreed by the appointed PC, the Applicant and South Ayrshire Council prior to works commencing. However, standard construction working hours are assumed to be Monday to Friday 07:00 to 19:00 and weekends 07:00 to 13:00; or as agreed with the South Ayrshire Council's Environmental Health Officer, reducing the level of disturbance to nocturnal and crepuscular species, such as badgers, bats and otters. Any specific temporal working restrictions would be localised to particular sensitive features, such as in proximity to resting sites etc., and would be set out in relevant Special Protection Plans.
	Peat and soil management	Construction	Procedures to control the hydrology of stored peat would be covered by the CEMP and are outlined in Appendix 6.2 Soil and Peat Management Plan of the EIAR.
	Air quality management and dust deposition	Construction	Measures for the control of air quality and emissions (including dust management measures) would be included within the CEMP and would include protection measures specified in Appendix 4.2 Outline Construction Environmental Management Plan of the EIAR.
	Noise and vibration	Construction	Measures for the control of noise and vibration would be included within the CEMP to manage noise and vibration impacts on sensitive ecological features. This would include a selection of appropriate quiet plant to reduce noise emissions; noisy plant would be kept as far away as possible from any sensitive features recorded during pre-construction surveys (i.e. water vole burrows, bird nesting areas, brown trout spawning habitat, as directed by the ECoW).
	Site lighting	Construction	Construction site lighting will avoid key commuting areas, edge habitat, riparian habitat, lighting must take cognisance of BCT lighting guidelines, directed on areas of work only. This information will be included in the CEMP.
	Bog habitat	Construction	Where bog habitats are intersected by the Proposed Development Footprint, access roads would be of a floated-construction thereby minimising habitat loss and damage which might otherwise be associated with excavated tracks. Where the peat is required to be excavated, the associated layers (upper acrotelm and underlying catotelm) and vegetated turves would be separated, appropriately stored and reinstated in line with standard best practice measures which would be detailed in a Peat Management Plan as set out in Appendix 4.2 Outline Construction Environmental Management Plan of the EIAR.
	Monitoring of bog habitats	Operation	Monitoring of degraded bog habitats would be undertaken on a set of permanent 1m radial samples within the OHMP area. Further detail on monitoring procedures can be found in Appendix 7.6 Outline Habitat Management Plan of the EIAR.
	Curtailment strategy for bats	Operation	Curtailment of the operation of all wind turbines during certain weather conditions would apply between 30 minutes post-sunset and 40 minutes pre-sunrise between 1 April until 31 October each year for the lifetime of the Proposed Development. The curtailment strategy would be complemented by a monitoring programme to determine whether the curtailment was effective or whether the timings could be modified at all. These measures are further detailed in Appendix 7.4 Bat Mitigation Plan of the EIAR.
	Operational lighting	Operation	Operational lighting would be limited to aircraft warning lights and lighting within the Substation Compound, thus minimising light-related impacts on nocturnal or crepuscular species such as, bats, badgers and otters.
Chapter 8: Ornithology	Pre-construction survey for breeding crossbill	Pre-Construction	Crossbill has a protracted breeding season (Forrester <i>et al.</i> , 2007) and NatureScot have defined the breeding season for this species as January to mid-December (NatureScot, 2009a). Precautions must be taken prior to felling to avoid potential disturbance to nesting birds or destruction of active nests. A pre-construction survey of areas of suitable habitat for nesting crossbill within 150m of works ⁶ would be completed ahead of any operations, regardless of the time of year, by a suitably experienced and qualified ECoW, to check for evidence of crossbill breeding or active nests.
	Pre-construction survey for lekking black grouse	Pre-Construction	Where construction works are required during the key lekking period for black grouse (late March to mid-May; Gilbert <i>et al.</i> , 1998), pre-construction survey of areas of suitable lekking habitat within 750m ⁷ of works would be completed by a suitably experienced and qualified ECoW, to check for the presence of black grouse leks.
	Pre-construction survey for other breeding birds	Pre-Construction	Where construction works are required during the breeding bird season, the area within 500m of works would be surveyed ahead of any operations, by a suitably experienced and qualified ECoW, to check for active nests of all bird species (excluding crossbill species, which are covered above). Where there is suitable habitat for nesting Schedule 1 species, the Study Area would be extended to the maximum buffer distance for the relevant species recommended in Ruddock and Whitfield (2007).

⁶ The maximum recommended species-specific disturbance buffer for breeding birds (Ruddock and Whitfield, 2007).

⁷ The maximum recommended disturbance buffer for lekking black grouse (Ruddock and Whitfield, 2007)

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	Protection of nesting birds	Pre-Construction	<p>If any nests (or breeding territories of Schedule 1 species) are identified during pre-construction surveys, an exclusion zone around the nest (or territory) would be established (with the distance appropriate to the species and agreed through consultation with NatureScot). No works would be permitted within the exclusion zone and no personnel or vehicles would be allowed to enter or pass through until the ECoW has confirmed that the chicks have fledged or the breeding attempt has failed.</p> <p>Where this is not feasible, NatureScot would be contacted and further mitigation measures agreed to ensure that nesting birds are not disturbed. This could involve, for example, limiting the number of site personnel accessing the relevant area to the minimum number required to complete the works, restricting working hours, and employment of an ECoW to undertake a watching brief.</p>
	Minimising disturbance to black grouse	Pre-Construction	<p>If any black grouse leks are identified within 750m of works during pre-construction surveys for this species during the key lekking period (late March to mid-May), a 750m exclusion zone around the lek site would be established, within which no works would take place around the hours of dawn or dusk (with permitted working times to be determined by the ECoW through monitoring of the leks).</p>
	Timing of works	Construction	<p>Where possible, construction works (including felling) would take place outside the main breeding bird season (March to August inclusive).</p>
	Bird Protection Plan (BPP)	Construction	<p>The good practice measures outlined in Chapter 8: Ornithology of the EIAR would be incorporated into a detailed BPP, devised in consultation with NatureScot, to ensure the safeguarding of all breeding birds during construction, as well as roosting hen harrier all year round, thus ensuring legislative compliance during all phases of the Proposed Development.</p> <p>To ensure that mitigation measures are reactive to changing conditions on the Site and compliance with legislation protecting breeding birds, the BPP would be overseen by a suitably experienced and licensed ECoW, who would attend Site regularly to make observations of birds present in and around areas where works are planned, and identify any potential constraints to works.</p>
	Toolbox Talk	Construction	<p>A 'Toolbox Talk' would be delivered by a suitably experienced ECoW to ensure that all contractors working on the Development are aware of ornithological sensitivities and relevant legislation.</p>
	Protection of roosting hen harrier	Construction	<p>Although it is unlikely that standard construction activities could be construed as intentional harassment, there is a possibility that, if any roosting hen harriers are identified within the Site or surrounding area (at any time of year) and no measures are taken to protect them from disturbance, this could be considered to constitute reckless harassment. As such, it is proposed that the toolbox talk (see above) would include roosting hen harrier.</p> <p>In the unlikely event that any roosting hen harriers are identified, a specific protection plan would be developed to avoid or minimise potential effects to this species. Specific mitigation measures would be agreed with NatureScot but would likely include avoiding any works around the hours of dusk and dawn (or overnight), implementing an appropriate exclusion zone around the roost site within which works are restricted whilst birds are using the roost and monitoring by a suitably experienced ECoW.</p>
	Routine maintenance	Operation	<p>Routine maintenance required during operation is expected to be minimal, involving only small areas and of a temporary duration. However, should significant operational works be required during the nesting bird season, or if any Schedule 1 birds or roosting hen harriers are suspected or confirmed to be present, the mitigation measures outlined for the construction phase would be explored in order to protect breeding birds and roosting hen harrier with other appropriate measures implemented where required.</p>
	Monitoring	Operation	<p>Operational osprey monitoring will be carried out for the first three years of operation. Full scope and methodologies will be confirmed following consent, as part of the Osprey Monitoring Plan, however it is anticipated that the scope will comprise of annual osprey Nest Monitoring Surveys and Vantage Point Flight Activity Surveys.</p>
Chapter 9: Noise	Construction noise and vibration	Construction	<p>The adoption of Best Practicable Means (BPM) as defined in the Control of Pollution Act 1974 is usually the most effective means of controlling noise and vibration from construction sites. BPM would be employed including the following measures:</p> <ul style="list-style-type: none"> • staff would receive appropriate environmental training at the beginning of the contract and throughout the construction; • silenced or sound reduced compressors, would be used where necessary; • silencers or mufflers would be fitted to pneumatic tools where required; • deliveries would be programmed to arrive during daytime hours only, with care being taken to minimise noise when unloading vehicles; • delivery vehicles would be prohibited from waiting within the Site Temporary Construction Compound with their engines running; • plant items would be properly maintained and operated according to manufacturers' recommendations, in such a manner as to avoid causing excessive noise; • access to the Site would be along agreed access routes only;

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			<ul style="list-style-type: none"> there would be compliance with agreed working hours, e.g. construction activities audible beyond the Site Boundary would only be undertaken during the daytime between 07:00 to 19:00 hours Monday to Friday and 07:00 to 13:00 hours on weekends, or as agreed with the South Ayrshire Council Environmental Health Officer; effective liaison with the local community would be established and maintained throughout the construction period. This would include provision of information on the on-going activities (including blasting where required) and provision of contact telephone numbers for the Site to obtain information during operational hours, a representative being identified with appropriate authority to resolve any problems and a log of complaints and actions taken to remedy these being maintained; and the good practice advice detailed in both BS5228-1 and BS5228-2 would be complied with. <p>Compliance with the above measures would be ensured through inclusion within a CEMP which the appointed contractor would be required to comply with Appendix 4.2 Outline Construction Environmental Management Plan of the EIAR. The final CEMP would be subject to agreement with South Ayrshire Council and SEPA and a planning condition could be used to ensure that it was followed in practice.</p>
	Construction noise and vibration/blast-induced vibration and air overpressure	Construction	An appropriate planning condition will be used to ensure that the content of the CEMP, including the listed mitigation measures, are agreed with South Ayrshire Council as well as the Scottish Environmental Protection Agency, and that the appointed contractor is required to comply with the CEMP.
	Blast-induced vibration and air overpressure	Construction	<p>The following good practice measures would be employed and can be ensured through inclusion within the final CEMP as to be agreed with South Ayrshire Council and SEPA:</p> <ul style="list-style-type: none"> care would be taken with the development of faces, and with trial blasts, as anomalous vibration levels might be produced when there is no free face to relieve the energy produced; appropriate burden would be ensured to avoid over- or under-confinement of the charge; accurate drilling and setting out would be undertaken; charge levels would be appropriate; exposed detonating cords would not be used; stemming with appropriate material such as sized gravel or stone chippings would be undertaken; decking charges/in hole delays/delay detonation would be used to ensure smaller maximum instantaneous charges (MICs); a series of groundborne vibration measurements and air overpressure measurements would be undertaken to check compliance with appropriate criteria (adopted from BS5228-2); each charge would be individually designed to maximise efficiency and reduce energy loss through vibration and air overpressure; the use of surface detonating cords and secondary blasting would be avoided wherever possible; the areas of heave and the total charges would be minimised; blasting in adverse weather conditions would be avoided (i.e. wind in the direction of sensitive receptors); the blast would be undertaken only within the (less-sensitive) hours of 10:00 and 12:00 and 14:00 and 16:00 on Mondays to Fridays, and 10:00 and 12:00 on Saturdays; and local residents would be informed in advance of the proposed times of blasting works, along with details of the good practice mitigation measures that are in place, to ensure good relations and appropriate reassurance.
	Wind turbine noise	Pre-Construction	<p>Embedded mitigation measures that serve to reduce the potential impact of wind turbine noise include the following:</p> <ul style="list-style-type: none"> the proposed wind turbines have been sited at significant distances from the closest noise-sensitive receptors (1.04km at the closest point), such that the attention of noise as a result of geometric spreading (distance) is maximised; and wind turbines have been located such that attenuation from landform (acoustic screening) is maximised where possible.
Chapter 10: Archaeology and Cultural Heritage	Wind turbine and control building appearance	Pre-construction	As part of embedded mitigation, consideration has been given to the appearance, finish and colour of the wind turbines, substation compound and other buildings in accordance with NatureScot guidance (Scottish Natural Heritage,2017) Siting and Designing Wind Farms in the Landscape. This helps to reduce the indirect impacts on the setting of the heritage assets.
	Archaeological recording (Basic recording (ALGAO, 2013 ⁸))	Pre – construction	<p>Any surviving upstanding structural heritage assets that are likely to be truncated or wholly removed by the Proposed Development would be recorded prior to construction to allow for the creation of a permanent record of the heritage asset and its preservation by record.</p> <p>The heritage assets to be recorded prior to construction include:</p>

⁸ ALGAO: Scotland (2013) Historic Building Recording Guidance for Curators, Consultants and Contractors. Available online at: https://www.algao.org.uk/sites/default/files/documents/ALGAO_Scotland_Buildings_Guidance_2013.pdf.

EIAR Chapter	Matter/Effect Requiring Mitigation	Timing/Phase	Mitigation
			<ul style="list-style-type: none"> • Linfern Loch Wall (1) (HA97); • Linfern Loch Wall (2) (HA100); and • Stob Hill Walls (HA102).
	Site demarcation and avoidance	Construction	<p>Surviving heritage assets that are within 50m of any proposed wind turbine base, access track, borrow pit, crane hardstanding, or other proposed infrastructure related to the Proposed Development would be demarcated prior to the commencement of construction to ensure visibility of the heritage asset location to all members of the construction crew. Demarcation would be achieved using high visibility marker posts set 5m from the edge of the heritage asset, with the markers retained throughout the construction phase. Demarcation of heritage assets would be the responsibility of the PC, with identification of the heritage assets made on the ground by a qualified archaeologist using the baseline information provided in Appendix 10.6 Archaeology and Cultural Heritage Gazetteer of the EIAR.</p> <p>The heritage assets to be demarcated include:</p> <ul style="list-style-type: none"> • Linfairn to Burnside Footpath (HA95); • Stob Hill Sheep Ree (HA99); • Linfern Loch Wall (2) (HA100); • Stob Hill Walls (HA102); and • Stinchar Ford Wall (HA104).
	Construction guidelines	Construction	<p>Written guidelines would be issued for use by all construction contractors outlining the need to avoid causing unnecessary damage to known heritage assets. The guidelines would set out arrangements for calling upon retained professional support in the event that buried archaeological remains (such as building remains, human remains, artefacts etc.) should be discovered in areas not subject to archaeological monitoring.</p> <p>The guidelines would make clear the legal responsibilities placed upon those who disturb artefacts or human remains.</p>
	Enhancements	Operation	<p>The Applicant would seek to engage discussion with HES and the potential for enhancement of the archaeological record through the implementation and recovery of a peat core and C14 dating of secure deposits associated with the Scheduled Monument. This would be pending the approval of any Scheduled Monument Consent requirements and pre-application discussions associated with areas of potential.</p> <p>The potential exists to explore options available for archaeological enhancement of the Historic Environment Record (HER) for the region, in consultation with HES and West of Scotland Archaeology Service (WoSAS). Through working closely with HES and WoSAS we would seek to benefit the HER, with any results able to be drawn upon and fed into the Regional Research Framework and contributing to Scotland's Archaeology Strategy.</p>
Chapter 11: Access, Traffic and Transport	Physical measures to design out adverse effects	Construction	<p>The number of heavy good vehicle (HGV) movements would be reduced with an onsite batching plant as bulk deliveries of cement can be made via a 20 tonne powder tanker and aggregate can be delivered via a 35-tonne tipper HGV. Water can be extracted onsite.</p> <p>Use of onsite borrow pits would further reduce the number of HGV trips associated with the construction of the Proposed Development. It is expected that a significant proportion of the required materials would in fact be sourced onsite, thus further reducing the required number of HGV movements.</p> <p>Advance warning signs and clear visibility splays would be used at the Site accesses to help advise road users of the increased numbers of turning traffic at the Site access junctions.</p>
	General construction traffic	Construction	<p>General construction traffic would generally avoid the morning and evening peak periods. A Construction Traffic Management Plan (CTMP) would be prepared and agreed with South Ayrshire Council, Dumfries and Galloway Council and Transport Scotland prior to construction works commencing onsite. The CTMP would be developed using experience gathered during the construction of recent projects in the Local Authority area.</p> <p>The following measures could be included within CTMP during the construction phase:</p> <ul style="list-style-type: none"> • details of any required temporary widening and other road improvement measures, together with detailed consideration of vehicle swept paths, loadings, structural assessments (where required), temporary street furniture removal details; • all materials delivery lorries (dry materials) would be sheeted to reduce dust and stop spillage on public roads; • specific training, audit and disciplinary measures would be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway; • appropriate traffic management measures would also be put in place at the Site access junctions to advise drivers to slow down and be aware of turning traffic; • A Traffic Control system would be implemented that may include the following:

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			<ul style="list-style-type: none"> • all onsite deliveries and collections will be co-ordinated through the Site Management Team and movements on to and offsite would be tracked by the Site Security Team; • where possible, no daytime or overnight parking of site or construction vehicles (site employees or visitors) outside of any predetermined construction compounds or work sites will be allowed; • restrictions on speed limits for site operatives/delivery drivers on the proposed access routes; and • directional signage could be provided to enforce delivery routes. • requirement for all drivers to attend an induction to include a safety briefing, the need for appropriate care and speed control, particularly in sensitive areas, identification of specific sensitive areas, identification of the specified route, and the requirement not to deviate from the specified route; • regular tool-box talks with site operatives to remind them of their obligations in terms of good construction practices, advising that this would apply to onsite activities and when travelling to and from the Site; • a Travel Plan to encourage lift sharing/crew bus access to Site for construction staff; • a road condition survey (including assessment of existing structures as appropriate) prior to the construction period and a similar assessment following completion of the works; • accurate directions are given to delivery drivers to ensure that they are able to efficiently locate site entrances to avoid impacting local residents, this may include the use of pre-prepared instructions/maps, grid references or other tools such as 'what3words'; • adequate traffic management and banksmen would be deployed for the movement of HGVs and abnormal loads; and • HGV loads would be maximised to ensure that part load deliveries would be minimised.
	Abnormal indivisible loads (AIL)	Construction	<p>With regards to AIL movements, a number of the necessary works identified on the Trunk Road network are similar to those already in place for previous windfarm developments. These have been improved or altered, to suit the proposed larger wind turbine loads and would be made permanent with the agreement of the road authorities. In general, it is considered that these can be delivered without significant civil engineering works or disruption to existing road users. Any street furniture that is removed on a temporary basis to enable AIL movements would be fully reinstated following the delivery period.</p> <p>There would be a requirement for additional mitigation measures on the latter sections of the proposed access route, namely the C46W. This may include carriageway widening, carriageway regrading and creation of vehicle over-run areas. These would be undertaken in full consultation with both South Ayrshire Council and Dumfries and Galloway Council, with the works carried out where practicable to avoid any unnecessary disruption to existing road users. All works in relation to mitigation measures required to accommodate the abnormal load movements would be undertaken with the appropriate traffic management measures, implemented by a suitably qualified traffic management contractor and in agreement with the Local Authority.</p> <p>The proposed access junctions off the C46W would make use of existing forestry access locations, however these would require to be upgraded to accommodate both the abnormal loads and general construction traffic. From this point onwards, loads would proceed to the wind turbine locations using existing upgraded forestry tracks and new access tracks constructed to the selected wind turbine manufacturers transportation guidelines.</p> <p>An agreed access strategy including any necessary mitigation works on the proposed access route for wind turbine loads would be confirmed post consent once the wind turbine supplier and the wind turbine details have been confirmed. This would include a further route assessment and trial run of the confirmed component dimensions and vehicle set up, following confirmation of the appointed haulage contractor.</p> <p>A police escort would be required to facilitate the delivery of the predicted loads. The police escort would be further supplemented by a civilian pilot car to assist with the escort duty. It is proposed that an advance escort would warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy would remain in radio contact at all times where possible.</p> <p>The abnormal loads convoys would be no more than three AILs long, or as advised by the police, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic where it is safe to do so.</p> <p>The times in which the convoys would travel would be agreed with Police Scotland who have sole discretion on when loads can be moved.</p>
	Local road users	Construction	<p>Advance warning signs could be installed on the approaches to the affected road network, subject to the agreement of the road authorities. The signage would assist in helping improve driver information and allow other road users to consider alternative routes or times for their journey (if applicable). The location and numbers of signs would be agreed post consent and would form part of the wider Traffic Management proposals for the Proposed Development.</p>

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			<p>Information on the wind turbine convoys would be provided to local media outlets to help assist the public. These could include:</p> <ul style="list-style-type: none"> local newspapers; Community Councils; South Ayrshire Council website; Dumfries and Galloway Council website; and The Ayrshire Roads Alliance website. <p>Information would relate to expected vehicle movements from the Port of Entry through to the Site access junctions. This would assist residents becoming aware of the convoy movements and may help reduce any potential conflicts.</p> <p>Potential conflicts between AIL wind turbine loads and other road users can occur at a variety of locations and circumstances. The main potential conflicts are likely to occur at the following locations:</p> <ul style="list-style-type: none"> in rural areas where the loads may straddle the centre line of the road, where fast moving oncoming traffic may be encountered etc.; where traffic turns at a road junction, requiring other traffic to be held back on other approach arms; and locations where high speeds of general traffic are predicted.
	Construction deliveries	Construction	All deliveries would be undertaken at appropriate times (to be discussed and agreed with the relevant roads authorities and police) with the aim to minimise the effect on the local road network. It is likely that the convoys associated with the movement of AILs would travel in the early morning periods, before peak times while general construction traffic would generally avoid the morning and evening peak periods.
	Convoy management	Construction	<p>To address any concerns expressed by the local community, it is proposed that a detailed convoy management plan is developed with South Ayrshire Council, Dumfries and Galloway Council and Transport Scotland. This would include measures to provide hold points for convoys to ensure that inconvenience to other road users can be minimised. Hold point locations along the delivery route may include the following locations where traffic can overtake loads under police control.</p> <p>The potential for using these areas would be developed in detail with Police Scotland and the roads authorities and a detailed convoy management plan would be established prior to the movement of any loads.</p>
	Traffic Management Plan	Construction	<p>A Traffic Management Plan would be produced as part of the CEMP and 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; a review of clear heights with utility providers along the route; ensure that any vegetation along the route is cut back to provide a clear running channel; confirm that there are no roadworks or closures that could affect the loads; communication protocols and lay over areas to allow overtaking; discussion with Transport Scotland on the potential for using the existing Variable Message Signage (VMS) network to provide additional information to users of the A75 and M74; a communication dialogue between the various stakeholders; and ongoing communication with local Community Councils and other local organisations to avoid potential issues around regular community events.
	Traffic management measures	Construction	An inspection of any traffic management measures and road signage around the Site access junction would be undertaken by the site manager on a regular basis. During the access junction construction works, there would be a daily road inspection and the public road would be kept clear of debris and mud. A road sweeper would be employed as and when required to remove any debris from the public road network in the vicinity of the Site access junctions.
	Construction routes	Construction	<p>Site direction signage could also be provided to direct construction traffic to the Proposed Development and to ensure that traffic remains on approved routes and would not operate on minor road links that have not been assessed.</p> <p>The Balance of Plant contract would specify the routes that suppliers must take during construction activities. This would be enforced by the Site agent.</p>
	Street furniture	Construction	Any street furniture that is removed on a temporary basis to enable AIL movements would be fully reinstated following the delivery period.
	Temporary speed restrictions	Construction	Temporary speed restrictions would be in place in the vicinity of the Proposed Development for site operatives and delivery vehicles only. This would be primarily on those sections of the proposed access routes where there could be interaction with vulnerable road users or through areas of increased pedestrian activity.

EIAR Chapter	Matter/Effect Requiring Mitigation	Timing/Phase	Mitigation
	Escort procedures	Construction	<p>Abnormal loads would be escorted in accordance with 'Code of Practice: Lighting and Marking for Abnormal Load Self Escorting Vehicles Incorporating Operating Guidance'.</p> <p>All abnormal load convoys would include a minimum of two escort vehicles. The first escort has a dual function, to give oncoming drivers advance warning and also to assess the route ahead of the lorry and trailer. The second escort takes up the rear and contains the steersman who is in radio contact with the driver advising him if he needs to activate the trailer steering controls in his cab. This second escort would also advise the lorry driver if there is any traffic attempting to overtake.</p> <p>There are parts of the route where the escort vehicles would be required to advise traffic to temporarily stop (with the assistance of Police Scotland), to allow for the safe passage of loads. This would be required at locations where the carriageway narrows and at locations where there are significant changes in the horizontal alignment of the carriageway. The procedure for this is as follows:</p> <ul style="list-style-type: none"> the first escort vehicle would ensure, with police assistance where required, that live traffic is stopped before the convoy is permitted to continue through the potential hazard. The convoy may not proceed without verbal confirmation from the lead escort vehicle. Where police assistance is required, the Transport Co-ordinator/Lead Driver would co-ordinate this with the police prior to the movement of any loads; and should any rogue live traffic start to move, the lead escort vehicle would immediately order the convoy to stop. The second escort vehicle would then deal with the rogue live traffic, ensuring safe passage past the convoy, before the convoy can proceed, subject to confirmation from the lead escort.
Chapter 12: Socio-economics, Tourism and Recreation	Access	Construction	The CEMP (Appendix 4.2 of the EIAR) would include an AMP which would be agreed in consultation with the South Ayrshire Council Access Team and Sustainable Travel Team. The AMP would ensure continued access for users of the recreational routes crossing the Site (core path SA47; core path SA49; Scottish Hill Track SKC/HT385/3, SKC/HT385/2, SKC/HT82/2; SKC/HT82/6, SKC/HT80/10; SKC/HT76/9; SKC/HT82/7; CROW SKC/SKC7/1; forest road within Galloway Forest Park; and Old Road through Straiton Heritage Path). However, diversions would be implemented in order to allow continued access for these routes. Areas immediately surrounding the construction activities may be temporarily restricted during construction for informal recreational activities such as walking, cycling and horse riding. The area and duration of such restrictions would be kept to a minimum as is required for the work to be conducted safely and efficiently. In addition, in keeping with good practice for construction sites, notices would be placed in prominent locations around the Site with details of any areas with restricted access. The diversions and restricted access are not anticipated to be in place throughout the full 18 months of the construction period, but only during specific phases of the construction period.
	Local employment	Construction and Operation	The Applicant would ensure the PC would work proactively with contractors and suppliers to provide employment opportunities in the local area. It is anticipated that the PC would hold a local 'meet-the-buyer' open day. This would provide an opportunity for local contractors and suppliers to present their business to the PC. The CEMP would also include public liaison (e.g. public notices) that would be issued prior to the commencement of construction works informing local residents and businesses of dates and durations of the works.
	Recreation enhancements	Construction and Operation	<p>The Applicant is proposing to implement a number of recreational enhancements in addition to the Proposed Development as detailed in Chapter 4: Development Description of the EIAR.</p> <p>Enhancement measures currently being proposed by the Applicant include:</p> <ul style="list-style-type: none"> provide waymarkers or signposts along the existing core path SA47 located within the Site Boundary; improve the condition of sections of the existing core path SA47 located within the Site Boundary; provision of bins and seating areas within the Site Boundary; provision of information boards along the Old Road through Straiton heritage path within the Site Boundary to inform readers of the heritage of the route; and provision of one of the temporary SPR construction compounds being partially converted to a permanent car park for recreational users.⁹⁸ <p>The Applicant is committed to working with local stakeholders and consultees to identify additional recreational improvement and enhancement opportunities, where these are within the Site Boundary or if on third party land they will be subject to the approval of landowners.</p>
	Maintenance activities	Operation	When maintenance activities are undertaken during the operation of the Proposed Development, appropriate safety measures including adequate warning signs and exclusion areas would be required to ensure safety for the public. During operation, there may be limited occasions where recreational routes within the site may need to be temporarily diverted for maintenance works. This would depend on the nature of activity and is anticipated to be an infrequent occurrence.

EIAR Chapter	Matter/Effect Requiring Mitigation	Timing/Phase	Mitigation
Chapter 13: Other Issues	Forestry and Land Use	Pre-Construction and Construction	<p>Approximately 223.48 hectares (ha) of advanced felling would be required for construction of the Proposed Development, with some forestry subsequently being replanted. The area of unplanted ground would increase and as a result there would be a net loss of woodland area of approximately 96.68ha, which would comprise a decrease of conifer woodland by 120.69ha and broadleaf woodland by 23.58ha.</p> <p>In order to comply with the Scottish Government's Control of Woodland Removal Policy, compensation planting would be required to mitigate for the loss of woodland area. The Applicant is committed to providing appropriate compensatory planting. The extent, location and composition of such planting to be agreed with Scottish Forestry, taking into account any revision to the felling and restocking plans prior to the commencement of operation.</p>
		Construction	Forestry waste would be managed in line with SEPA guidance document WST-G-027 'Management of Forestry Waste' (SEPA, 2013) ⁹ . It is proposed that full consideration and further clarification on this issue would be included in a Forestry Waste Management Plan to form part of the CEMP.
	Aviation and Radar	Operation	Measures are proposed to mitigate Line of Sight effects on Primary Surveillance Radar (PSR) operated by NERL and Glasgow Prestwick Airport (GPA). These include the reoptimisation of GPA Terma Scanter 4002 PSR for GPA and the use of and infill radar feed for NERL. Mitigation measures are required to be agreed with these aviation stakeholders.
	Shadow Flicker	Operation	<p>In line with the recommendation by South Ayrshire Council; it is expected that an appropriately worded planning condition would be included to mitigate against any potential effects associated with shadow flicker. The condition would also include measures whereby if shadow flicker was experienced, a complaint would be lodged with the planning authority and investigated by an appropriate expert. If shadow flicker was found to be occurring, then appropriate mitigation would be implemented to reduce the shadow flicker to acceptable levels and control the impact at source.</p> <p>Control at source will prevent shadow flicker from occurring and is considered to be the most effective mitigation measure to mitigate the effects on neighbouring properties. This involves shutting the wind turbine down at times that flicker is likely to occur. These times can be pre-calculated and programmed into the windfarms SCADA system (shutdown calendar) based on actual wind turbine position, actual receptor locations and dimensions and monitored meteorological data. Photocells can also be installed that determine whether ambient light levels are sufficient for distinct shadows (and therefore shadow flicker) to be generated to prevent unnecessary shutdowns.</p> <p>Alternatively, a shadow flicker protection system can be incorporated into the SCADA system. This calculates the locations of shadows in real time, determines whether these coincide with pre-programmed locations and takes into account ambient lighting before triggering a shutdown. These systems provide greater flexibility than shutdown calendars as it allows for new locations to be programmed.</p>
	Carbon Balance	N/A	N/A

Table 14.1 Schedule of Commitments

⁹ SEPA (2013): SEPA Guidance Notes WST-G-027 "Management of Forestry Waste". Available online at: https://www.sepa.org.uk/media/28957/forestry_waste_guidance_note.pdf.

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