

APPENDIX 1.1 – UNDERGROUND CABLE WORKS IMPACT ASSESSMENT

1.1 Introduction

1.1.1 As noted within **Chapter 1: Introduction**, several components of the Proposed Development fall under SSEN Transmission's permitted development rights as a statutory undertaker. These include:

- All underground cable (UGC) works; and
- Temporary construction compound.

1.1.2 Impact assessments associated with these elements are set out within this Appendix, which is structured in accordance with the main Environmental Appraisal (EA) technical chapters:

- Chapter 4: Landscape and Visual;
- Chapter 5: Ecology;
- Chapter 6: Ornithology;
- Chapter 7: Soils and Hydrology;
- Chapter 8: Cultural Heritage; and
- Chapter 9: Forestry.

1.1.3 Each of the technical chapters of the EA establishes the baseline information, assessment methodology and study area associated with each impact assessment, with the chapters addressing the effects of the elements of the Proposed Development which are subject to consent under Section 37 of the Electricity Act 1989 (wood poles and cable sealing end (CSE)). The chapters, and their supporting figures and appendices, should be referred to as part of this Appendix; each Section below identifies the relevant EA Chapter to refer to. Although the temporary access tracks required to enable construction of the UGC would require consent under Town and Country Planning (Scotland) Act 1997, they are considered within this appendix as part of the UGC enabling works.

1.2 Landscape and Visual Impact

1.2.1 Please refer to **Chapter 4: Landscape and Visual**.

1.2.2 This appendix reports the findings of a Landscape and Visual Impact Assessment (LVIA) for the UGC and their construction, and is accompanied by detailed assessments in **Annex 1.1A: UGC Landscape Assessment Tables** and **Annex 1.1B: UGC Visual Assessment Tables**. The assessment is limited to the assessment of effects during the construction period, since it is anticipated that cable trenches and temporary access tracks would be reinstated upon completion. As the specific location and form of any junction boxes (above or below ground) is not currently known these are not addressed within this assessment. However, mitigation measures are suggested to limit any potential longer term effects.

Landscape Assessment

1.2.3 **Annex 1.1A: Landscape Assessment Tables** sets out the landscape effects likely to arise as a result of installation of the UGCs. **Figure 4.2** (of **Chapter 4: Landscape and Visual**) identifies landscape areas in relation to the UGCs.

1.2.4 One additional LCT is included in this assessment for the UGCs than is assessed in **Chapter 4: Landscape and Visual**. This is because the UGC works will extend into LCT 225 Broad Steep-Sided Glen near Fort Augustus substation. The assessment therefore assesses effects on four LCTs within the study area:

- LCT 220 – Rugged Massif – Inverness;

- LCT 222 – Rocky Moorland Plateau – Inverness;
- LCT 225 – Broad Steep-Sided Glen; and
- LCT 226 – Wooded Glen - Inverness.

1.2.5 **Table 1** summarises the assessment of landscape impacts likely to result from the UGCs during construction.

Table 1: Summary of Landscape Assessment for the UGCs.

	Potential Effect During Construction						
	Not Significant			Significant			
	Negligible	Negligible – Minor	Minor	Minor – Moderate	Moderate	Moderate – Major	Major
LCT 220 – Rugged Massif – Inverness	•						
LCT 222 – Rocky Moorland Plateau – Inverness	•						
LCT 225 – Broad Steep-Sided Glen	•	L					
LCT 226 – Wooded Glen - Inverness	•						

1.2.6 The assessment found that there would be no significant landscape effects as a result of the UGCs. For LCTs 220, 222 and 226 effects would be **Negligible** (not significant), where there would be no discernible change in landscape characteristics, since localised construction activity would occur in such a small part of the LCT or would be experienced alongside existing Bhlariadh Wind Farm and proposed Extension. For LCT 225, effects would be marginally higher, but still localised and non-significant, since construction would be perceptible in the local area across a hillslope, experienced near Fort Augustus substation and alongside existing OHLs. Construction effects for this LCT would represent an intensification of activity and would be **locally Negligible-Minor** (not significant) and **elsewhere Negligible** (not significant).

Visual Assessment

1.2.7 **Annex 1.1B: UGC Visual Assessment Tables** sets out the visual effects likely to arise as a result of the installation of the UGCs. **Figure 4.2** (of **Chapter 4: Landscape and Visual**) identifies visual receptor locations in relation to the UGCs.

1.2.8 The receptor locations included in this assessment for the UGCs differ slightly from those areas assessed in **Chapter 4: Landscape and Visual** for the OHL since it is anticipated that UGC would affect slightly different areas and therefore different receptors. Nine receptor locations (B1 – B4, R1 – R4 and R6) have been scoped out of this assessment due to lack of potential for significant effects, and three receptor locations (B5, R7, R8), that were not assessed for the OHL in **Chapter 4: Landscape and Visual** have been added. The assessment therefore assesses effects on four receptor locations within the study area:

- B5 – Auchterawe;
- R5 – Core Path IN16.16 and Scottish Hill Tracks 260a and 260b;
- R7 – Core Path IN16.02 and 16.14; and
- R8 – Minor road through Auchterawe.

1.2.9 **Table 2** summarises the assessment of visual effects likely to result from the UGCs during construction.

Table 2: Summary of Visual Assessment for the UGCs.

	Potential Effect During Construction					
	Not Significant				Significant	
	Negligible	Negligible – Minor	Minor	Minor – Moderate	Moderate	Major
B5 – Auchterawe	•					
R5 – Core Path IN16.16 and Scottish Hill Tracks 260a and 260b			•			
R7 – Core Path IN16.02 and 16.14			•			
R8 – Minor road through Auchterawe		•				

1.2.10 The assessment finds that there would be no significant visual effects as a result of the UGCs. For receptors on routes R5 and R7 (both recreational routes in Inchnacardoch Forest), effects would be **Minor** (not significant), where construction activity would be perceptible nearby, crossing the route, and experienced as traffic along sections, but generally experienced in the context of existing OHLs and forestry operations. For receptors on route R8 (Minor road through Auchterawe), effects would be **Negligible-Minor** (not significant), since construction would be perceptible nearby the road, but roadside earthworks and planting would screen / filter some views, and construction would be seen in combination with existing OHLs and Fort Augustus substation. Construction activity may also be similar to ongoing activity at the substation. For receptors in location B5 (Auchterawe), it is anticipated that effects would be **Negligible (not significant)** as UGC construction would be screened or imperceptible in the context of the substation and existing OHLs. Special measures are identified to minimise any longer term effects of jointing bays or junction boxes through underground cable parts of the Proposed Development

Mitigation

1.2.11 In addition to best practice for reinstatement of UGC works, it will be particularly important to reinstate any areas of planting and earthworks in the vicinity of Fort Augustus Substation as soon as possible, including existing and proposed landscaping. For example, planting along the minor road plays a role in screening the substation, so disturbance to this existing screen should be avoided where possible or minimised by narrowing the construction corridor as much as possible. Where removal is unavoidable due to construction works, planting would be reinstated / replanted as early as is practicable.

1.2.12 For operational purposes, the UGCs would require jointing positions at regular intervals along the cable alignment, comprising groups of four sub-surface chambers, which would be protected by stock proof fence, or above ground junction boxes where a high or medium risk of flooding in underground chambers is possible. In order to minimise the potential landscape and visual effects of junction boxes and underground jointing bays, the following mitigation measures would be adopted where possible:

- Colouring of junction boxes would be carefully considered. A dark brown colour is recommended for boxes within a moorland or forest backdrop when seen from the road or paths;
- Soil and turves would be carefully replaced around chamber covers or junction boxes and surface areas of concrete would be avoided as far as possible, to reduce the visual footprint of these areas; and
- Consideration would be given to the detailing around each group of junction boxes to reduce their visual prominence. This may include strategic landform and placement of turves or boulders as

appropriate to disguise where possible, the foot of boxes or platform areas for underground chamber covers.

1.3 Terrestrial Ecology

1.3.1 Please refer to **Chapter 5: Terrestrial Ecology**.

Ecological Study Area

1.3.2 The Study Area for assessment of UGC works incorporates land within the Ecological Study Area (ESA) (within 250 m of the Proposed Development). The assessment of effects has been undertaken according to the current guidance detailed by the CIEEM.

1.3.3 Fieldwork was carried out in July 2022 within accessible areas of the ESA. Both fieldwork and assessment methodology are described in detail in Section 5.4 of **Chapter 5: Ecology** and **Appendix 5.1**. Baseline conditions are also described **Chapter 5: Ecology**.

Potential Effects

1.3.4 The potential effects which may arise from the UGC aspects of the Proposed Development relate to the construction phase. There are no anticipated effects from the operational phase. Construction procedures would accommodate a number of measures designed to minimise impacts on terrestrial ecology receptors, including the development of a Construction Environmental Management Plan (CEMP) detailing measures to protect habitats and species and pollution prevention.

Designated Sites

1.3.5 Given the localised nature of the Proposed Development and the lack of connectivity with designated sites in the surrounding area, potential effects are likely to be negligible.

Habitats

1.3.6 Ecological receptors identified within the ESA as set out in Chapter 5 (land within 250 m of the Proposed Development) which could be affected by UGC works include Annex 1 habitats:

- European dry heaths (Low sensitivity);
- Northern Atlantic wet heaths with *Erica tetralix* (Medium sensitivity); and
- Blanket bogs (Medium sensitivity).

1.3.7 Ecological receptors identified within the ESA which could be affected by UGC works also include communities with dependency on groundwater (GWDTE), which are all considered to be of Low sensitivity:

- M6 – *Carex echinata* – *Sphagnum recurvum* mire (High groundwater dependence);
- M15 – *Trichophorum germanicum*- *Erica tetralix* wet heath (Low-Moderate groundwater dependence); and
- M25 – *Molinia caerulea* – *Potentilla erecta* mire (Moderate groundwater dependence).

1.3.8 As detailed in **Chapter 3: The Proposed Development**, the UGCs would be laid through a combination of open cut trenches.

1.3.9 132 kV UGC would be open cut along its length between the new cable sealing end (CSE) structures. Disturbance of habitats would be limited to areas where open cut trenches are to be used. At entry and end points for where UGCs are installed via open cut methods there would be temporary disturbance to the habitats immediately surrounding these points due to vehicle access to allow for machinery to perform excavation.

- 1.3.10 The open trench sections of the UGCs would be installed through habitats of Medium and Low sensitivity.
- 1.3.11 Potential impacts to wet heath and blanket bog habitats include temporary habitat loss and fragmentation during the construction phase, changes to habitat type resulting from disturbance of soils and alterations to the hydrology of the area and pollution or chemical damage to vegetation relating to the use of hazardous materials or exposure of sediment during construction to install the underground cables.
- 1.3.12 A habitat of Medium sensitivity is located within the within the ESA which could be affected by UGC works (blanket bog), all other habitats are those of Low sensitivity. Acid flush habitats of high groundwater dependency were identified. No permanent habitat loss would occur in habitats of High sensitivity. There is potential for vehicle and machinery access to have an impact on blanket bog and wet heath habitat (in the absence of any mitigation). The impact would be of a Low (temporary) magnitude. Measures specific to protecting this habitat are discussed further in paragraph 1.3.20 below.

Protected Species

- 1.3.13 There is potential for impact on badger, otter and pine marten that may commute through the ESA which could be affected by UGC works during construction works. Potential impacts to protected species could include disturbance to identified shelters, individual animals foraging or resting in proximity to construction activity (noise, lighting, vehicle movements) and mortality or injury to individual animals. Due to the lack of presence of protected species shelters within the ESA which could be affected by UGC works, it is not likely that these would have a significant effect on protected species.

Mitigation

- 1.3.14 The following good practice management measures are proposed in order to minimise potential impacts on ecological features across the site and ensure legal compliance during the construction phase:
- 1.3.15 Mitigation measures detailed in **Chapter 5: Ecology**, Section 5.9, would be applied to the UGC works. These measures include implementation of SSEN Transmission's General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs) for construction works that may negatively impact upon habitats and protected species, included in **Appendix 3.1 and Appendix 3.2**. A CEMP would be developed by the successful Contractor detailing measures to manage, control and monitor the potential effects of noise, dust, litter, pollution and personnel / vehicular movements.
- 1.3.16 During construction activities, surface water flows would be captured through a series of cut-off drains to prevent water entering excavations. If dewatering of the cable trench is required, pumped discharges would be passed through silt / sediment control measures.
- 1.3.17 Where excavation is required for open trench works, excavated materials would be stored adjacent to the cut trench according to best practice. Habitats with low to moderate groundwater dependency are common in nature within the ESA (e.g. M15 wet heath). The extent of excavation within these areas would be minimised. Prompt reinstatement would form part of the contractual obligations for the Principal Contractor.
- 1.3.18 An Environmental Clerk of Works (ECoW) would be appointed, specifically to provide monitoring of construction activities relating to the installation of infrastructure. The ECoW would also identify and monitor sensitive receptors immediately prior to, during and immediately after the construction phase. The ECoW would have the authority to 'stop the job / activity' if a breach or potential breach of mitigation or legislation occurs.
- 1.3.19 Mitigation measures specific to protected species are detailed in **Chapter 5: Ecology**, and would be applied to the UGC works. In addition, ramps or gently sloping faces would be employed within cable trenches to allow safe access / egress for any mammal species that may become trapped during the construction works.

1.3.20 Measures specific to works within blanket bog and wet heath habitats:

- A single access route along the UGC route would be identified and used for access. All other access traversing semi-natural habitat would be restricted to avoid unnecessary disturbance to the habitat. The ECoW would be involved in identifying this route with the Principal Contractor to find the most preferable route;
- Temporary Trackway would be installed along this access route through these habitat to minimise erosion;
- Cables would not be dragged through wet heath and blanket bog habitat to avoid erosion; and
- No fuel or chemicals would be stored within 50 m of the blanket bog habitat.

1.4 Ornithology

1.4.1 Please refer to **Chapter 6: Ornithology** for details on fieldwork and assessment methodology and baseline conditions.

Potential Effects

1.4.2 The potential effects which may arise from the UGC works of the Proposed Development relate to the construction phase. There are no anticipated effects from the operational phase. Construction procedures would accommodate a number of measures designed to minimise impacts on ornithology receptors, including the development of a CEMP detailing measures to protect habitats and species and pollution prevention.

Designated Sites

1.4.3 Given the localised nature of the Proposed Development and the lack of connectivity with designated sites in the surrounding area, potential effects are likely to be negligible.

Species

1.4.4 As detailed in **Chapter 3: The Proposed Development**, the UGCs would be laid through open cut trenches. Temporary disturbance would be limited to the where cables will be installed in trenches.

1.4.5 Potential impacts on ornithological interests from the UGC works could include:

- damage to bird nests on or in the vicinity of the works; and
- disturbance to the nests or young of species listed on Schedule 1 of the Wildlife and Countryside Act in the vicinity of the works.

1.4.6 Black grouse is a Red-Listed species on the BoCC. Inverness-shire holds a regionally important population. The species is sensitive to disturbance at lekking sites, consequently, lekking sites close to areas where construction is planned are vulnerable to disturbance. Disturbance distances where birds take to flight are estimated between 300 – 500 m for lekking males.

1.4.7 One black grouse lek location was identified in proximity to the UGC aspects of the Proposed Development. A total of 8 displaying males were counted on a lek site located 680 m south of the Proposed Development. The lek located on Levishie Forest is located near (<100m) an existing access track which will be utilised during construction as an access route for the Proposed Development. Disturbance to displaying males may result in reduced breeding success for black grouse. Best practice guidance indicates that disturbance within a zone of 500-750m of a lek site should be avoided. The effects would be temporary and reversible. Due to the potential for affecting more than 1 % of the regional population, the risk of unmitigated displacement due to disturbance during the construction phase is predicted to be of moderate magnitude and **not significant** for this species.

- 1.4.8 No Schedule 1 or Annex I species were identified as breeding within vicinity of the Proposed Development during the course of breeding bird surveys undertaken in 2021. There is the possibility that nests of protected Schedule 1 or Annex 1 species could be impacted during the construction phase. This would be through disturbance rather than by damage / destruction, however this could result in nest desertion, and the loss of the nest in the year of the works. All Schedule 1 and Annex I species are receptors of High value, as such any disturbance to these receptors during the construction phase would result in a potentially significant effect. The employment of an ECoW and the development of SPPs for breeding birds, as detailed in **Chapter 6: Ornithology**, would avoid any potentially significant effects on Schedule 1 or Annex 1 breeding birds.

Mitigation

- 1.4.9 The following good practice management measures are proposed in order to minimise potential impacts on ornithological features across the site and ensure legal compliance during the construction phase.
- 1.4.10 Mitigation measures are detailed in **Chapter 6: Ornithology** and would be applied to the UGC works. These measures include implementation of SSEN Transmission's GEMPs and SPPs for construction works that may negatively impact upon habitats and protected species. A CEMP would be developed by the Principal Contractor detailing measures to manage, control and monitor the potential effects of noise, dust, litter, pollution and personnel / vehicular movements.
- 1.4.11 An ECoW would be appointed, specifically to provide monitoring of construction activities relating to the installation of infrastructure. The ECoW would also identify and monitor sensitive receptors immediately prior to, during and immediately after the construction phase. The ECoW would have the authority to 'stop the job / activity' if a breach or potential breach of mitigation or legislation occurs.

1.5 Soils and Hydrology

- 1.5.1 Please refer to **Chapter 7: Soils and Hydrology**.

Baseline Conditions

- 1.5.2 The existing soils, geology and hydrology (hydrology and hydrogeology) have been characterised as part of the EA. The Study Area considered in the EA included all elements of UGC works.
- 1.5.3 In summary, the EA has confirmed that there are three designated sites with the study area: River Moriston Special Area of Conservation (SAC), Levishie Wood Site of Special Scientific Interest (SSSI), and Fort Augustus Geological Conservation Review (GCR) site.
- 1.5.4 The extent of the River Moriston SAC is limited to the River Moriston corridor and has been designated for Atlantic salmon and freshwater pearl mussel. The UGC works are located within the River Moriston surface water catchment and therefore in hydraulic continuity with the SAC.
- 1.5.5 Levishie Wood SSSI is located within the north eastern extent of the study area and has been designated for upland birch woodland habitats. The SSSI is not located downstream of the UGC works and not in the same water catchment. No elements of Fort Augustus GCR are intercepted by the UGC works.
- 1.5.6 The soils locally comprise peat, alluvium and glacial deposits. Only discrete parts of the Proposed Development are underlain by priority peatland. A comprehensive programme of peat probing has been completed and the results of which have been used to prepare a peat landslide hazard risk assessment (PLHRA) and peat management plan (PMP).
- 1.5.7 The majority of the Proposed Development is underlain by psammite, a metamorphic rock, of the Tarvie Psammite Formation. With the exception of peat the superficial and solid geology is common regionally. The

geology does not form an important groundwater aquifer, which is witnessed by the absence of many groundwater abstractions.

1.5.8 The UGC passes over a number of surface water catchment, many of which drain to the River Moriston SAC. The UGC also drains to the River Ness Drinking Water Protected Area. It has been confirmed that many properties locally maintain private water supplies.

1.5.9 Areas of potential flood risk are typically restricted to watercourse corridors and do not extend far from watercourse channels.

Application of Best Practice

1.5.10 SSEN Transmission has established best practice construction techniques and procedures that have been agreed with statutory consultees, including SEPA and NatureScot. These are set out within SSEN Transmission's General Environmental Management Plans (GEMP) (see **Appendix 3.1**). Elements of the UGC would be constructed in accordance with these plans.

1.5.11 In addition, the works would be undertaken in accordance with good practice guidance, including UK and Scottish guidance within the following documents:

- Control of Water Pollution from Construction Sites – Guide to Good Practice, CIRIA 2002;
- Environmental Good Practice on Site C741, CIRIA 2015;
- Engineering in the Water Environment: Good Practice Guide – Sediment Management, SEPA, June 2010; and
- The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) – A Practical Guide (Version 8.3), SEPA, February 2019.

1.5.12 The Pollution Prevention Guidelines (PPGs) (and replacement Guidance for Pollution Prevention (GPPs)) identified below are the principal guidance documents for preventing water pollution and erosion from construction activities and are jointly produced by SEPA, the Environment Agency and the Environment and Heritage Service in Northern Ireland. The guidelines are available via NetReg's website¹ and would also be used and applied during the permitted works:

- GPP01 Understanding your environmental responsibilities – good environmental practices;
- GPP02 Above Ground Oil Storage Tanks;
- PPG03 Use and Design of Oil Separators in Surface Water Drainage Systems;
- GPP05 Works and maintenance in or near water;
- PPG06 Working at Construction and Demolition Sites;
- GPP08 Safe Storage and Disposal of used oils;
- GPP13 Vehicle Washing and Cleansing;
- PPG18 Managing fire water and major spillages;
- GPP21 Pollution Incident Response Planning; and
- GPP22 Dealing with Spills.

1.5.13 It is recognised the integrity and value of peat needs to be safeguarded. The principles detailed in Chapter 7: Hydrology, Hydrogeology, Geology and Soils, including the methods which will be used to safeguard peat and soils, would therefore be adhered to ensure the value of peat deposits at site are not impaired.

¹ NetRegs, (2018). *Environmental Topics*. [online] Available at: <http://www.netregs.org.uk/environmental-topics/> [Accessed July 2022].

- 1.5.14 The best practice guidance would ensure that the UGC works would not alter surface water flow paths, increase the rate or volume of surface water runoff, or impair water quality. This would also safeguard private water supplies and the supply of water to these and to the Loch Ness Drinking Water Protected Area. Notwithstanding this, a private water supply risk assessment is proposed and would be used to monitor private water supply sources and the quality of water in principal watercourses, that are potentially at risk from the UGC works without the adherence of best practice.

1.6 Cultural Heritage

- 1.6.1 Please refer to **Chapter 8: Cultural Heritage**.

Direct Impacts

- 1.6.2 Direct (physical) effects on cultural heritage assets are most likely to arise from ground-disturbing activities that occur during development construction works, which may damage, and possibly destroy, cultural heritage remains. Direct effects may also occur by above-ground disturbance, for example as a result of vehicle movement over cultural heritage features, or storage of construction materials upon them. Direct effects on cultural heritage assets are normally adverse, permanent, and irreversible.
- 1.6.3 Installation of the 132 kV UGC, would have no direct effect on any recorded cultural heritage assets.
- 1.6.4 Any ground-breaking activities associated with the UGC works have the potential to disturb or destroy any buried, hitherto unrecorded archaeological remains present within affected areas. It has been established that there is a low probability of buried remains, particularly given the extent of archaeological survey undertaken in the area to date.

Mitigation

- 1.6.5 It is considered that there is a low potential for preservation of buried remains of archaeological interest, particularly prehistoric remains, within previously undisturbed areas within UGC works. Any requirements for archaeological investigations or watching briefs within previously undisturbed ground along the UGC alignment would be agreed in pre-construction phase consultations with The Highland Council and an appropriate strategy set out in a Written Scheme of Investigation (WSI) as appropriate.
- 1.6.6 Formal arrangements would be put in place for any unforeseen archaeological discoveries made by the construction contractor to be reported to a retained professional archaeological organisation. These arrangements would require any unexpected discoveries to be assessed by a retained, professional archaeological advisor and dealt with appropriately, and would make clear the legal responsibilities placed upon those who make unexpected discoveries of archaeological significance. These arrangements would be included in the CEMP for the construction project and would be explained in toolbox talks presented by the retained archaeological organisation.

Residual Effects

- 1.6.7 Provided that appropriate mitigation measures are undertaken, there are no predicted residual direct effects on cultural heritage interest as a result of the UGC works.

1.7 Forestry

1.7.1 Please refer to **Chapter 9: Forestry**.

Baseline Conditions

1.7.2 The alignment of the proposed UGC between the Bhlaraidh Wind Farm Extension substation and the start of the OHL involves no forestry or woodland. From the southern end of the OHL to the Fort Augustus substation the UGC is within the heavily wooded area of Inchnacardoch Forest. However, the alignment follows land identified as “open ground” that is not planted or occupied by trees or woodland.

1.7.3 None of the extent of the UGCs are identified in the Ancient Woodland Inventory (AWI) or Native Woodland Survey of Scotland (NWSS).

Direct Impacts

1.7.4 The introduction of the 132 kV UGC would have no impact on the integrity of woodland areas.

1.7.5 The area of the UGC within the forested areas is between existing OHLs which constrain forest management activities and planning and therefore pose little additional impact on forest management.

Mitigation

1.7.6 It is considered that there is no requirement for mitigation in terms of forestry and woodland loss.

Residual Effects

1.7.7 There are no residual effects resulting from the installation of the UGC within these areas.

1.8 Schedule of Mitigation

1.8.1 **Table 10-1** provides a summary of those mitigation measures identified throughout this Appendix related to the UGC elements of the Proposed Grid Connection to minimise or offset the potential effects on the receiving environment. Mitigation measures specific to the OHL elements are outlined within **Chapter 10 of the EA Report**, where relevant.

Table 3: Schedule of Mitigation Measures

Topic	Issue	Mitigation Reference	Mitigation / Monitoring Measure	Responsibility
General	Working Hours	G1	Construction activities would in general be undertaken during daytime periods only. For weekdays, this would involve work between approximately 07:00 to 19:00 in the summer and 07:30 to 17:00 (or as daylight allows) in the winter. On Saturdays, the working hours would be approximately 07:00 to 13:00 in the summer and 07:30 to 13:00 (or as daylight allows) in the winter. Any variation in these working hours would be agreed in advance with The Highland Council (THC).	Contractor
	Environmental Management	G2	The development and implementation of a site specific Construction Environmental Management Plan (CEMP). This document will detail how the Principal Contractor would manage the site in accordance with all commitments and mitigation detailed in the EA Report, statutory consents and authorisations, industry best practise and guidance. The CEMP will also reference General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs), which have been developed by SSEN Transmission and are included in Appendix 3.1 and Appendix 3.2 of this EA Report. The implementation of the CEMP will be managed on site by a suitably qualified and experienced Environmental Clerk of Works (ECoW), with support from other environmental professionals as required.	Contractor / SSEN Transmission
	Pollution Control	G3	Best practice control measures, with reference to SEPA and Control of Substances Hazardous to Health (COSHH) guidelines, will be included in the CEMP. Particular reference will be made to managing handling, storage and use of hazardous chemicals and fuels used in the construction process. A detailed spill response plan will be developed and fully-briefed to all site operatives and forms part of the CEMP.	Contractor
			G4	Suitable pollution control measures will be implemented to ensure the deployment of silt traps to prevent flow of silt across vegetation.
	Traffic Management	G5	The development and implementation of a site specific Construction Traffic Management Plan (CTMP). To address potential impacts from construction traffic and describe all mitigation and signage measures that	Contractor

			are proposed on public road accesses, a CTMP will be prepared pre-construction in consultation with THC and Transport Scotland.	
	Traffic Management	G6	Access along key routes including the U1663 Auchterawe Road would be maintained throughout the construction period. Construction works near the A887 will be managed to avoid disruption during the months of July and August.	Contractor
	Traffic Management	G7	Access along or crossing core paths, including CP IN16.16 would be managed via an Outdoor Access Plan which would form part of the CTMP.	Contractor
Landscape and Visual	Mitigation of Adverse Landscape and Visual Effects	LV1	No specific mitigation measures are proposed. General best practice measures during construction, and a high standard of reinstatement as will be set out in the CEMP will assist in minimising the degree of landscape and visual effects.	Contractor / SSEN Transmission
	Site Reinstatement	LV2	Following commissioning of the UGC, all construction sites and disturbed ground will be reinstated and implemented through good practice and construction management, as set out in the site specific CEMP. It will be particularly important to reinstate any areas of planting and earthworks in the vicinity of Fort Augustus Substation as soon as possible, including existing and proposed landscaping. Planting along the minor road plays a role in screening the substation, so disturbance to this existing screen should be avoided where possible or minimised by narrowing the construction corridor as much as possible. Where removal is unavoidable due to construction works, planting would be reinstated / replanted as early as is practicable.	Contractor / SSEN Transmission
	Removal of Vegetation	LV3	Construction of the UGC will involve tree felling. Felling of trees near receptor locations will be minimised as far as practicable.	Contractor
Nature Conservation	Environmental Clerk of Works	NC1	A site based ECoW will be appointed to oversee environmental management during the construction of the UGC and implement commitments made in site specific CEMP, as well as relevant GEMPs and SPPs (see Appendix 3.1 and Appendix 3.2). Toolbox Talks (TBTs) will be provided by the ECoW to site personnel on relevant site sensitivities,	Contractor / ECoW

			legislation and guidance associated with the sensitivity and good practice guidance. TBTs will also cover appropriate information with reference to any mitigation measures in place for protected species or habitats. The ECoW will have the authority to 'stop the job / activity' if a breach or potential breach of mitigation or legislation occurs.	
	Excavation and Reinstatement	NC2	Where excavation is required (e.g., to create temporary access tracks), excavated materials will be stored according to best practice taking care to separate, as far as is reasonable, vegetation turves, topsoils, soil and boulders to ensure successful reinstatement.	Contractor
	Habitats	NC3	During construction activities, surface water flows will be captured through a series of cut off drains to prevent water entering excavations or eroding exposed surfaces. If dewatering is required, pumped discharges will be passed through silt / sediment control measures.	Contractor
		NC4	The location of the underground cable route and new temporary access tracks would be microsited to avoid GWDTE habitats where possible and vehicular access would be restricted across unprotected ground beyond the footprint of each pole location. Proposed works would avoid other sensitive habitats where possible (e.g. blanket bog). This would not be possible in some locations (e.g. on blanket bog near Bhlaraidh Wind Farm extension substation and on wet modified bog in Inverwick forest). In these areas temporary Trackway and the use of specialised low ground bearing pressure vehicles would be employed to prevent damage to the surface vegetation, avoid compaction of the peat beneath and maintain hydrological pathways to prevent the temporary infrastructure from affecting these habitats and associated hydrology. Temporary Trackway would be microsited away from any features such as hags and bare peat to avoid any further risk of erosion.	Contractor
		NC5	Measures specific to works within blanket bog and wet heath habitats: <ul style="list-style-type: none"> A single access route along the UGC route would be identified and used for access. All other access traversing semi-natural habitat would be restricted to avoid unnecessary disturbance to the habitat. The ECoW would be involved in identifying this route with the Principal Contractor to find the most preferable route; 	Contractor

			<ul style="list-style-type: none"> • Temporary Trackway would be installed along this access route through these habitat to minimise erosion; • Cables would not be dragged through wet heath and blanket bog habitat to avoid erosion; and • No fuel or chemicals would be stored within 50 m of the blanket bog habitat. 	
		NC6	In areas of native woodland the felling area will be minimised as far as possible. Individual mature and veteran trees at the edges of wayleaves and access corridors will be identified, marked and root protection zones established to prevent additional loss of trees at the boundaries of the required felling area.	Contractor
	Protected Species	NC7	Prior to construction commencing, a suitably qualified ecologist or ECoW will undertake pre-construction survey(s) to ascertain the presence and level of activity of all protected mammal species in the area.	Contractor
		NC8	The Contractor will be responsible for adherence to specific measures set out in SSEN Transmission's SPP which include mitigation to reduce the likelihood of disturbance, mortality and injury to foraging protected species utilising the area surrounding the UGC. In the event of any significant signs of mammal activity being found additional to those identified during the course of surveys as described above, actions as set out in SSEN Transmission's SPP will be followed and advice sought from the appointed ECoW, and if necessary the local NatureScot office	Contractor
		NC9	Construction staff will be briefed (prior to commencing work) by the ECoW on the protected species present in the general area, the legislative context and potential signs of activity.	Contractor
		NC10	Prior to construction commencing a pre-construction badger survey will be undertaken, focussing on where badger have previously been identified. To minimise the risk of disturbance and injury to badger, appropriate markers will be used to define each sett entrance, in accordance with SSEN Transmission's SPP. All works personnel, machinery, vehicles and storage of materials would be restricted from entering protection zones. Where the existing or temporary access track passes near to the badger	Contractor

			sett through Inverwick forest, speed will be restricted to 10 mph. The ECoW will continue to monitor badger presence within the construction areas to ensure any new colonies that may become established during construction are adequately protected.	
	Birds	NC11	Construction works should be undertaken to avoid the breeding bird season (March to end of July inclusive) where possible. Where this is not possible, pre-construction checks should be undertaken by a suitably qualified ecologist / ornithologist in line with the Birds SPP (see Appendix 3.2), to identify, and mitigate for, the presence of protected bird species and nests. Should a nest of any bird be located during pre-construction surveys, the ECoW would: recommend suitable mitigation measures (including appropriate buffer zones depending on the species); implement any requirements of the SPP and provide toolbox talks to contractors to ensure accidental / reckless disturbance of the nesting bird is avoided. The ECoW / suitably qualified ornithologist would undertake regular monitoring of birds present within proximity to works to ensure any nests are promptly located, identified and suitably protected from damage or disturbance.	Contractor / Ecologist or Ornithologist / ECoW
		NC12	Prior to the commencement of construction, black grouse lek surveys would be carried out at the appropriate time of year by a suitably qualified ornithologist in accordance with standard survey methodologies ² .	Contractor / Ecologist or Ornithologist / ECoW
		NC13	The construction programme should consider the timing of works within 500 m of the lek locations, to completely avoid the use of this section of track during the peak lekking period of late March to the end of May. If this section of access track requires upgrading as part of enabling works for the Proposed Development, this shall be undertaken outwith March to May. If it is not considered possible to completely avoid the use of this section of access track between March and May to facilitate access to construct the UGC, access should be limited to avoid disturbance to lekking birds (i.e. no vehicle access will be permitted along the access track within 500 m of lek sites for two hours after sunrise).	Contractor / Ecologist or Ornithologist / ECoW

² Gilbert, G., Gibbons, D.W. and Evans, J. (2011) Bird Monitoring Methods. RSPB/BTO

Geology, Water and Soils	Good Practice Guidance	H1	The UGC will be constructed in accordance with relevant technical guidance and established best practice construction techniques and procedures agreed with statutory consultees, including SEPA and NatureScot, as set out within SSEN Transmission's GEMPs (see Appendix 3.1 of the EA Report).	Contractor
	Good Practice	H2	The construction phase of the works will be undertaken in accordance with good practice guidance as set out in Section 7.6 of Chapter 7 of the EA.	Contractor
	Soils and Geology	H3	The CEMP will also outline measures to ensure that the works minimise the risk to soils, peat, geology, groundwater, surface water and licensed water uses. It will include a project specific drainage plan and materials (soils and peat) management plan. The drainage plan would detail the passive measures that would be deployed to treat both the quality and quantity of water shed from the works area in accordance with Sustainable Drainage Systems (SuDS) techniques. The materials management plan will show how soils and peat arisings will be safeguarded, will be managed and used in restoration on site.	Contractor
	Surface Water and Ground Water Quality	H4	In general, proposed construction site access would be taken via the existing public road network and would make use of existing forest and estate tracks as far as practicable. For temporary watercourse crossings less than 2 m wide CAR General Binding Rules will be adhered to. Bog mats, or similar, would be positioned across the watercourse to enable access, where necessary, side rails will be installed with silt mitigation at either end and across if required to ensure that silt impacts from vehicles crossing are controlled at all times. Crossings will be cleaned at the end of the day if required. All proposed crossing locations and methodologies would be reviewed and approved by the ECoW, prior to any works being undertaken.	Contractor
	Surface Water and Ground Water Quality	H5	The CEMP, developed prior to commencement of any construction work, will outline measures to ensure that the works minimise the risk to both groundwater and surface water. The following will be included within the CEMP:	Contractor

			<ul style="list-style-type: none"> • a commitment to adopt best working practices and measures to protect the water environment, including those set out in GPP01; • in accordance with GPP02 any above ground on-Site fuel and chemical storage would be bunded; • an emergency spill response kit will be maintained during the construction works (GPP21); • a vehicle management system / road markings will be put in place wherever possible to reduce the potential conflicts between vehicles and thereby reduce the risk of collision (GPP21); • suitable access routes would be chosen which minimise the potential requirement for either new temporary access tracks or for tracking across open land which could contribute to the generation of suspended solids; • a speed limit will be used to reduce the likelihood and significance of any collisions; • plant nappies will be placed under vehicles which could potentially leak fuel/oils; • any temporary construction / storage compounds required would be located remote from any sensitive surface water receptors and will be constructed to manage surface water run-off in accordance with best practice; • any water contaminated with silt or chemicals would not be discharged directly or indirectly to a watercourse without prior treatment; • water for temporary site welfare facilities would either be brought to site or a local surface water or groundwater abstraction would be identified. Any water abstraction would be made in accordance General Binding Rule or an authorisation would be obtained from SEPA in accordance with the Controlled Activity Regulations (CAR); and 	
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			<ul style="list-style-type: none"> foul water would either be collected in a tank and collected for offsite disposal at an appropriately licensed facility or discharge will be to a septic tank or soakaway in accordance with the Controlled Activity Regulations (CAR). <p>The above measures will significantly reduce the likelihood of pollutants, including suspended solids, being discharged to nearby watercourses or groundwater and would safeguard water quality.</p>	
		H6	A Site Construction Licence would be required and obtained in accordance with the Controlled Activity Regulations (CAR) from SEPA prior to any construction works commencing on site. The Licence would specify the controls and measures that would be used at site to safeguard the water environment.	Contractor
Cultural Heritage	Unforeseen Archaeological Discoveries during construction works	CH1	<p>Monitoring of groundworks would also be carried out at appropriate points along the alignment where there is greater potential for buried remains to survive.</p> <p>Any requirements for archaeological investigations or watching briefs within previously undisturbed ground along the UGC alignment would be agreed in pre-construction phase consultations with The Highland Council and an appropriate strategy set out in a Written Scheme of Investigation (WSI) as appropriate.</p>	Contractor / Archaeologist
Forestry	Construction Phase	F1	<p>Compensatory planting (CP) is proposed to mitigate the impact of cumulative loss of woodland area in line with Scotland's Control of Woodland Removal policy, which requires all areas of woodland lost to development to be offset with CP.</p> <p>This CP will be achieved in line with the Compensatory Planting Management Strategy set out in Appendix 9.4.</p>	Contractor / SSEN Transmission
		F2	SSEN Transmission has committed to the development of woodland reports for each forest ownership (see Appendix 9.2 and 9.3). These aim to reduce the risk of future wind throw by identifying felling to stable forest edges (outside of the operational corridor). The woodland reports would also include, but are not limited to seeking to agree a forest landscape	Contractor / SSEN Transmission

			design following good practice as defined by Forestry Commission Guidance (2014) ³ .	
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³ Forestry Commission, Practice guide, Design techniques for forest management planning <https://forestry.gov.scot/publications/106-design-techniques-for-forest-management-planning/viewdocument/106> Visited 19/08/2022