Section 15
Schedule of Mitigation

Contents

Tables

Glossary

Term	Definition
Buffer	An area which defines a theoretical zone of protection for a certain asset(s)
Candela	SI base unit of luminous intensity; that is, luminous power per unit solid angle emitted by a point light source in a particular direction.
Civil Aviation Authority	The public corporation which oversees and regulates all aspects of aviation in the United Kingdom.
Core Path	A public path forming part of a system of paths as identified by the local authorities. Core Paths must cater for everyone and provide reasonable access throughout the relevant authorities' area.
Environmental Impact Assessment	The process by which information about the environmental effects of a project is evaluated and mitigation measures are identified.
Environmental Impact Assessment Report	Statutory obligation to provide environmental assessment of certain developments. The environmental impact assessment report is the collation of these assessments.
Geographic Information System (GIS)	A software system designed to capture, store, manipulate, analyse, manage, and present all types of geographical data.
Ice Throw	The process whereby ice or snow built up on a wind turbine blade breaks off and is thrown to the ground during the operation of the wind turbine.
Micro-Siting	The process of positioning turbines within a specified area for optimum performance and wind yield.
Ministry of Defence	The Ministry of Defence is the British government department responsible for implementing the defence policy set by the Government and is the headquarters of the British Armed Forces
Mitigation	Term used to indicate avoidance, remediation or alleviation of adverse impacts.
Nacelle	The housing unit at the top of the turbine tower, typically containing the generator and gearbox.
NatureScot	Formerly known as Scottish Natural Heritage (SNH)
Power Curve	A graphical representation of the relationship between power output and an independent variable. For a wind turbine this variable would be wind speed.
Radar	A system for detecting the presence, direction, distance, and speed of aircraft, ships, and other objects, through use of radio waves.
Right of Way	A specific route through grounds or property belonging to another, with legal rights established by usage or grant.
ScotWays	A voluntary organisation, charity and a company limited by guarantee whose aims are the preservation, defence, restoration and acquisition of public rights of access for the public benefit in Scotland.
Screening	To conceal, protect, or shelter (someone or something) with a screen or something forming a screen (e.g. buildings, vegetation, fences)
Shadow Flicker	The flickering effect caused when rotating turbine blades periodically cast a shadow over neighbouring properties as they turn, through constrained openings such as windows.
Tip Height	The maximum height of the turbine above ground level, when any given blade is aligned vertically.
Wind Turbine	The structure comprising the tower, nacelle and blades that generate power from the wind by the rotation of the blades.

Abbreviations

Abbreviation	Description
ATC	Air Traffic Control
CAA	Civil Aviation Authority
CEMP	Construction Environmental Management Plan
cd	Candela
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
GI	Ground Investigations
GIS	Geographic Information System
HGV	Heavy Goods Vehicle
HMG	Habitat Management Group
HMP	Habitat Management Plan
km	Kilometres
m	Metres
MoD	Ministry of Defence
NATS	National Air Traffic Services
NERL	NATS (En Route) plc
PRMS	Primary Radar Mitigation Scheme
ScotWays	Scottish Rights of Way and Access Society
SHPP	Species and Habitat Protection Plan
SI	Site Investigations

Schedule of Mitigation

15.1 Introduction

15.1.1 This section of the Environmental Impact Assessment Report (EIAR) provides a summary of the mitigation measures identified throughout the EIAR to avoid, prevent, reduce or offset the potential effects as a result of the proposed Scoop Hill Community Wind Farm. These mitigation measures will be applied to a variety of both technical and environmental matters at the following stages of the development: prior to construction, during the construction phase and during the operational phase of the wind farm.

15.1.2 This Schedule of Mitigation has been produced, in line with The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

15.1.3 Embedded mitigation which has already been incorporated into the final design of the Proposed Development (otherwise known as 'Design Mitigation') is detailed in Section 3: Site Selection, Design and Evolution, and accordingly within individual sections of the EIAR such as Section 10: Hydrology, Geology and Hydrogeology and where appropriate in the Planning Statement. They are not repeated again within Section 15.

15.2 Schedule of Mitigation

15.2.1 The mitigation measures put forward within the Scoop Hill Community Wind Farm EIAR are all detailed within Table 15.1. By having them contained in one location at the end of the EIAR, it should be easier for the Energy Consents Unit and Scottish Ministers to understand the mitigation required for the Proposed Development.

15.2.2 The purpose of this section of the EIAR is to aid the decision-making process and to ensure the mitigation measures and conditions proposed are attached to any planning consent which may be granted by Scottish Ministers.

15.2.3 Greater detail on each mitigation measure and why it is required, is provided in the corresponding technical and environmental sections of the EIAR. It should also be noted that an Outline Construction Environmental Management Plan (CEMP) and an Outline Habitat Management Plan (HMP) have been submitted to accompany the S36 application for Scoop Hill Community Wind Farm and these contain further information and detail relating to best practice measures to be implemented, should permission be granted.

Table 15.1: Schedule of Mitigation

Section of the EIAR	Matter requiring mitigation/condition	Timing	Mitigation
Section 2: Detailed Project Description	Aviation lighting	Construction	As the turbines are all taller than 150m they require to be fitted with aviation lighting. A scheme for aviation lighting shall be submitted to the Planning Authority for written approval in consultation with the CAA and MOD.
	Traffic	Construction	A Construction Traffic Management Plan and an Abnormal Loads Delivery Traffic Management Plan will be produced in consultation with and approved by Dumfries & Galloway Council Roads Department and Transport Scotland.
	Micro-siting	Construction	Micro-siting allowance of up to 100m in all directions is required to accommodate actual ground conditions. This will be managed onsite by the ECoW, prior to and during construction.
	Watercourse Crossings	Construction	Each watercourse crossing will be designed and constructed in line with current best practice guidance and in accordance with the SEPA Construction Site License and authorization.
	Blasting	Construction	If blasting is required, then a Blasting Method Statement will be written and agreed prior to construction and blasting commencing.
	Waste	Construction	A Waste Management Strategy will be written, subject to approval by the Local Authority and SEPA. This will be included within the CEMP.
	Access Tracks	Construction	Floating construction will be used for all access tracks which are located on peat which is above 0.5m in depth or deeper, and on priority habitat.
	Borrow Pits	Construction	A Borrow Pit Site Management Plan (BPSM) will be produced prior to construction commencing, once the GI and SI works have been completed, which will subsequently inform the BPSM. The BPSM will be subject to approval by SEPA and NatureScot.
	All construction related works and the management of them	Construction	A Construction Environmental Management Plan (CEMP) will be written and approved by the Local Authority, SEPA and NatureScot prior to construction commencing. This will also include a Pollution Prevention Plan which is required for the Construction Site License, again subject to approval by SEPA. An outline CEMP has been submitted with the S36 application.
	Health & Safety	Construction and Operation	Fencing installed around certain areas of construction works e.g. foundations, borrow pits, to prevent livestock/wildlife falling into excavations. Core Paths and Public Rights of Way to have signage installed to warn of construction works. If paths need to be diverted, prior notification and signage will be installed, with prior approval sought from the Local Authority in advance of any diversions being implemented. The wind farm will be operated and managed in accordance with strict health & safety standards at all times throughout its operation life.
	Decommissioning	Decommissioning	A Decommissioning Bond will be put in place with the Local Authority. A Decommissioning Method Statement will be produced and agreed with the Local Authority, landowners and statutory consultees.
Section 5: Socio-economics, Population and Community Involvement	Safety	Construction	Fencing installed around certain areas of construction works e.g. foundations, borrow pits, to prevent livestock/wildlife falling into excavations.
	Safety	Construction	Core Paths and Public Rights of Way to have signage installed to warn of construction works. If paths need to be diverted, prior notification and signage will be installed, with prior approval sought from the Local Authority in advance of any diversions being implemented.
	Traffic	Construction	To reduce traffic and transport-related risks and associated impacts, Traffic Management Plans will be produced in conjunction with Transport Scotland and the Local Authority Roads Department.
	Safety	Operation	The wind farm will be operated and managed in accordance with strict health & safety standards at all times throughout its operation life.
Section 6: Landscape and Visual Impact Assessment	Turbine layout, infrastructure design	Design	The layout design of the wind farm has been an important part of the EIA process and is at a stage where a notable contribution can be made to the mitigation of potential landscape and visual effects, creating a wind farm which is appropriate for the landscape and visual environment of an area. The LVIA has been carried out in conjunction with the design iteration of the Proposed Development, and it has informed the final layout and infrastructure design. Landscape and visual mitigation measures have been incorporated through the iterative design process in order to reduce potential adverse landscape and visual effects, which has included the removal of turbines and variation to turbine tip heights and detailed consideration of the DGC LDP2 Spatial Framework Map 8 and the Supplementary Guidance 'Wind Energy Development: Development Management Considerations' - Map 5 . The design process is further detailed in Section 3: Site Selection, Design and Evolution of the EIAR.
	Turbine aviation lighting	Operation	Prior to the operation of the wind turbines, aviation lights will be fitted to each turbine, as they are all greater than 150m in tip height. To minimise the effects of the lighting, technical solutions will be implemented which are approved by the CAA, which could include the fitting of a 'cowl' device which shields the light and restricts the downward spread of the light beam, or alternatively, the implementation of a 'smart' aviation lighting solution such as radar-activated lighting.
Section 7: Ornithology	Species Protection	Construction and Operation	A Habitat Management Plan (HMP) and a Species Protection Plan (SPP) will be written as part of a programme of mitigation measures for ornithology. These documents will be subject to approval from a variety of organisations. Their main purpose will be to ensure disturbance and potential impacts are minimised, all work is carried out in accordance with relevant

			wildlife legislation, will seek to improve the value of the area through changes to land management, and increase overall biodiversity through targeted management for specific species. An Outline HMP has been submitted with the S36 application.
	Ecological Clerk of Works	Pre-construction, Construction and Operation	An Ecological Clerk of Works (ECoW) will be appointed to oversee all construction work and to ensure it is undertaken correctly and in accordance with legislation, good practice guidance and all approved planning conditions and requirements. The ECoW will also have the power to suspend works if an incident or breech occurs on site.
	Habitat Management Group	Pre-construction, Construction and Operation	A Habitat Management Group (HMG) will be set up to oversee the production and delivery of the HMP. The HMG is likely to consist of representatives from various organisations including NatureScot, Dumfries & Galloway Council, the RSPB along with the wind farm developer, landowners and the ECoW. The HMG will review the habitat management works and will be responsible for deciding if the land management proposals are working or if they need altering.
	Pre-construction monitoring	Pre-construction	Prior to construction commencing, a number of species will be monitored in order to identify nest locations. This will manly focus on Goshawk, Osprey, Merlin and Peregrine. Pre-construction monitoring will also take place for Golden Eagles, in connection with the South of Scotland Golden Eagle Project (SoSGEP).
	Ground clearance, key-hole felling and breeding birds	Construction	In order to minimise the potential impacts on breeding birds during construction, all ground clearance works including key-hole felling will be undertaken outside the bird breeding season, which is generally accepted to be mid-March to August.
	Breeding Season	Construction	If ground clearance work is required during the bird breeding season, this will be kept to a minimum. The ground will be checked by a competent ornithologist prior to works commencing, with a maximum of five days to clear each stage after each nest check, before checking is required again.
	Species Protection – Common Crossbill	Construction	A Species Protection Plan specifically for Common Crossbill will be written, as requested by NatureScot. This is required as Common Crossbill are a Schedule 1 species which nests very early in the season (as early as December), however this is very much dependent on the cone crop. The SPP will be written nearer to the time of felling (post-consent) in order that suitable mature conifer stands can be identified and felled at the correct time (September to November).
	Micro-siting	Pre-construction and Construction	A micro-siting allowance of 100m has been set, which will be controlled and managed by the appointed ECoW. However, any micro-siting between 50-100m will also need approval by SEPA.
	Buffer zones	Construction	Buffer zones will be implemented as required for different species in order to minimise potential disturbance and displacement. Buffers include: - Black grouse lek on Broadfield Height - No work will take place within 750m of the lek during April and May, before 9am, in order to avoid disturbing lekking birds; and - A suitable buffer to be set up around the Golden Eagle roost locations.
	Golden eagle mitigation	Pre-construction, Construction and operation	The Developer, the ECoW and the HMG will liaise and work with the SOSGEP to monitor their activity on and around the site and how they react to construction works and operational turbines. Habitat enhancement works specific for Golden Eagles to be agreed by all parties along with assistance for their release project and work with schools and communities.
	Post-construction monitoring	Operation	Post-construction (post-development) monitoring is used to determine the effectiveness of the mitigation measures implemented and is a crucial element in assessing the true extent of impacts on birds from wind farm developments. Various bird species including goshawk and Golden Eagle will be monitored in the 1st year following the completion of construction and commissioning works. They will then be monitored in Years 2 and 3 as well, with reports produced which will be shared with the relevant organisations like NatureScot, RSPB and the Local Authority. Further monitoring will take place in Year 5, Year 10, Year 15 and Year 20.
	Decommissioning works	Decommissioning	As decommissioning works are similar in nature to construction works and have the greatest potential for disturbing and displacing birds during the nesting season, the decommissioning of the site will be undertaken outside of the bird breeding season to minimise potential impacts on nesting and breeding birds onsite.
	All construction related works and the management of them	Construction	A Construction Environmental Management Plan will be written and approved by the Local Authority, SEPA and NatureScot prior to construction commencing. This will also include a Pollution Prevention Plan which is required for the Construction Site License, again subject to approval by SEPA. The CEMP will also include specific reference to mitigation measures targeted at ornithology, such as avoiding the bird breeding season, ground clearance works, micro-siting, implementation of buffer zones etc. An outline CEMP has been submitted with the S36 application.
Section 8: Ecology	Habitat and Species Protection	Construction and Operation	A Habitat Management Plan (HMP) and a Species and Habitat Protection Plan (SHPP) will be written as part of a programme of mitigation measures for habitats and protected mammals and other species, including fish. These documents will be subject to approval from a variety of organisations who have biodiversity duties such as NatureScot and SEPA. Their main purpose will be to ensure disturbance and potential problems for key species are minimised, all work is carried out in accordance with relevant wildlife legislation, will seek to improve the value of the area through changes to land management, and increase overall biodiversity through targeted management for specific species. An Outline HMP has been submitted with the S36 application.
	Habitat Management Group	Pre-construction, Construction and Operation	A Habitat Management Group (HMG) will be set up to oversee the production and delivery of the HMP. The HMG is likely to consist of representatives from various organisations including NatureScot, Dumfries & Galloway Council, the RSPB along with the wind farm developer, landowners and the ECoW. The HMG will review the habitat management works and will be responsible for deciding if the land management proposals are working or if they need altering.

	Ecological Clerk of Works	Pre-construction, Construction and Operation	An Ecological Clerk of Works (ECoW) will be appointed to oversee all construction work and to ensure it is undertaken correctly and in accordance with legislation, good practice guidance and all approved planning conditions and requirements, to ensure the protection of habitats and wildlife. The ECoW will also have the power to suspend works if an incident or breech occurs on site.
	All construction related works and the management of them	Construction	A Construction Environmental Management Plan will be written and approved by the Local Authority, SEPA and NatureScot prior to construction commencing. This will also include a Pollution Prevention Plan which is required for the Construction Site License, again subject to approval by SEPA. The CEMP will also include specific reference to mitigation measures targeted at habitats and wildlife, such as use of floating access tracks on ground where peat is greater than 0.5m, installation of ramps and fencing in deep excavations, micro-siting, implementation of buffer zones etc. An outline CEMP has been submitted with the S36 application.
	Micro-siting	Pre-construction and Construction	A micro-siting allowance of 100m has been set, which will be controlled and managed by the appointed ECoW. However any micro-siting between 50-100m will also need approval by SEPA.
	Surface Water and drainage	Construction	Robust surface water management measures and onsite drainage measures (e.g. suitably sized attenuation ponds, silt traps and silt nets, cross drains etc.), will be put in place following good practice. These will be overseen and agreed with the ECoW and regular checks will take place to ensure all measure are working as intended. All pollution prevention measures will be detailed in a Pollution Prevent Plan (PPP) required to obtain a SEPA construction site license which will also form part of the CEMP.
	Waste Management	Construction	A Waste Management Plan will be written and included in the CEMP which will ensure all waste is correctly handled, stored, recycled and disposed of via certified waste contractors. This will also include the storage and handling of fuels, oils, chemicals and all other materials required during the construction process.
	Working area	Construction	The working area will be kept to a minimum in order to avoid unnecessary peripheral habitat disturbance and the accumulation of unnecessary amounts of loose material that might be washed away during periods of heavy rainfall.
	Floating construction	Construction	Access tracks will be built using 'floating' construction techniques in areas where peat is greater than 0.5m in depth, as well as for traversing mire habitats, as it allows for water to pass underneath the track and through lower layers, thus reducing potential impacts on the hydrology of the habitat and ground.
	Deep Excavations	Construction	Before and during deep excavations (e.g. borrow pits, foundations), best practice will be employed to ensure wildlife cannot access the excavations, however if they do, they can escape. Measures include temporary fencing around the excavations, installation of a ramp etc. Settling ponds will also be used to store excess water accumulating in the excavation areas.
	Habitat Enhancement	Construction and Operation	Habitat enhancement work will take place to improve the condition of the habitats found on site. This will include, but is not limited to, the following: restoration of dry modified bog via grip-blocking and reduced grazing, creation of mire habitats through basin mires as part of the borrow pit restoration measures, and the planting of cleuch woodland.
	Bats	Construction	Key-hole felling to be undertaken in winter/early spring when bats are less likely to be active. Any construction work which takes place during the active season for bats, must be limited to daylight hours, with no work undertaken at dawn or dusk near to preferred foraging areas. This would also avoid the need for lighting at night which could deter bat foraging, but also would attract moths to the lights which the bats would then feed on. Turbines to be located with a minimum distance of 50m from the blade tip to the forestry edge. Bat boxes erected in suitable locations, such as farmhouses or in woodland which is distant from the turbines.
	Otters	Construction	A pre-construction survey will be undertaken to determine the current status of otters onsite and if there has been any change to their use of the site, mitigation measures are implemented accordingly to ensure otters are protected. The ECoW will ensure the location of access tracks and structures are more than 30m away from a potential holt or lie-up (100m from a breeding holt) and strict precautionary methods of working will be set in place. Strict pollution prevention measures implemented to ensure no impacts on water quality.
	Badgers	Construction	A pre-construction survey will be undertaken to determine the current status of badger onsite, checking existing setts and searching for any newly excavated setts. If setts are identified close to the turbines and wind farm infrastructure, a 30m buffer will be implemented around any setts to avoid potential disturbance to badgers inside during the construction works. Disturbance of these setts will be avoided during the breeding season (December to June) and the buffer zone will be set and monitored by the ECoW. Setts within 100m of a borrow pit will require a license from NatureScot and excavation will not take place during December to June.
	Red Squirrels	Construction	A pre-construction check will take place where all key-hole felling is due to take place to check for dreys. All key-hole felling will take place outwith the breeding season to reduce the impact on breeding red squirrels. No broad-leaved tree planting will take place within the forest as this may attract grey squirrels.
	Pine Marten	Construction	Pre-construction checks will take place where all felling is to take place to check for pine marten dens prior to the felling works.

			All key-hole felling will take place outwith the breeding season to reduce the impact on breeding pine marten. Pine marten denning boxes will be installed, outwith the conifer plantation in areas of broad-leaved woodland, in order that they are more likely to prey on grey squirrels rather than the red squirrels.
	Migratory salmonids, lampreys and eels	Pre-construction, Construction and operation	Pre-construction surveys of the watercourse will take place along with water monitoring. All infrastructure will be located a minimum of 50m from watercourses, except for where the access track needs to cross a watercourse and then culverts/bridges will be installed which are designed to allow fish passage at all times and their construction to be agreed with SEPA, the ECoW and the River Annan District Salmon Fishery Board. Surface water management measures to be implemented in accordance with best practice and the CEMP, along with the Pollution Prevention Plan, to avoid the watercourses becoming contaminated.
	Reptiles and Amphibians	Construction	Pre-construction checks for the presence and location of reptiles and amphibians. Ground clearance works will be undertaken outwith the spring and summer months in order to minimise potential disturbance to reptiles. Any suitable hibernaculum's used by hibernating reptiles must be de-constructed in July (post breeding and prior to hibernation), which will be overseen by the ECoW. Any new hibernaculum's will be constructed on site on moorland, as advised by the ECoW.
	Watercourse Crossings	Construction and Operation	All watercourse crossings will be designed with sufficient headroom to allow passage by otters along watercourses, including during spate conditions as well as providing passage for fish species, whilst also ensuring good water quality and flow. This may necessitate the inclusion of ledges and diversionary fences to facilitate movement of otters however the specific design of each watercourse crossing will be agreed with SEPA/NatureScot prior to their construction. During the construction and installation of the crossings, if any culverts or piping is stored on site, they will be capped to avoid entrapment of wildlife inside. During operation, the watercourse crossing points will be checked and regularly maintained to ensure they do not become blocked which would then inhibit the movement of species such as fish and otter who rely on the watercourses.
	Decommissioning	Decommissioning	The measures implemented during the construction phase should also be implemented during the decommissioning phase, in line with legislation and best practice at the time when decommissioning is due to take place. Consideration however should be given to the actual status of the species and habitats present on site at that time, with pre-decommissioning checks and surveys undertaken accordingly as recommended by an ECoW.
	Toolbox talks	Construction and Decommissioning	All construction and decommissioning workers to be briefed on the habitat and species onsite and all measures in place to ensure the protection of the habitats and species e.g. location of badger setts and the marked-out exclusion zone around the entrances to the setts. All workers to follow best practice at all times.
Section 9: Cultural Heritage	Written Scheme of Investigation	Construction	A Written Scheme of Investigation will be produced which details the location and scope of the archaeological evaluation works to be undertaken on site during the construction phase. The Written Scheme of Investigation will be agreed with the Dumfries & Galloway Council Archaeologist prior to construction commencing. For the Border Crawford-Inveresk possible Roman road (MDG5027), this is likely to comprise of archaeological monitoring of groundworks during construction. In the case of undiscovered archaeological remains which are found during the construction works, the programme of archaeological evaluation will identify any significant undiscovered remains and allows for effects upon them to be mitigated by avoidance and preservation in situ where possible, or otherwise by excavation and recording.
	Excavation and Recording	Construction	Where construction effects are unavoidable, these will be offset by excavation and recording of the remains in accordance with SPP, paragraph 150 and PAN2/2011, sections 25-27 and the policies in the Dumfries & Galloway Council LDP2 by the appointed archaeological contractor/consultant who is undertaking the watching brief.
	Fencing of assets	Pre-construction and Construction	Fencing off of the following assets will take place prior to construction commencing: Leithenhall Burn burnt mounds (MDG5357, MDG5376 and MDG5379), Newbigging Ring Ditch (MDG7267) and the Craigfield Farmstead (MDG10462).
	Toolbox talks	Construction	Construction workers will be given toolbox talks regarding the onsite cultural heritage assets, those which have been fenced off for their protection and the archaeological watching brief which will be taking place. The workers have a duty to report anything they discover whilst excavating onsite and they must avoid working near the assets which have been marked-out and fenced off to ensure no direct impacts occur on those important assets.
Section 10: Hydrology, Geology and Hydrogeology	Turbine layout, infrastructure design	Design	Hydrological influences have been incorporated into the final design and layout of the turbines and associated infrastructure as it has been a key requirement that the Proposed Development helps maintain or improve the local hydrology, as a poor design would result in significant implications to the hydrological environment with secondary effects on soils and ecology. More specific information relating to 'Mitigation by Design' based on hydrological factors is detailed in Section 3 of the EIAR and Section 10 and its technical appendices of the EIAR. These include but are not limited to: location and depth of peat, buffer distance from watercourses, location of existing access tracks and watercourse crossings points, slope angles, key-hole felling and other onsite considerations.

	All construction related works and the management of them	Pre-construction, Construction and Operation	A site-specific Construction Environmental Management Plan will be written and approved by the Local Authority, SEPA and NatureScot prior to construction commencing. This will also include a Pollution Prevention Plan which is required for the Construction Site License, again subject to approval by SEPA. The CEMP will facilitate the implementation of industry good practice measures in such a manner as to prevent or minimise effects on the surface and groundwater environments. The CEMP will include information on the following: - Drainage – all runoff derived from construction activities and site infrastructure will not be allowed to directly enter the natural drainage network. All runoff will be adequately treated via a suitably designed drainage scheme with appropriate sediment and pollution management measures. Drainage will be designed to accommodate storm flows based on a 1 in 200 year event plus climate change to help maintain the existing hydrological regime; - Storage – all equipment, materials and chemicals will be stored well away from any watercourses. Chemical, fuel and oil stores will be sited on impervious bases with a secured bund at a designated location; - Vehicles and refueling – standing machinery will have drip trays placed underneath to prevent oil and fuel leaks causing pollution. Where practicable, refueling of vehicles and machinery will be carried out in designated areas, on an impermeable surface and well away from any watercourses; - Maintenance – maintenance to construction plant will be carried out in designated zones, on an impermeable surface well away from any watercourses or drainage, unless vehicles have broken down necessitating maintenance at the point of breakdown, where special precautions will be taken; - Welfare facilities – onsite welfare facilities will be adequately designed and maintained to allow the appropriate disposal of sewage; - Cement and concrete – use of wet concrete in and around watercourses will be avoided and carefully controlled through implementation of the buffer zones where applicable and good practice construction methods; - Monitoring Plan – all activities undertaken as part pf the proposal will be monitored throughout the construction phase to monitor environmental compliance. Water quality monitoring will also occur throughout each phase of the Proposed Development to maximise the effectiveness of embedded mitigation measures whilst monitoring effects on the hydrological environment; - Contingency Plans – a site specific Emergency Response Plan will be implemented to allows plans to be put in place to manage a spill or other pollution incident. Emergency equipment will be available on site (e.g. spill kits), training and advice on action to be taken and who should be informed in the event of a pollution incident; - Training – all staff and construction personnel will be trained in both normal and emergency operations and procedures and made aware of any restrictions and highly sensitive areas on site; and - Pollution Prevention – Detailed mitigation and good practice construction techniques will be implemented which will detail site specific measures relating to Runoff and Sediment management, pumping and dewatering of excavations, concrete works, foul water.
	Watercourse Crossings	Construction and Operation	All watercourse crossings will be designed to maintain onsite hydrology as well as with sufficient headroom to allow free passage of mammals and aquatic species in the watercourses, whilst also ensuring good water quality and flow. This may necessitate the inclusion of ledges and diversionary fences to facilitate movement of otters however the specific design of each watercourse crossing will be agreed with SEPA/NatureScot prior to their construction. During the construction and installation of the crossings, if any culverts or piping is stored on site, they will be capped to avoid entrapment of wildlife inside. During operation, the watercourse crossing points will be checked and regularly maintained to ensure they do not become blocked which would then inhibit the movement of species such as fish and otter who rely on the watercourses.
	Migratory salmonids, lampreys and eels	Pre-construction, Construction and operation	Pre-construction surveys of the watercourse will take place along with water monitoring. All infrastructure will be located a minimum of 50m from watercourses, except for where the access track needs to cross a watercourse and then culverts/bridges will be installed which are designed to allow fish passage at all times and their construction to be agreed with SEPA, the ECoW and the River Annan District Salmon Fishery Board. Surface water management measures to be implemented in accordance with best practice and the CEMP, along with the Pollution Prevention Plan, to avoid the watercourses becoming contaminated.
	Micro-siting	Pre-construction and Construction	A micro-siting allowance of up to 100m in all directions is required to accommodate actual ground conditions. This will be controlled and managed by the appointed ECoW. However any micro-siting between 50-100m will also need approval by SEPA.
	Surface Water and drainage	Construction	Robust surface water management measures and onsite drainage measures (e.g. suitably sized attenuation ponds, silt traps and silt nets, cross drains etc.), will be put in place following good practice. These will be overseen and agreed with the ECoW and regular checks will take place to ensure all measure are working as intended. All pollution prevention measures will be detailed in a Pollution Prevent Plan (PPP) required to obtain a SEPA construction site license which will also form part of the CEMP.
	Waste Management	Construction	A Waste Management Plan will be written and included in the CEMP which will ensure all waste is correctly handled, stored, recycled and disposed of via certified waste contractors. This will also include the storage and handling of fuels, oils, chemicals and all other materials required during the construction process.

	Floating construction	Construction	Access tracks will be built using 'floating' construction techniques in areas where peat is greater than 0.5m in depth, as well as for traversing mire habitats, as it allows for water to pass underneath the track and through lower layers, thus reducing potential impacts on the hydrology of the habitat and ground.
	Ecological Clerk of Works	Pre-construction, Construction and Operation	An Ecological Clerk of Works (ECoW) will be appointed to oversee all construction work and to ensure it is undertaken correctly and in accordance with legislation, good practice guidance and all approved planning conditions and requirements. The ECoW will also have the power to suspend works if an incident or breech occurs on site.
	Peat	Construction and Operation	A site-specific Peat Management Plan will be produced (a draft PMP is included as a Technical Appendix to Section 10), which provides further information and guidance on the environmentally compliant re-use and management of excavated peat across the proposed Scoop Hill Wind Farm (the Proposed Development). The PMP will have a strategy to manage peat in a sustainable manner, whilst minimising excavation via the adoption of appropriate construction methods. Targeted re-use of peat as part of the reinstatement works shall also be a primary consideration. The PMP will be approved by SEPA prior to construction commencing.
	Private Water Supplies	Construction	Standard Good Practice mitigation measures will be deployed to ensure any private water supplies are not impacted in terms of quality or quantity. Details will be included within the site-specific CEMP however it will include the following areas: Silt Laden Runoff, Fuels and Oils, Surveillance and Site Audits, Emergency Contingency Measures (spill response, specialist contractors, hazards).
	Peat Slide	Construction	A Peat Landslide Hazard Risk Assessment will be produced prior to any construction commencing on site, in order to minimise the potential for and peat slides during the construction works. The first version of the report is included in Section 10 as a Technical Appendix, and the revised final version will be produced following the onsite GI and SI works undertaken pre-construction. It will include a geotechnical risk register with associated mitigation to reduce/eliminate each potential risk. These measures include drainage design, weather and ground monitoring and regular inspections, de-watering operations, robust and strict controls on the phasing and pace of construction in specific locations, peat depth contour mapping, implementation of specific geotechnical engineering construction techniques, use of appropriate machinery and many other mitigation measures such as the use of experienced and competent construction contractors, detailed monitoring during construction, identification of environmentally sensitive zones, and a detailed Construction Method Statement (CMS) which incorporates the conclusion of the peat stability report and develops the appropriate mitigations to respond to peat slide risk.
	Site Investigations	Pre-construction	Prior to construction commencing, a detailed intrusive ground investigation should be carried out (post-consent). This will seek to further characterize the peat deposits with emphasis on advanced in-situ shear strength testing and targeted undisturbed sampling and laboratory testing. The results can be used to refine and finalise the turbines and infrastructure locations.
Section 11: Noise	Construction noise	Construction	Noise during construction works can be controlled by generally restricting works to standard working hours and exclude Sunday's unless specifically agreed otherwise.
	Noise Control Plan	Construction	A Noise Control Plan will be produced that includes procedures for: - Ensuring compliance with statutory or other identified noise control limits; - Minimizing noise from construction related traffic on the existing road network; - Ensuring all works are carried out in accordance with the principle of 'Best Practicable Means' as defined in the Control of Pollution Act 1974; - General induction training for site operatives, and specific training for staff having responsibility for particular aspects of controlling noise from the site.
	Blasting	Construction	If blasting is required for the development, a pre-blasting noise management plan will be prepared which would identify the most sensitive receptors that could potentially be affected by blasting noise. The Plan will contain details of the proposed frequency of blasting and proposed monitoring procedures. The operator will inform the nearest residents of the proposed times of blasting and of any deviation from this programme in advance of the operations.
	Wind Turbines	Operation	Operational noise would ultimately be controlled via planning conditions which set out noise limits for the Proposed Development. It should be noted that the site has been designed such that predicted noise levels associated with the operation of the Proposed Development are expected to meet the requirements of ETSU-R-97 with all turbines operating unrestricted. Therefore, no mitigation measures are required as the operational noise levels meet the relevant derived noise limits.
Section 12: Traffic and Transport	Construction Traffic	Construction	Prior to the commencement of construction, a Construction Traffic Management Plan will be submitted to and approved by Transport Scotland and Dumfries & Galloway Council Roads Department to ensure that all general construction traffic can be transported along the [trunk road/ local public roads] network safely and efficiently. This is expected to include details on the final access route(s) for construction traffic, construction traffic management measures, emergency services liaison procedures, details of additional speed restrictions and any temporary signage which is required.
	Abnormal Load Deliveries	Construction	Prior to the commencement of abnormal load deliveries to site, the proposed route and Abnormal Load Traffic Management plan for any abnormal loads on the [trunk road/ local public roads] network will be approved by Transport Scotland and Dumfries & Galloway Council Roads Department, prior to the movement of any abnormal loads. The TMP shall include details of the final access route for all abnormal load vehicles and traffic, swept path analysis and details on the temporary removal of any street furniture, junction widening, traffic management measures. There will also be details on the timing of the abnormal loads, the restrictions in place, convoys and abnormal load escorts, temporary signage and a road haulers code of conduct to be followed at all times.

	Decommissioning Traffic	Decommissioning	Baseline traffic flows on all of the affected roads at the end of the 40-year operational life of the wind farm is unknown therefore any potential impacts on roads as a result of the decommissioning works, would be handled in a similar way as for the construction phase. A Decommissioning Plan, incorporating an updated TMP, would be drawn up and agreed at least 12 months prior to decommissioning commencing in consultation with Transport Scotland and Dumfries & Galloway Council Roads Department.
Section 13: Forestry	Turbine layout, infrastructure design	Design	The layout design of the wind farm has been an important part of the EIA process and is a stage where a notable contribution can be made to the mitigation of forestry felling within the local area. The Forestry Assessment has been carried out in conjunction with the design iteration of the Proposed Development, and it has informed the final layout and infrastructure design, and therefore the final felling plan, which is key-hole felling and not wholesale clear felling. In addition, by increasing the height of the turbines, felling requirements have been reduced. Also, existing open ground and wind breaks within the commercial forestry have been used for access track routes and locations for some of the infrastructure, which has further reduced the amount of felling required. The design process and mitigation by design, is further detailed in Section 3: Site Selection, Design and Evolution of the EIAR and in Section 13: Forestry of the EIAR.
	Ecology	Pre-construction, Construction and Operation	A variety of mitigation measures to protect the onsite ecology are detailed below: - A distance of least 50m will be maintained from the blade tip to the forestry edge in order to protect bats; - Broad-leaved tree and shrub planting to be done within the cleughs and along watercourse, away from the wind farm area in order to provide additional foraging from bats away from the turbines; - Ensure strict pollution prevention measures and good practice are followed to ensure watercourses are not polluted during felling operations in order to protect otters and fish. This will also include water monitoring; - Enhancement measures to be implemented such as planting up riparian corridors to increase cover/refuge along with attenuation ponds which can be left on site for amphibians, which are a food source for otters; - Pre-construction checks for badgers to check existing and any newly excavated setts. Implementation of a 30m buffer zone around any setts to avoid any potential disturbance to badgers, and avoidance of disturbance during the breeding season; and - Pre-construction checks for red squirrels to check for dreys. To reduce the impact on breeding squirrels, felling will take place outwith the breeding season. Also, no broad-leaved tree planting to take place within the forest as this may attract grey squirrels.
	Ornithology	Pre-construction, Construction and Operation	A variety of mitigation measures to protect the ornithology of the site are detailed below: - Pre-construction checks will identify any goshawk nests and no work will take place within 1km of the nest during the breeding season; - Following the completion of construction, post-construction monitoring of the ornithology of the site will be undertaken for Years 1, 2, 3, 5, 10, 15 and 20; - A species protection plan for Common Crossbill will be produced as requested by NatureScot; and - In order to minimise and avoid disturbance to nesting and breeding birds, trees will be felled out with the breeding season.
	Hydrology	Construction and Operation	A variety of mitigation measures to reduce and avoid hydrology related impacts are details below: - A CEMP will be produced, which also facilitates the use of best practice, to prevent or minimise potential effects on the surface and groundwater environment during the forestry felling works. This will also incorporate drainage requirements, a water monitoring plan, contingency plans in case of incidents and training for all construction personnel; - Appropriate design and installation of watercourse crossings, subject to approval by SEPA; and - Drainage systems and sediment management measures to be designed which wholly mitigate effects on the hydrological environment, with regular inspection and maintenance carried out, particularly after prolonged heavy rainfall.
	Landscape and Visual	Construction	Commercial forestry onsite will be key-hole felled rather than wholesale clear felled, which reduces the visual impact of forestry felling.
	Compensatory Planting	Operation	In accordance with the Scottish Government Policy on Control of Woodland Removal, compensatory planting will be undertaken to compensate for the loss of trees which are felled in order to facilitate the construction and operation of the Proposed Development. Compensatory planting will take place both onsite and offsite, and will be equivalent to 293Ha which is the same as the quantity of trees to be felled. Compensatory planting will be agreed and confirmed through a Compensatory Planting Management Plan in consultation with Scottish Forestry.
	Forestry Management	Construction	All felling operations will be carried out in accordance with SEPA guidance on felling and forestry waste and in accordance with Waste Regulations (Scotland) 2017. Further details will be provided within a Forestry Management Plan to be secured via a planning condition and included within the Construction Environmental Management Plan (CEMP), an outline version of the CEMP accompanies this application and EIAR.
Section 14: Other Considerations	Aviation lighting	Operation	All turbines proposed are greater than 150m in height, therefore they will be fitted with aviation lighting as per CAA requirements (1 at the top of the turbine and 1 on the tower). Technical solutions will be deployed to reduce the effects of the aviation lighting such as shielding on the lights to restrict the downward light beam, and/or the use of radar-activated lighting.
	NATS	Operation	With regards to NATS En Route Plc (NERL), a Primary Radar Mitigation Scheme associated with Lowther Hill has been identified and is currently in the process of being agreed. If consent for Scoop Hill is granted, the following conditions would be applied:

			1. No part of any turbine shall be erected above ground until a Primary Radar Mitigation Scheme agreed with the Operator has been submitted to and approved in writing by the [Scottish Ministers] or [Council] [Delete/amend as applicable] in order to avoid the impact of the development on the Primary Surveillance Radar Infrastructure of the Operator and associated air traffic management operations; and 2. No part of any turbine shall be erected above ground until the approved Primary Radar Mitigation Scheme has been implemented and the development shall thereafter be operated fully in accordance with such approved scheme.
	Shadow Flicker	Operation	If shadow flicker is deemed to be causing a problem, then the following methods of mitigation can be implemented to ensure it does not occur. Mitigation measures may include automatic turbine slow-down periods when all factors and conditions are in place which could cause shadow flicker to arise, or the implementation of screening.
	Ice Throw	Operation	In order to reduce the risk of ice throw and the risk of damage occurring if it did, the following measures will be adopted: - Turbines located away from occupied buildings, roads and other public areas so the risk of damage or injury is reduced e.g. minimum of tip height +10%; - Turbines are equipped with ice detection systems which works on a power curve analysis method. When certain criteria are identified, the turbine can be shut down thus limiting the risk of ice throw; and - Once the ice has thawed, visual inspections will be undertaken prior to restarting the turbine and the movement of the blades.
	Public Rights of Way	Construction & Operation	Mitigation by design has been a key part of the mitigation for Public Rights of Way and Core Paths, as the final layout has been designed so that the majority of the proposed turbines are set back from the paths, with a minimum separation distance which is equivalent to the blade tip height of the turbines. The majority of the turbines actually exceed this minimum recommended separation distance. During construction, it may be necessary to restrict access to certain areas of the development to ensure the health and safety of the public whilst civil engineering works are ongoing. Access will not be restricted, diverted or closed however without the prior agreement of Dumfries & Galloway Council who are the Access Authority for the region. During Construction and Operation, appropriate health and safety signage will be erected within the development area to ensure health and safety requirements are met at all times, and those using the rights of way are fully aware of the current risks and construction/operation works. Public Rights of Way and Core Paths within the site will also be regularly maintained and checked to ensure they remain accessible and suitable for use during the operational life of the wind farm, with interpretation boards and signposts installed, thus promoting recreational access through the site and the development of designated wind farm walks.