VOLUME 2: CHAPTER 15 – SCHEDULE OF ENVIRONMENTAL MITIGATION

Appendices (Volume 4 of this EIA Report)

There are no appendices associated with this Chapter

Figures (Volume 3 of this EIA Report)

There are no figures associated with this Chapter

15. SCHEDULE OF ENVIRONMENTAL MITIGATION

15.1 Introduction

15.1.1 This chapter collates the mitigation measures and environmental management commitments which are presented in each of the technical chapters (Chapters 7-13) of this Environmental Impact Assessment (EIA) Report into a single schedule, which is presented in **Table 15-2: Schedule of Mitigation Measures**. Measures to mitigate construction and operational phase impacts are included. Measures to mitigate effects which are predicted to arise apply to all elements of the Proposed Development unless otherwise specified.

15.1.2 Environmental effects and associated mitigation measures are presented in the order in which they appear within this EIA Report.

15.1.3 Mitigation measures that have been incorporated into the Proposed Development through the design development process, including those relating to avoidance of impacts through site selection and optioneering, are not included here as they form part of the design process of the Proposed Development described in **Chapter 3: Development Description.**

15.1.4 **Table 15-2: Schedule of Mitigation Measures** is structured to distinguish between embedded, applied and additional mitigation as defined below:

- **Embedded Mitigation**: design stage mitigation;
- **Applied Mitigation**: standard/best practice environmental discipline/construction industry mitigation; and
- **Additional Mitigation**: Site-specific bespoke mitigation.

15.1.5 **Embedded Mitigation (Tier 1)** is a process of mitigating impacts in the design stage of a project's development. The purpose of embedding mitigation through project design is to reduce or eliminate foreseeable potentially significant environmental effects. Avoiding or reducing environmental impacts through the design process is a key objective of EIA.

15.1.6 The design of the Proposed Development has been progressed through an iterative process integrating electrical and civil engineering and environmental considerations. The design process has sought to reduce or eliminate potentially significant environmental effects at the outset taking account of site topography, slope, drainage, existing land uses and vegetation. A landscape design has been developed to define the location and position of landscaping structures which provide visual screening of the Proposed Development, and other design features and planting which mitigate landscape and visual impacts, and which provide opportunities to enhance biodiversity within the Site.

15.1.7 **Applied Mitigation (Tier 2)** comprises the adoption of good practice measures and procedures relating to assessment discipline-specific, industry standard construction environmental management which are well understood and with a high degree of confidence they would be effective, and the Applicant's own proprietary environmental management plans, which are based on the industry standard.

15.1.8 In relation to Applied Mitigation, for its new infrastructure projects in recent years, the Applicant has developed and effectively implemented a suite of General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs) which prescribe good environmental management practices. In addition, the Applicant has developed a Consents and Environment Specification which prescribes environmental management principles which Contractors are required to meet under the terms of the Principal Contract. The Specification includes management plans that the Contractor is required to prepare and implement, including a Construction Environmental Management Plan (CEMP), and subsidiary plans on aspects such as ecological and ornithological management, construction noise management, construction transport management. In preparing these Plans, the Contractor will be required to incorporate any additional management measures identified through the EIA as necessary to avoid or reduce significant residual effects (i.e., "additional mitigation").

15.1.9 **Additional Mitigation (Tier 3)** comprises Site-specific mitigation considered necessary to reduce the magnitude and/or significance of residual impacts which remain after the application of embedded and applied mitigation.

15.1.10 Given the scope and substance of embedded and applied mitigation, the requirement for additional mitigation is limited to a small number of individual situations, such as additional archaeological investigation (trenching) prior to development (Cultural Heritage), and installation of silt fences/settlement ponds around water crossings and access tracks during construction (Hydrology).

15.1.11 Embedded Mitigation is secured through the design process, while both Applied Mitigation and Additional Mitigation would be secured through the terms of the Principal Contract. In addition, it is expected that Angus Council, as planning authority, would seek the implementation of similar environmental management principles, and of specific Management Plans, through Conditions attached to the planning permission. The expectation would be that the plans and measures developed by the Contractor in accordance with the approach described above, would be reviewed and approved by Angus Council as part of condition discharge.

15.1.12 Any additional monitoring identified has also been included in **Table 15-2: Schedule of Mitigation Measures**. Topic specific embedded, applied and additional mitigation measures have been alpha numerically referenced as discrete measures using the codes presented in **Table 15-1: Mitigation code guide.**

Table 15-1: Mitigation code guide

Topic Chapter	Reference Used
General	G
Landscape and Visual Impact	LV
Cultural Heritage	CH
Ecology	EC
Ornithology	O
Hydrology and Hydrogeology	HG
Transport and Access	TA
Noise and Vibration	NV

15.1.13 It is the intention of the Applicant that all mitigation measures in this schedule will be implemented either through appropriately worded planning conditions and/or through the requirements of the Principal Contract, as described above. The Principal Contract contains a provision to audit and report to the Applicant on the implementation of mitigation measures, through the appointment by the Principal Contractor of an Environmental Manager/Clerk of Works, whose role will be to ensure the implementation and effectiveness of all environmental management measures specified through the Principal Contract.

Table 15-2: Schedule of Mitigation Measures

Topic	Type of Mitigation	Ref	Mitigation / Monitoring Measure	Project Stage/Timing	Responsibility
General	Applied Mitigation	**G1**	**SSEN Transmission General Environmental Management Plans (GEMPs) and Species Protection Plans** All construction and (where relevant) decommissioning works will be carried out in accordance with all relevant General Environmental Management Plans (GEMPs) and relevant Species Protection Plans (SPPs) developed by the Applicant, as a condition of the Principal Contract. These documents set out good construction environmental management and mitigation principles and measures that SSEN Transmission requires for all OHL and substation projects, where appropriate. The following GEMPs and SPPs have been assumed as part of the applied mitigation for this project and EIA: GEMP: Oil Storage and Refuelling GEMP: Soil Management GEMP: Working in or Near Water GEMP: Working with Concrete GEMP: Watercourse Crossings GEMP: Waste Management GEMP: Contaminated Land GEMP: Private Water Supplies GEMP: Dust Management GEMP: Biosecurity GEMP: Restoration GEMP: Bad Weather Badger Species Protection Plan Bat Species Protection Plan Bird Species Protection Plan Otter Species Protection Plan Relevant SSEN Transmission GEMPs and SPPs are included in the impact assessments set out in chapters 7-13.	Pre-construction During construction Operation Decommissioning	Principal Construction Contractor Relevant Sub-Contractors

Topic	Type of Mitigation	Ref	Mitigation / Monitoring Measure	Project Stage/Timing	Responsibility
		G2	**Construction Environmental Management Plan (CEMP)** The Principal Contract requires the Principal Contractor to prepare and implement a CEMP. The CEMP will detail how the Principal Contractor shall manage construction and work in accordance with the GEMPs and SPPs referenced above and with all commitments and mitigation specified in this table, together with the requirements of appropriate statutory consents and authorisations, The Principal Contract also requires the Principal Contractor to prepare and implement specific topic specific management plans, specifically: Site Waste Management Plan Site Water Management Plan and Pollution Prevention Plan Soil Management and Restoration Plan Cultural Heritage Management Plan / Written Scheme of Investigation Ecological and Ornithological Management Plan Construction Noise Management Plan Air Quality Management Plan Construction Traffic Management Plan Outdoor Access Plan Landscape Plan The minimum content of these Plans is specified in the Principal Contract. It is also a condition of the Principal Contract that these Plans also incorporate any Additional Mitigation Measures, arising from the EIA, and which are set out in this table. These Plans may be incorporated into the CEMP or may be stand-alone, depending on the approach adopted by the Principal Contractor to implementation.	Pre-construction During construction Decommissioning	Principal Construction Contractor Relevant Sub-Contractors
	Monitoring		*N/A*		
Landscape and Visual	Topic Specific Embedded Mitigation	**LV1**	**Proposed bunding and planting.** The landscape design includes nine earth bunds ranging in height from 1.5 m to 10 m, located to the north, south, east and west of the Proposed Substation. The principles of this landscape design are to help screen the Proposed Substation at both year 0 (bare earth bunds) and year 10 (earth bunds planted with woodland which would have started to mature). The landscape design would also help to compensate the loss of any landscape features, including agricultural fields and gappy hedgerows within the Site. The landscape design has been designed to help better integrate the Proposed Substation into the landscape.	Pre-construction	Principal Contractor
	Applied Mitigation	**LV2**	Adherence to all relevant SSEN Transmission's GEMPs, including soil management, working in sensitive habitats, and restoration.	Construction	Principal Contractor

Topic	Type of Mitigation	Ref	Mitigation / Monitoring Measure	Project Stage/Timing	Responsibility
		LV3	Preparation and implementation of CEMP which shall include soil management, ecological management and general construction practices.	Construction	Principal Contractor
	Monitoring		Survey and monitoring of the proposed landscape mitigation planting, and replacement planting where required, to ensure the implemented planting successfully establishes and the predicted mitigation of landscape and visual effects is delivered.	Post-construction on an annual basis for five years.	Principal Contractor
Cultural Heritage and Archaeology	Topic Specific Embedded Mitigation	**CH1**	**Proposed bunding and planting**: Landscaping and planting mitigation measures have been adopted to both provide close-proximity screening in all directions, and to integrate the proposed substation into the wider agricultural landscape, including when beheld from longer distances. Several earthwork bunds are currently proposed to the north, east, south and west of the substation, with proposed native woodland planting concentrated to the east, south, and west. Compensatory tree, hedgerow, and shrub planting is proposed more generally along the field boundaries of the Proposed Development, providing further screening and landscape integration.	Pre-construction	Principal Contractor
	Applied Mitigation	**CH2**	Construction works will proceed in accordance with the measures outlines in the CEMP.	Construction	Principal Contractor
		CH3	Construction machinery will operate only within defined working areas and access corridors, limiting ground disturbance.	Construction	Principal Contractor
		CH4	Should they be encountered, previously unidentified archaeological remains will be subject to a programme of archaeological works to be developed in consultation with ACAS and detailed in a Written Scheme of Investigation (WSI), and will be a requirement of the contract between the Applicant and the Principal Contractor. It is envisaged that the requirement for a WSI will be secured through a suitably worded planning condition.	Construction	Archaeological contractor
	Monitoring		No further survey or monitoring is required in relation to the potential effects on cultural heritage arising as a result of the proposed Emmock Substation.		
Ecology	Topic Specific Embedded Mitigation	**EB1**	Landform of the screening bunds around the substation platform has been varied to provide opportunities for different ecological niches as part of the habitat creation proposals that will help to deliver enhancement through Biodiversity Net Gain (BNG). Habitats will include areas of native deciduous tree planting, areas of scrub, grassland and wet grassland habitats as shown on **Figure 3.2: Landscape Design.**	Pre-construction During construction Operation	Principal Contractor
		EB2	The substation drainage design follows sustainable drainage systems (SuDS) and the drainage swale has been designed to allow for wet grassland habitats to be created which offer the potential for local biodiversity enhancement in the longer term.	Operation	Principal Contractor

Topic	Type of Mitigation	Ref	Mitigation / Monitoring Measure	Project Stage/Timing	Responsibility
		EB3	Where possible, retention of trees (particularly those with bat roost potential) and riparian habitat along the Fithie Burn that provide commuting and foraging, and potential bat roost opportunities for a range of protected species.	Operation	Principal Contractor
	Applied Mitigation	**E4**	Adherence to SSEN Transmission's Standard GEMPS (Working In or Near Water, Dust Management and Biosecurity) and SPPs (Badger, Bat, Beaver, and Otter). Implementation would be overseen by a suitably experienced ECoW with further detail on the definition of this role and implementation as part of an outline Construction Environment Management Plan (see E5 below).	Prior to and during construction	Principal Contractor / ECoW
		E5	Preparation and implementation of CEMP which will incorporate an Ecological and Ornithological Management Plan pursuant to the contractual requirements of the Principal Contractor.	Prior to and during construction	Principal Contractor / ECoW
		E6	Undertaking any works at the Dighty Burn in accordance with a European Protected Species License.	Prior to and during construction	Principal Contractor / ECoW
		E7	The Applicant will implement on-site and off-site BNG measures, as defined in **Appendix 9.3: Biodiversity Net Gain Assessment Report**.. BNG measures will deliver no less than a 10% net gain in biodiversity units, and will be underpinned by sound ecological principles to deliver broad benefits for a range of ecological features.	Pre-energisation as defined in **Chapter 3: Description of the Proposed Development**	Applicant
	Monitoring	**E8**	Survey and monitoring to ensure the ongoing efficacy of mitigation measures and identify any requirement for further intervention.	Prior to, during and following construction	Principal Contractor / ECoW
Ornithology	Topic Specific Embedded Mitigation	**O1**	Ornithological mitigation will take advantage of screening bunds around the substation platform which are developed as part of habitat creation proposals. In conjunction with ecology, the areas will be used to include areas of native deciduous tree planting, areas of scrub, and grassland planting, together with the creation of wet grassland habitats (see **Figure 3.2: Landscape Design**).	Pre-construction During construction Operation	
		O2	Sustainable drainage systems (SuDS) have been designed to allow for wet grassland habitats to be created which offer the potential for local biodiversity enhancement in the longer term which will also include opportunities for breeding birds (see **Figure 3.2: Landscape Design**).	Pre-construction	
		O3	The retention and bolstering of existing hedgerow lines with additional planting to enhance the quality and consistency of the existing hedgerows where these cannot be retained (see **Figure 3.2: Landscape Design**).	During construction	
	Applied Mitigation	**O4**	Implementation of SSEN Transmission "Bird Species Protection Plan" Adherence to the BSPP will be employed to ensure careful timing of construction activities near to sensitive locations to avoid effects on all breeding birds as well as foraging SPA species. Appropiate species-specific working buffers would be employed to assure that minimal disturbance is achieved. Implementation of the BSPP would be overseen by a suitably experienced Environmental Clerk of Works (ECoW) with	Prior to and during construction	Principal Contractor

Topic	Type of Mitigation	Ref	Mitigation / Monitoring Measure	Project Stage/Timing	Responsibility
			further detail on the definition of this role and implementation as part of an outline Construction Environment Management Plan (see **O5** below)		
		O5	Preparation and implementation of CEMP which will incorporate an Ecological Management Plan pursuant to the contractual requirement of the Principal Contractor.	Prior to and during construction	Principal Contractor
		O6	The Applicant will implement on-site and off-site BNG measures as defined in the BNG Report. BNG measures will deliver no less than a 10% net gain in biodiversity units, which will include measures designed to provide habitat for ornithological species.	Prior to operation	Applicant
Hydrology and Hydrogeology	Topic Specific Embedded Mitigation	**HG1**	The layout of the Proposed Development has been carefully considered to avoid any development in the 200-year + climate change floodplain of the Fithie Burn and tributary. There is no proposed development, including SuDS within the 200-year + climate change floodplain, with the exception of landscape planting and the access track crossing (**Figure 11.2: Flood Risk Areas within Study Area**).	Pre-construction	Principal Contractor
		HG2	Watercourses are waterbodies have been buffered by 50 m (where possible) as per SEPA's Scoping response (**Table 11.1: Summary of Consultation**) to minimise any potential adverse effect on surface water quality and flood risk. Locations where the 50 m buffers could not be met are assessed in **Appendix 11.2: Watercourse Crossing Assessment** (including the proposed SuDS discharge to the Fithie Burn) and summarised in the assessment within this chapter.	Pre-construction	Principal Contractor
		HG3	The proposed access track crosses the unnamed tributary to the Fithie Burn, which is culverted under the field at the crossing location. In order to maintain safe access to the Proposed Development during extreme events and to comply with SEPA guidance the crossing has been designed to pass the 200-year plus climate change overland flood flow. The crossing will follow SEPA guidance on watercourse crossing design.	Pre-construction	Principal Contractor
		HG4	The Proposed Developments' drainage design follows (SuDS) and the drainage channels, and swales have been designed such that local hydrological patterns and surface water run-off flow rates will be attenuated to existing 'greenfield' rates. The permanent drainage of the substation has been designed in accordance with Angus Council and SEPA requirements, with the SuDS designed to provide the appropriate attenuation and treatment of surface water runoff. An outline drainage strategy is provided in **Appendix 11.1: Flood Risk Assessment and Outline Drainage Strategy** and further details and drawing of the permanent drainage design are provided in **Figure 11.3: Drainage Design**. The SuDS will drain to the Fithie Burn via an outfall pipe restricted to the 2-year greenfield runoff rate.	Pre-construction	Principal Contractor
		HG5	Surface water runoff from the catchment which drains towards the Proposed Development from the north will be captured and routed round the Proposed Development to the Fithie Burn without flooding the Proposed Development. This interception drainage will be part of the construction and permanent drainage design.	Pre-construction	Principal Contractor

Topic	Type of Mitigation	Ref	Mitigation / Monitoring Measure	Project Stage/Timing	Responsibility
		HG6	All excavations less than 1 m deep will be located over 100 m away from groundwater abstractions or PWS sources as per SEPA guidance. Excavations greater than 1 m in depth will be located at least 250 m away from these receptors.	Pre-construction	Principal Contractor
		HG7	All laybys to be constructed on the principal construction haul route will be constructed at ground level and surface water runoff will be treated and attenuated as per Angus Council guidance.	Pre-construction	Principal Contractor
	Applied Mitigation	**HG8**	Construction of SuDS to treat and attenuate surface runoff from new hardstanding and tracks; reduce sedimentation and erosion and reduce the risk of pollution and accidental spillage.	Construction	Principal Contractor
		HG9	Construction SuDS and Pollution Control measures to be put in place during construction of the watercourse crossing of the access road.	Construction	Principal Contractor
		HG10	Appropriately sized culverts passing under the tracks that do not restrict flow and allow intercepted field drains and ephemeral streams/surface water flow pathways to pass under the tracks.	Construction	Principal Contractor
		HG11	Interceptor drainage ditches on the upgradient side of all proposed infrastructure to intercept and divert 'clean' surface water runoff draining towards the construction areas. These will be treated and attenuated prior to discharge to the water environment.	Construction	Principal Contractor
		HG12	Installation and maintenance of swales and track drains to intercept, collect and treat runoff from access tracks and hardstanding areas of the Site during construction and channel runoff to stilling ponds for sediment settling prior to discharge.	Construction	The Applicant and the Principal Contractor
		HG13	The above measures will be included in the CEMP. The CEMP will also include a plan to monitor and plan the timing of works to avoid construction during periods of heavy rainfall and a plan to detail emergency procedures in the event of spillages or any other breach.	Construction	The Applicant and the Principal Contractor
	Monitoring		No further survey or monitoring is proposed by the Applicant.		
Transport and Access	Topic Specific Embedded Mitigation	**TA1**	Basic traffic management measures, including the provision of direction signage at the proposed site access junction.	Prior to start of construction	Principal Contractor
		TA2	Provision of the new access track between Moatmill Road and Emmock Road.	Construction	Principal Contractor
	Applied Mitigation	**TA3**	Provision of a basic Construction Traffic Management Plan (CTMP), incorporating simple measures such as road cleaning facilities at the Site access and basic warning signage. The plan will also include access routing to be observed by traffic. The CTMP will be a contractual requirement of the Principal Contractor and it is anticipated that it will be secured via a suitably worded planning condition.	Prior to the start of construction	Principal Contractor
	Additional Mitigation	**TA4**	Temporary Traffic Regulation Order (TTRO) to provide a 40 miles per hour (MPH) speed limit at the A90 / Moathill Road Junction.	Pre-construction During construction	Principal Contractor
		TA5	Construction staff Travel Plan to reduce the use of single occupancy travel to and from site	Pre-construction	Principal Contractor

Topic	Type of Mitigation	Ref	Mitigation / Monitoring Measure	Project Stage/Timing	Responsibility
	Monitoring		The construction staff Travel Plan will be monitored to ensure that staff use van sharing or construction site minibuses to access the site.	Throughout the construction phase	Principal Contractor
			The Principal Contractor will undertake checks to ensure that approved access route is adhered to.	Throughout the construction phase	Principal Contractor
Noise and Vibration	Topic Specific Embedded Mitigation	**NV1**	**Specification of Low Noise Equipment** Various strategies are available to mitigate noise from operational noise equipment, mostly involving mitigation at source. The Applicant will secure suitably low noise equipment during procurement with a targeted noise specification for vendors. Where procuring equipment with an inherently low sound power output is not possible, enclosing equipment either fully or partially in an acoustic enclosure is able to achieve the same result. The exact specification will be determined during the detailed design phase of the Proposed Development. It is expected that further noise modelling and calculation will be conducted, and an updated noise impact assessment based on the final design of the Site to ensure compliance with noise limits.	Detailed Design / Procurement	Applicant
		NV2	**Bunding and landscaping** Bunding surrounding the Site has been implemented and included in the assessment. Bunds provide both visual and acoustic attenuation and are most effective when either close to the source or receiver.	Detailed Design	Applicant
	Applied Mitigation	**NV3**	Construction traffic will follow a circular access route via the Moatmill Road east of the Site and the U322 Emmock Road to the south, thereby avoiding Tealing village and concentrations of properties north and east of the Site.	Planning	Principal Contractor
		NV4	Adoption of a voluntary speed limit of 20 mph for all construction vehicles travelling on the Emmock Road and Moatmill Road	Pre-Construction Phase	Principal Contractor
		NV5	Construction Noise Management Plan including, but not limited to, the following measures: • Updated detailed construction noise impact assessment and CNMP • Carry out identified high noise level activities during daytime defined hours 07:00 – 19:00 on weekdays and 07:00 – 13:00 on Saturdays • Construction noise monitoring utilising best available techniques (BAT)	Pre-Construction Phase	Principal Contractor
	Monitoring		Construction noise monitoring	Construction	Contractor

Topic	Type of Mitigation	Ref	Mitigation / Monitoring Measure	Project Stage/Timing	Responsibility
			Noise compliance measurement	Project completion / energisation	Applicant