Appendix 3.3

Schedule of Mitigation

Appendix 3.3: Schedule of Embedded Mitigation, Additional Mitigation and Monitoring Measures

1.1 This appendix provides a consolidated list of embedded/good practice mitigation, additional mitigation and monitoring measures which have been identified through the design and Environmental Impact Assessment (EIA) processes, and which will be implemented during construction and operation of the GGRP. Measures are presented on a topic-by-topic basis in **Table 1.1** below, reflecting the chapters of the EIA Report. Where no mitigation or monitoring measures are proposed within a chapter, or for a discrete topic being assessed within a chapter, the chapter or topic has been omitted from this appendix. It should be noted that all design measures which have been incorporated into the design of the GGRP to avoid or minimise the significance of effects have not been included in this appendix as they form part of the project design.

1.2 Prior to the commencement of the GGRP, SPEN will develop a detailed Construction and Environmental Management Plan (CEMP) with the appointed Principal Contractor. An outline CEMP is provided as **Appendix 4.1**. The purpose of the CEMP will be the method by which many of the measures will be implemented and will:

- Provide a mechanism for ensuring that construction methods avoid, minimise and control potentially adverse significant environmental effects, as identified in the EIA Report;
- Ensure that good construction practices are adopted and maintained throughout the construction of the New 132kV OHL and decommissioning of the Existing 132kV OHL;
- Provide a framework for mitigating unexpected effects during construction and decommissioning
- Provide assurance to third parties that agreed environmental performance criteria are met;
- Establish procedures for ensuring compliance with environmental legislation and statutory consent; and
- Detail the process for monitoring and auditing environmental performance.

1.3 The CEMP will be updated when necessary to account for changes or updates to legislation and good practice methods throughout the construction phase. The CEMP will also be amended to incorporate information obtained during detailed ground investigations which will be undertaken post consent and prior to construction activities for the GGRP. Compliance with the CEMP (including procedures, record keeping, monitoring and auditing) will be overseen by a suitably qualified and experienced Environmental Manager from SPEN. The CEMP will contain the following information:

- Policies and objectives;
- Regulatory controls and guidance to be followed;
- A register of contacts confirming the contact details for all key personnel managing environmental issues, including SPEN representatives, the Ecological Clerk of Works (ECoW), Principal Contractor contacts, and appropriate regulator contacts;
- Construction Programme and detailed working method statements;
- A site-specific action plan, providing a register of environmental risks and outlining the requirement for accompanying site;
- Specific mitigation, monitoring and management system reporting procedures; Audit and inspection procedures;
- Training plans; and
- Communication (onsite, key stakeholders, neighbours and community)

1.4 The CEMP will contain the following documents, which the Principal Contractor and their sub-contractors will be required to adhere to throughout the construction process:

- A Pollution Prevention Plan (PPP);
- Construction Method Statements (CMS);
- A Water Protection Plan (WPP);
- A Site Waste Management Plan (SWMP); and
- A Construction Traffic Management Plan (CTMP).

1.5 Performance against these documents will be monitored by SPENs Construction Project Manager and the ECoW throughout the construction (and decommissioning) phases. They will ensure that the works carried out are in accordance with the relevant best practice guidance documents.

1.6 In relation to felling, a number of areas of proposed tree felling have been identified for the creation of the 80m-wide wayleave corridor. With landowner agreement, SPEN will seek to replant certain sections of the wayleave corridor and the wayleave corridor edge with low growing shrub species, sourced from local seed provenance, which are not deemed to put at risk the ongoing safe operation of the OHL. While SPEN cannot commit to implementing these proposed measures, these measures would be implemented as far as possible with the agreement of the landowners. In this context, the proposed measures are not considered committed mitigation, and therefore are not taken into account in the mitigation of any effects identified within this EIA Report.

Table 1.1: Embedded and Additional Mitigation and Monitoring Measures

Topic	Embedded Mitigation	Additional Mitigation	Monitoring Measures
Landscape and Visual **(Chapter 6)**	■ The mitigation of potential landscape and visual effects has been approached through the routeing of the proposed route and, since identification of a proposed route, the consideration of individual steel lattice tower locations. An iterative process of design modification, appraisal and assessment has been ongoing since project inception. This work has been carried out with reference to the Holford Rules: Guidelines for the Routeing of New High Voltage Overhead Transmission Lines (with National Grid Company plc (NGC) 1992 and Scottish Hydro-Electric Transmission plc (SHETL) 2003 Notes.	No additional mitigation measures have been identified that would materially reduce the level of effects assessed.	No monitoring measures are proposed.

Topic	Embedded Mitigation	Additional Mitigation	Monitoring Measures
	Examples of embedded mitigation measures include: ■ Avoidance of sensitive and small-scale landscapes and features which could be dominated by large-scale infrastructure; ■ Identifying an appropriate location to cross the River Nith valley, a sensitive area with a large proportion of residential visual receptors and transport corridors; ■ Use of topography and woodland edges to screen and back cloth steel lattice towers where possible; ■ Existing hedgerows, woodland, tree belts and stone dyke field enclosures along the GGRP route will be retained as far as practical; ■ Any disturbance to or temporary removal of existing field boundaries (e.g. hedgerows, stone dykes or fences) to facilitate construction access will follow identification and agreement with the appointed Environmental Clerk of Works, and be undertaken sensitively to ensure successful reinstatement of these features following completion of construction activities; ■ Construction vehicles will not track across undisturbed areas outside their defined working areas and access corridor; and ■ Any disturbance to verges of access tracks will be made good through revegetation of the verges. ■ Reinstating of existing stone dykes along the route using locally sourced stones and built to match the style and height of existing stone dykes in the area.		
Hydrology, Hydrogeology, Geology and Peat **(Chapter 7)**	**Flood Risk and Increased Runoff** The risk of flooding and pollution of the water environment will be minimised by the remediation of the construction corridor and access tracks as the works progress, limiting the time that bare ground is exposed, or watercourses are being crossed. Much will depend on weather conditions during construction, with a risk of flooding only if construction activities coincide with heavy rainfall in the catchment. Daily weather reports for the construction site will be made available with further mitigation measures put in place if extreme weather conditions are forecast (e.g. the removal of temporary crossings and stoppage of work in advance of extreme rainfall). Mitigation measures to deal with increased surface runoff and potential alterations to drainage patterns will include: ■ Access tracks that will be designed to avoid existing surface flow pathways. If this is not possible, drainage measures will be incorporated including adequately sized culverts that do not restrict flow and allow small watercourses, intercepted field drains and ephemeral streams/surface water flow to pass under the tracks. ■ Drainage ditches will be located on the on the upslope side to intercept and divert 'clean' surface water run-off draining towards the tracks. ■ Ditches in the form of swales parallel to the downslope side of access tracks to capture run-off and sedimentation from the access tracks. These will be used to treat and attenuate surface water run-off before discharge. ■ Existing field drains that will be identified in advance of construction and will be considered when planning the construction of access roads. If field drains are crossed, appropriately sized temporary culverts will be installed to allow the field drains to pass under the access tracks. SEPA have highlighted past issues with field drains discharging directly onto temporary access tracks leading to flooding and pollution issues; this will be avoided. ■ Drains servicing the access tracks having adequate capacity to reduce the chance of water overtopping into open ground. ■ Areas of impermeable ground or hardstanding that will be kept to a minimum through strategic construction management and staged working where possible. Where possible,	■ To reduce the risk of sediment/silt run-off to the water environment during construction, additional mitigation/SuDS (e.g. silt fences, settlement ponds) will be installed around working areas, scaffolding works and access tracks during construction at the following site specific locations: – T1 working area near small drainage ditch; – T3 working area near small, unnamed watercourse; – T9 working area upgradient of the Barr Burn; – T12 working area upgradient of Thwarter Burn; – T14 working area upgradient of Quintin's Burn; – T21 working area and temporary access track upgradient of Guttie Burn; – Access track to T22 close to unnamed watercourse; – Access track to T22 and scaffolding required for OHL stringing across public road upgradient of Polbroc Burn; – T23 working areas and access tracks near drainage ditches within Libry Moor; – T24 working areas and access track near drainage ditches; – T26 working area near drainage ditches; – T27 working area and access track upgradient of Polmeur Burn; – T28 working area near drainage ditches; – T30 working area and scaffolding required for OHL stringing across A76 upgradient of unnamed tributary of Polmeur Burn; – T33 working area upgradient of Birk Burn; – Scaffolding required for OHL stringing across River Nith; – Access track to T40 upgradient of Stank Burn; and – Glenmuckloch Substation upgradient of unnamed watercourse/ditch.	An ECoW will be on site throughout construction to monitor the effectiveness of the embedded and additional mitigation measures. **Hydrology** ■ No fisheries surveys have been undertaken, as embedded mitigation in the form of good practice measures (e.g. buffers from riparian corridors) and standard construction phase mitigation techniques (e.g. pollution prevention measures) will avoid/minimise any anticipated significant effects on aquatic receptors. However, SPEN is committed to undertaking pre-construction and post-completion surveys to address this concern. **Peat Management** During construction, monitoring should be undertaken in any areas where peat is stored, as follows: ■ Regular visual inspection of the outer peat surface of any stored peat to identify any evidence for drying or cracking. ■ Regular coring of stored peat to log the moisture content of stored peat (using the von Post scale to monitor changes in moisture content for peat on the outside and within the peat mound). ■ Clear specification of an action plan in response to these observations, including modifications to coverings, implementation of watering, or construction of temporary berms to retain water in the storage footprint. ■ Acceleration of re-use for vulnerable stores if so identified. ■ Key to the success of the strategy for peat management will be careful monitoring of the post-construction works and any restoration activities. A monitoring programme should be initiated once restoration and peat reinstatement works have been completed, and should include:

Topic	Embedded Mitigation	Additional Mitigation	Monitoring Measures
	proposed surfaces will comprise of compacted granular materials which are inherently permeable. ■ All surface water drainage systems that will incorporate the appropriate level of treatment with all SuDS (Sustainable Drainage Systems) and drainage features designed taking account of measures published by the appropriate body i.e. SEPA, CIRIA, etc. ■ Where possible, drain lengths that will be limited to reduce increased discharge rates associated with artificial drains. ■ Discharge of attenuated surface water runoff from the working areas and hardstanding into the watercourses that will be limited to greenfield runoff rates entering each watercourse from the site at present. **Sedimentation and Erosion** All runoff from site work areas during construction will be treated and attenuated using SuDS. Whilst constructing in areas close to sensitive receptors, and where high volumes of excavation are required, two levels of treatment will be incorporated to attenuate the site runoff and to reduce the risk of contaminants reaching the adjacent watercourses. Treated water will be discharged to the receiving watercourse of the original catchment. Watercourse catchments will not be altered. Any surface water that can enter a working area from upslope will be captured by a drainage ditch or similar and diverted around the working area to reduce washout of aggregate. Runoff from hardstanding areas will be treated and attenuated to levels relative to the area of use. Further treatment may be required from areas subject to high pollution risk i.e. fuelling areas. Constructing in areas of sloping land can lead to silt laden surface water runoff from the construction area. This runoff will be captured and directed within a temporary swale structure or similar, located downslope of the construction site boundary. Silt fences will be employed when working close to watercourse crossings where the use of swale features is not practical. A minimum buffer zone of at least 10m between the construction working areas and access tracks and watercourses has been incorporated into project design. Larger watercourses have a larger buffer zone. Other design mitigation measures to control the release of sediment and reduce the risk of soil erosion and mobilisation of contaminants during construction are as follows: ■ Access tracks will be prevented from discharging loose material to the local water environment. For example, drainage discharging from access tracks will be directed away from watercourses and towards a silt trap or SUDS pond. During times of dry weather, any ruts generated from tyre tracks will be smoothed. ■ Temporary tracks will be constructed with enough cross-falls to reduce sediment leaving the track. ■ Exposed soil slopes adjacent to watercourses will be minimised and seeded as soon as possible to reduce the risk of instability and sediment runoff to watercourses as well as minimising disturbance to riparian habitat. ■ SuDS, including temporary silt traps, settlement lagoons and storage lagoons, will be constructed at key locations (i.e. upstream of watercourses and at surface water discharge points) to intercept and contain sediment and to attenuate surface water runoff to greenfield rates. ■ The extent of exposed topsoil will be kept to a minimum, by phasing vegetation removal and earthworks so that soil exposure and areas of open excavation are minimised and can be managed appropriately. ■ Temporary silt fences will be installed to protect exposed topsoil from erosion and runoff. ■ During forestry felling, damage to soils will be minimised by the use of ‘brash mats’ consisting of branches and treetops with no commercial value. During felling and	■ Dewatering and physical cut-offs will be avoided where possible and drainage measures will be designed to minimise the effect on the lowering of the groundwater table. Permanent physical cut-offs will be avoided. ■ Any excavated peat will be stored appropriately nearby and re-used as soon as possible for reinstatement. Further ground investigation will be undertaken for the foundation and temporary track locations to determine the most suitable foundation and temporary track type so that the volumes of excavated peat can be reduced further. ■ Cognisance of Scottish Water services and pipework will be required during detailed design and prior to and during construction works. **Peat** ■ Additional mitigation of peat landslide risk will be achieved through excavation of the access track section (rather than floating) and tower working area, isolating the downslope area above the Polmeur Burn from drainage for the duration of construction. Drainage management will be designed to prevent water build up on the downslope side of the works, and regular monitoring of the slopes above and below this area will be undertaken throughout the construction period. ■ Appropriate peat excavation, storage and re-use/reinstatement. ■ Further ground investigation to review foundation and track options. ■ Appropriate construction methodologies, selection of peat/soil storage locations and drainage management.	■ Review of % vegetation cover and vegetation composition in areas of bare peat that have been reinstated or in any areas that have been seeded (due to a lack of available turved material). ■ Review of stability of deposits in their new locations. ■ Fixed point photography in order to aid review over a series of monitoring intervals. ■ Monitoring should be carried out at 3 months and 12 months after construction and reinstatement works have concluded.

Topic	Embedded Mitigation	Additional Mitigation	Monitoring Measures
	delimbing, the timber will be placed in a separate zone to the brash. A proportion of the brash will be formed into mats on the access and extraction routes upon which the harvesters and forwarders travel within harvesting areas. The use of brash increases considerably the ground bearing capacity of the soil. **Pollution and Accidental Spillage** The following mitigation measures will be implemented to reduce the chance of pollution from plant and machinery and the risk of a spillage occurring: ■ Concrete pouring and washout activities will be closely controlled and will not take place close to a watercourse. ■ Good construction practices will ensure that all harmful substances including fuel, oil, etc. would be safely stored on the working areas using the recommended storage facilities recommended in SEPA guidance and the relevant general binding rules (GBRs). ■ All machinery will be checked regularly to identify leakages, and during winter, de-icing of plant machinery kept to a minimum. ■ Spill kits, absorbent materials, and full training on their appropriate use will be available on the site to limit the potential impact of any accidental spillages. ■ Except for emergency repairs, all maintenance and repair for vehicles will be undertaken offsite. A Construction Site Licence (CSL) will be required from SEPA under the CAR Regulations in advance of the construction works which will include a detailed Pollution Prevention Plan (PPP) to ensure that any discharges of water run-off from the site to the water environment do not cause pollution. This will be prepared, and authorisation sought from SEPA, before construction commences. **Watercourse Crossings** During routeing and design iterations, the number of watercourse crossings of the OHL routes and access tracks was minimised as far as possible. Standard mitigation measures and good practice will be employed to avoid pollution, sedimentation and bank erosion on all affected watercourses, particularly at crossing locations. Engineering activities on minor watercourses (with the exception of culverting for land gain, dredging and permanent diversions/realignments) do not normally require authorisation under the CAR Regulations. SEPA defines minor watercourses as those **not** shown on the 1:50,000 scale Ordnance Survey maps) Under the CAR Regulations, the majority of the access track crossing are either minor or temporary over small watercourses. The type of temporary bridges proposed for new crossings are: ■ Narrow burns: a mat of timbers will be used, supported by steel beams; and ■ Larger watercourses: a steel plate decking including safety barriers either side will be used, supported by main support beams with steel cross members. These do not require registration or licence under CAR, however the works must comply with the conditions of the GBRs, as follows: **General Binding Rule Six (GBR6): Construction and maintenance of: a minor bridge (with no construction on the bed or banks) over a river, burn or ditch; or a temporary bridge over a river, burn or ditch that has a channel width of less than 5m:** ■ Vegetation may be removed from the banks only if the works cannot otherwise be reasonably carried out. ■ Vegetation that is removed must not be disposed of into the channel. ■ The works must not prevent the free passage of migratory fish.		

Topic	Embedded Mitigation	Additional Mitigation	Monitoring Measures
	■ The works must not result in the narrowing of the channel width or the heightening of any bank. ■ Work in the channel must not be carried out when fish are likely to be spawning in the affected surface water, or in the period between spawning and the subsequent emergence of juvenile fish. ■ If necessary, a temporary culvert extending no more than 10m along the length of the river, burn or ditch may be installed to facilitate the works and any such culvert must be removed on completion of the works. ■ All reasonable steps must be taken to ensure that the works do not result in increased erosion of the bed and banks. ■ As far as reasonably practicable, within 12 months of the work starting, the bed and banks of the river, burn or ditch must be reinstated at least to their condition before the works started. ■ As far as reasonably practicable, within 12 months of removal of a temporary bridge, the bed and banks must be reinstated at least to their condition before the works started. ■ The activity must not result in pollution of the water environment. **General Binding Rule Nine (GBR9): Operating any vehicle, plant or other equipment (machinery) in or near any surface water or wetland for the purpose of undertaking any other GBR activity.** ■ Machinery should only operate in water where it is impracticable for it to operate on dry land. ■ Refuelling must take place at least 10m away from any surface water. ■ Any static plant or equipment used within 10m of surface water must be positioned on a suitable drip tray with capacity for 110% of the fuel tank supplying the static plant or equipment. ■ Machinery used in or near surface water must not leak any oil. ■ Washing of any machinery must take place at least 10m away from any surface water and the washings must not be allowed to enter any surface water ■ Machinery must not be operated in rivers, burns and ditches when fish are likely to be spawning in the affected surface water, or in the period between spawning and the subsequent emergence of juvenile fish ■ Machinery must not be operated in rivers, burns and ditches if there is a reasonable likelihood that there are freshwater pearl mussels within 50m of such operation. ■ Machinery must not be operated in rivers, burns and ditches during forestry operations. ■ Following the operation of the machinery, any damage caused by the operation to the bed and banks of the surface water must be repaired, including re-establishing vegetation on any areas of bare earth on the banks resulting from the operation, either by covering the area with grass turfs or lining them with a biodegradable geotextile and seeding. All other watercourse crossing structures that are either not on minor watercourses or covered under GBR6 will either require registration or a simple licence under CAR. In general, SEPA recommends that bridging solutions or bottomless or arched culverts which do not affect the bed and banks of watercourses should be used. Fording will be avoided. **Peat Management** An Outline Peat Management Plan (PMP) is provided as **Appendix 7.3: Outline Peat Management Plan** of the EIA Report. This sets out a number of good practice measures in relation to the management of peat during construction, including in relation to peat excavation, temporary storage, and the reuse of peat. Overarching good practice measures include:		

Topic	Embedded Mitigation	Additional Mitigation	Monitoring Measures
	Excavation and handling ■ A minimum thickness of 300mm of acrotelmic peat or turved organic soil should be excavated where sufficient soil is present; where less than 300mm is present, the full depth of soil and surface vegetation should be excavated. ■ Excavation and transport of peat/soil shall be undertaken to avoid cross-contamination between soil horizons (e.g., organic soil and underlying mineral soil / substrate). ■ Where possible, cross-tracking of plant over undisturbed vegetation should be minimised, and excavated materials transported to their storage locations along constructed track. ■ If working is required away from constructed roads / tracks, the use of long reach excavators should be encouraged in order to minimise cross-tracking. ■ If landscaping of road / track margins is required for temporary works, it is preferable for vegetated organic soils to be used for this purpose rather than acrotelmic peat (which should be stored). ■ Wherever possible, double handling of peat should be minimised (in particular for catotelmic peat) by direct transport of materials to their point of storage. ***Storage*** ■ Eliminate storage where possibly by single handling from the point of excavation to a location of reuse. ■ If storage cannot be avoided, minimise storage time by taking a holistic approach to excavation and restoration such that catotelmic peat (in particular) is used as soon as possible after excavation. ■ Store excavated acrotelmic and catotelmic peat separately during excavation works, which will be undertaken by an experienced contractor specialising in peat groundworks and restoration. ■ Acrotelmic peat and turved soil blocks should be stored turf side up to prevent damage to vegetation. ■ Storing in areas of minimal gradient where 'runoff' or drainage away from the point of storage is minimised (these areas will also satisfy to avoid areas of lower stability) ■ Fewer, larger stores will be preferable to a greater number of small stores, since the total potential area of drying surface will be less. ■ Where storage is required in the medium term, preparing the peat to minimise the surface exposed to drying (e.g., through blading off of catotelmic peat and use of appropriate cover to minimise moisture loss). ■ The ECoW should work with an appointed Geotechnical Engineer (GE) to review the placement and condition of stored peat. ■ Storage areas should be outside any area identified in the PLHRA as of 'Medium' risk or greater (see Appendix 7.5) and should be more than 50m away from watercourses, away from sensitive habitats and away from the edge of excavations. ■ Peat and soil stores should be appropriately bunded to prevent risks from material instability and prevent runoff of sediment and water from the stockpiles ■ The condition of the excavated peat, in particular its moisture content, should be regularly monitored and local water utilised to periodically 'refresh' stored peat and prevent desiccation. ***Reinstatement and Restoration*** ■ Where possible, turves and underlying catotelmic peat should be reinstated at the locations from which they were removed. ■ Any bare peat exposed at the surface of a reinstated area should be seeded with a seed mix or translocated vegetation appropriate to the locality.		

Topic	Embedded Mitigation	Additional Mitigation	Monitoring Measures
	■ Where insufficient turves are available to full cover reinstated soils, a checkerboard pattern of turf blocks should be used, with turf squares no less than 1m2 to act as seed points interspersed amongst the bare areas. ■ Reinstated ground levels should tie in with the surrounds, and any bulking up should be avoided by tamping down soils and turves. ■ If appropriate, temporary fencing may be required to enable vegetation to establish following reinstatement works and prevent damage by livestock, deer or rabbits. **Peat Slide Risk** ***Good Practice Prior to Construction*** Site safety is critical during construction, and it is strongly recommended that detailed intrusive site investigation and laboratory analysis are undertaken ahead of the construction period to characterise the strength of the peat soils in the areas in which excavations are proposed, particularly where these fall in areas of LOW or greater risk. These investigations should be sufficient to: 1. Determine the strength of free-standing bare peat excavations, particularly in tower working areas and along track excavations in areas of Moderate landslide likelihood. 2. Determine the strength of loaded peat (where excavators and plant are required to operate on floating track, or where operating directly on the bog surface). 3. Identify sub-surface water-filled voids or natural pipes delivering water to the excavation zone, e.g., through the use of ground penetrating radar or careful pre-excavation site observations. A comprehensive Geotechnical Risk Register should be prepared post-consent but pre-construction detailing sequence of working for excavations, measures to minimise peat slippage, design of retaining structures for the duration of open hole works, monitoring requirements in and around the excavation and remedial measures in the event of unanticipated ground movement. The risk register should be considered a live document and updated with site experience as infrastructure is constructed. Ideally, a contractor with experience of working in deep peat should be engaged to undertake the works. ***Good Practice During Construction*** The following good practice will be undertaken during construction: For excavations: ■ Use of appropriate supporting structures around peat excavations (e.g., for towers, working areas and compounds) to prevent collapse and the development of tension cracks. ■ Avoid cutting trenches or aligning excavations across slopes (which may act as incipient back scars for peat failures) unless appropriate mitigation has been put in place. ■ Implement methods of working that minimise the cutting of the toes of slope, e.g., working up-to-downslope during excavation works. ■ Monitor the ground upslope of excavation works for creep, heave, displacement, tension cracks, subsidence or changes in surface water content. ■ Monitor cut faces for changes in water discharge, particularly at the peat-substrate contact. ■ Minimise the effects of construction on natural drainage by ensuring that natural drainage pathways are maintained or diverted such that alteration of the hydrological regime of the site is minimised or avoided; drainage plans should avoid creating drainage/infiltration areas or settlement ponds towards the tops of slopes (where they may act to both load the slope and elevate pore pressures) – specific measures for water management should be defined around Tower 28 (see section 5.4 above). For cut tracks:		

Topic	Embedded Mitigation	Additional Mitigation	Monitoring Measures
	■ Maintain drainage pathways through tracks to avoid ponding of water upslope. ■ Monitor the top line of excavated peat deposits for deformation post-excavation. ■ Monitor the effectiveness of cross-track drainage to ensure water remains free-flowing and that no blockages have occurred. For floating tracks: ■ Allow peat to undergo primary consolidation by adopting rates of road construction appropriate to weather conditions. ■ Identify 'stop' rules, i.e., weather dependent criteria for cessation of track construction based on local meteorological data. ■ Run vehicles at 50% load capacity until the tracks have entered the second compression phase. ■ Prior to construction, setting out the centreline of the proposed track to identify any ground instability concerns or particularly wet zones. For storage of peat and for restoration activities: ■ Ensure stored peat is not located upslope of working areas or adjacent to drains or watercourses. ■ Undertake site specific stability analysis for all areas of peat storage (if on sloping ground) to ensure the likelihood of destabilisation of underlying peat is minimised. ■ Avoid storing peat on slope gradients >3° and preferably store on ground with neutral slopes and natural downslope barriers to peat movement. ■ Monitor effects of wetting / re-wetting stored peat on surrounding peat areas, and prevent water build up on the upslope side of peat mounds. ■ Undertake regular monitoring of emplaced peat in restoration areas to identify evidence of creep or pressure on retaining structures (dams and berms). ■ Maximise the interval between material deliveries over newly constructed tracks that are still observed to be within the primary consolidation phase. In addition to these control measures, the following good practice should be followed: ■ The geotechnical risk register prepared prior to construction should be updated with site experience as infrastructure is constructed. ■ Full site walkovers should be undertaken at scheduled intervals to be agreed with the Local Authority to identify any unusual or unexpected changes to ground conditions (which may be associated with construction, or which may occur independently of construction). ■ All construction activities and operational decisions that involve disturbance to peat deposits should be overseen by an appropriately qualified geotechnical engineer with experience of construction on peat sites. ■ Awareness of peat instability and pre-failure indicators should be incorporated in site induction and training to enable all site personnel to recognise ground disturbances and features indicative of incipient instability. ■ A weather policy should be agreed and implemented during works, e.g. identifying 'stop' rules (i.e. weather dependent criteria) for cessation of track construction or trafficking. ■ Monitoring checklists should be prepared with respect to peat instability addressing all construction activities proposed for site. ■ It is considered that taken together, these mitigation measures should be sufficient to reduce risks to construction personnel to Negligible by reducing consequences to minor injury or programme delay (i.e., Moderate consequences) with a Very Low likelihood of occurrence. ***Good Practice Post-Construction***		

Topic	Embedded Mitigation	Additional Mitigation	Monitoring Measures
	Following cessation of construction activities and reinstatement of temporary access tracks, working areas and other ancillary infrastructure, monitoring should be undertaken at the following locations at 3 months post-construction and 12 months post-construction: ■ The reinstated 130m floated section between Tower 40 and Tower 39. ■ The reinstated 250m floated section between Tower 11 and Tower 10. ■ The reinstated 400m floated section between Tower 9 and Tower 7. ■ The area of emplaced peat to the immediate north of the Glenmuckloch Substation. ■ The reinstated working area and track to the west of Tower 28. Monitoring should be focused on identification of: ■ Changes in the character of peat drainage within a 50m buffer strip of tracks and infrastructure (e.g., upwelling within the peat surface upslope of restored tracks, sudden changes in drainage behaviour downslope). ■ Slippage or creep of relocated peat deposits from within the former track locations. ■ Development of tension cracks, compression features, bulging or quaking bog anywhere in a 50m corridor surrounding the site of any former construction activities or site works. In the event that unanticipated ground conditions arise following construction, remedial works should be specified.		
Ecology (Chapter 8)	The ecology assessment has been undertaken on the basis of the following embedded mitigation measures being in place: ■ The development and application of a CEMP, which will set out (amongst others) guidance on compliance with nature conservation legislation and policy; ■ Production of and compliance with a Pollution Prevention Plan (PPP) and adherence to Guidelines on Pollution Prevention (GPPs), which will significantly reduce the likelihood and severity of pollution events; ■ Production of and compliance with Construction Method Statements (CMS); ■ Production of and compliance with a Water Protection Plan (WPP), and a construction site licence (CSL) being obtained from SEPA and thereafter complied with. This will include the application of appropriate buffers around watercourses, which will protect riparian habitat while reducing disturbance and the likelihood of pollution events; ■ Production of and compliance with a PMP to set out a number of good practice measures in relation to minimising disturbance and the management of peat during construction. ■ The use of temporary access roads and 'brash mats' to reduce potential for soil erosion; ■ Pre-construction surveys to be completed to confirm the status of protected species prior to works commencing; and ■ The appointment of an Advisory ECoW to advise, monitor and report on compliance with relevant legislation, policy and project specific mitigation during construction.	No additional mitigation measures are proposed during the construction and operation of the GGRP.	■ Monitoring requirements are limited to pre-construction surveys. These will form part of the ECoW role, which will be appointed and developed post-consent and in consultation with relevant stakeholders
Ornithology (Chapter 9)	■ Surveys within a 500m buffer to locate nests of birds listed in Schedule 1 of the WCA and Annex 1 of the Birds Directive would be undertaken prior to forestry and construction operations during the breeding period as part of a Birds Protection Plan (BPP) which would be overseen by an ECoW. If it is judged that these activities are likely to disturb breeding attempts, then appropriate exclusion zones or other mitigation procedures would be agreed with NatureScot prior to recommencing works. ■ The BPP would describe the surveys to locate the nests or other key sites (e.g., roosts) of birds listed in Schedules 1 and 1A of the WCA, in advance of construction works progressing. In the event that an active nest or roost of a Schedule 1 or Schedule 1A species is discovered (within distances given by Ruddock & Whitfield (2007)[21]) (or within a 500m radius of the nest for Schedule 1 species not listed), a disturbance risk assessment would be prepared under the BPP. Any measures considered necessary to	■ It is proposed that line marking along the length of OHL extending either side of the known black grouse lek site would be undertaken. Line marking is proposed, between towers 11 to 16, extending either side of the known black grouse lek site for the duration of the operational period of the GGRP. Markers would be spaced at 5m intervals and maintained for the duration of the operational period.	■ The implementation and compliance with BPP would be overseen by the ECoW.

Topic	Embedded Mitigation	Additional Mitigation	Monitoring Measures
	safeguard the breeding attempt or roost (e.g., exclusion zones or restrictions on timing of works) would be submitted to NatureScot for agreement, and thereafter implemented, before recommencing work. Similarly, although the species is not listed on Schedule 1, surveys to locate black grouse lek sites would be undertaken and appropriate measures to safeguard relevant lek sites would be agreed with NatureScot and included within the BPP. ■ Standard forestry guidance would be followed in the case of tree felling operations.		
Cultural Heritage **(Chapter 10)**	■ Avoidance of physical effects will be implemented where possible. ■ Good practice measures to prevent, reduce, and/or where possible offset potential physical effects to unknown archaeological remains will be included in the CEMP. Measures which may be adopted include: – Exclusion of known assets from micro-siting areas. – The fencing off or marking out of sites or features of cultural heritage importance in proximity to working areas. – Implementation of a working protocol should unrecorded archaeological features be discovered. – The use of toolbox talks/a CEMP to highlight the cultural heritage sensitivities of the Site to those working on the GGRP.	**Deil's Dyke** ■ Suitable matting (cordoned either side) and low-pressure vehicles will be used to facilitate the access to Tower 28 across this asset. This will prevent any damage to the surviving earthworks and buried remains arising as a consequence of erosion/disturbance or compaction. Micrositing of the access to Tower 28 where it crosses the dyke will not be undertaken and the asset will be cordoned off from these areas. ■ Micrositing of the working area associated with Tower 28 to the north or east will also not be undertaken. Where the dyke passes close to the working area for Tower 28, the standard practice of cordoning off the working area will ensure that no accidental damage arises to it. ■ To prevent any physical harm to the asset, micrositing of the access will not be undertaken to the south of Tower 29.	■ No monitoring is required. However, it is anticipated that appropriate archaeological monitoring will be secured by condition on an eventual consent. ■ The Applicant anticipates the provision of monitoring and supervision through the provision of an Archaeological Clerk of Works (ACoW). The ACoW would be on site to supervise the installation of protection measures for cultural heritage assets within the construction corridor, particularly those excluded from the ILA, and the protective matting for the crossing of the Deil's Dyke. They will also supervise ground-breaking works in areas of elevated archaeological potential and be available on a call-off basis to advise on any issues during construction, and confirm the acceptability of any repositioning of infrastructure.
Traffic and Transport **(Chapter 11)**	■ The temporary effects of felling and construction (whether assessed as significant or otherwise) will be mitigated through adoption of a regulated and approved CTMP**.** ■ SPEN will agree temporary traffic management measures, then adopt and monitor an appropriate way of working in consultation with D&GC Roads Department, Transport Scotland and/or their Agent and the Police as appropriate ■ Felling and construction activity generated vehicles (with the exception of site personnel in cars and vans) will travel on predefined routes to and from the relevant sites to reduce effects on existing local traffic. ■ Timing and frequency of vehicle movements will be managed to ensure, where practical, that vehicle movements are spaced adequately to reduce disruption and coincide (if/where applicable) with existing/current local forestry operations. ■ The framework CTMP will be further developed as necessary in consultation with Road Authorities and the Police prior to construction commencing, outlining measures to promote the efficient transportation of components and materials to site, whilst reducing congestion and disruption which might impact negatively on local communities or general traffic and in particular the emergency services. The CTMP should be considered a 'live' document that includes: – A programme of delivery types/numbers by month; – A statement of which public roads are to be used by felling and construction traffic; – A statement of which public roads are not to be used by felling and construction traffic; – A statement of which local towns and villages are to be avoided (completely or on stated days and times); – Details of all proposed mitigation measures, list of contacts, and details of measures that will be implemented to limit the potential of vehicle stacking on any part of the public road network; – If appropriate, details of speed restrictions through sensitive areas and procedures to ensure pedestrian safety adjacent to worksites; and – Details of temporary signage to be installed at defined locations.	■ The CTMP provides preliminary details of proposed traffic management measures and associated interventions to be implemented during the construction phase of the GGRP to minimise disruption and improve safety. The CTMP will be enhanced and expanded upon as appropriate by SPEN's appointed contractor(s) in consultation with Roads Authorities and the Police prior to commencement of construction activities and as necessary during the construction phase; the CTMP is considered a 'live' document	■ The requirement for construction monitoring will be agreed with SPEN, Roads Authority representatives and other relevant stakeholders prior to commencement of works. ■ If deemed necessary, SPEN will enter into a legal agreement under Section 96 of the Roads (Scotland) Act 1984 to formalise an inspection and maintenance regime with the Roads Authority to contribute to maintenance of those roads impacted by HGV movements associated with the GGRP.

Topic	Embedded Mitigation	Additional Mitigation	Monitoring Measures
	■ As far as reasonably practicable, deliveries will be scheduled out with school opening and closing times. ■ In partnership with SPEN, the appointed contractors will be required to maintain close liaison with local community representatives, landowners and statutory consultees throughout the construction phase. This is likely to include circulation of information about ongoing activities; particularly those that could potentially cause disturbance, including those due to traffic. A telephone number will be provided and persons with appropriate authority to respond to calls and resolve or escalate any problems arising will be available. ■ If another development, such as the wind farms considered in the cumulative assessment appears likely to undergo construction at the same time as the GGRP SPEN will liaise with the other developer regarding the scheduling of deliveries and potential means of reducing the impact of combined construction.		