

14 Schedule of Mitigation

14.1 Introduction

- 14.1.1 The Schedule of Mitigation incorporates all of the measures proposed as part of the design, construction and operation of the Proposed Development to avoid, prevent, reduce and offset adverse environmental effects, and where relevant deliver environmental enhancements.

14.2 Schedule of Mitigation

Overview

- 14.2.1 Tables 14.1 to 14.2 provide a consolidated list of all mitigation and monitoring measures which have been identified in the EIAR. This includes those measures which are embedded in the design of the Proposed Development or will be implemented during its construction and operation as well as additional mitigation measures identified in the EIAR to be included in the design, construction or operation of the Proposed Development. Measures are presented for each environmental aspect including those scoped out at scoping stage where relevant.

Design Measures

Table 14.1 Schedule of Mitigation – Design (inc. Operation) Measures

Environmental Aspect	Design (inc. Operation) Measures
	Proposed Development
General measures (applying to more than one aspect)	- The design of the Proposed Development has sought to reduce its footprint as far as possible through the selection of switchgear technology and use of existing accesses. - Lighting of the substation platform will be directional with care to minimise potential for light spillage beyond the site particularly towards nearby properties to the east and south of the site as well as towards the adjacent road network.
	Proposed Development
Ecology	- The Proposed Development is located almost entirely in arable fields which are of very low ecological value. All access track infrastructure follows existing farm tracks or historic access routes, except where it would be constructed within arable fields. - All new watercourse crossings and upgrades will be designed following SEPA's information and guidance for crossings on watercourses and lochs (Error! Reference source not found.) to allow passage of animals including fish and otter. - Widening of Hawkhill Road will be conducted southwards as far as possible, limiting the number of mature trees on the northern boundary of the road needing felled. - The substation uses Gas Insulated Switchgear (GIS) technology which helps to reduce its overall footprint and minimise habitat loss. - All personnel involved in the construction and operation (and decommissioning) of the Proposed Development will be made aware of the ecological features within the ZOI and the mitigation measures and working procedures that must be adopted. This will be achieved as part of the induction process and through the delivery of Toolbox Talks, where required.

Environmental Aspect	Design (inc. Operation) Measures
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| | <ul style="list-style-type: none">• An Ecological/Environmental Clerk of Works (ECoW/EnvCoW) will be employed for the duration of the construction of the Proposed Development. The remit of the ECoW will include, but may not be limited to:<ul style="list-style-type: none">▪ carrying out pre-works checks for protected species and other important ecological features;▪ advising on exact infrastructure placement within micro-siting tolerances;▪ monitoring of, and advising on, storage of overburden to minimise habitat damage;▪ monitoring of any vegetated turves that may be stored for later reinstatement;▪ advising on habitat reinstatement;▪ monitoring of pollution control measures and advising on placement of ditches, settlement ponds, etc. to minimise habitat damage; and,▪ monitoring of protected species, and liaising appropriately to resolve any issues that arise, if necessary, including obtaining further derogation licence(s) and developing associated proportionate mitigation.• A Construction Environmental Management Plan (CEMP) will be prepared and submitted for approval by Fife Council and Clackmannanshire Council, in consultation with SEPA and NatureScot, where necessary, prior to commencement of construction. The CEMP will set out all environmental management measures and the roles and responsibilities of construction personnel.• Owing to the presence of Japanese knotweed within the Site, a Biosecurity Management Plan will be produced by a suitability qualified ecologist to mitigate risks and prevent spread of this INNS in accordance with legislation. This will include an updated survey to clarify the extent of INNS to be undertaken no more than three months prior to construction commencing. The appointed ECoW will oversee implementation of appropriate mitigation which is likely to include exclusion zones. Reference to the BMP, including associated roles and responsibilities, will be clearly detailed in the CEMP.• During all phases of the Proposed Development, pollution prevention measures will be adopted, following SEPA Pollution Prevention Guidelines (PPG) and Guidance on Pollution Prevention (GPP), including the following: |
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Environmental Aspect	Design (inc. Operation) Measures
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| | <ul style="list-style-type: none">▪ controls and contingency measures will be provided to manage run-off from construction areas and to manage sediment;▪ all oils, lubricants or other chemicals will be stored in an appropriate secure container in a suitable storage area, with spill kits provided at the storage location and at places across the Site;▪ in order to avoid pollution impacts to soils, vegetation and watercourses/waterbodies during construction, all refuelling and servicing of vehicles and plant will be carried out in a designated area which is bunded, has an impermeable base, and will be situated at least 50m away from any watercourse; and,▪ where works in or on the banks of watercourses are required, appropriate isolation of the working area will be implemented; <ul style="list-style-type: none">• Works near or at any retained native trees or semi-natural woodland will follow guidance in British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations (British Standards Institution, 2012).• Any artificial lighting required for construction works will be directional to avoid or minimise light spill beyond immediate works areas and will be of a sensitive nature, following Guidance Note GN08/23 Bats and Artificial Lighting At Night (ILP and BCT, 2023).• Site preparation including vegetation clearance will take place, as far as possible, outside the general breeding bird season (March to August, inclusive). Where vegetation must be cleared in the breeding season, the appointed ECoW will carry out nesting bird check(s).• Measures to prevent the injury or mortality of animals will be adopted, including:<ul style="list-style-type: none">▪ excavations will be provided with a means of escape for animals that may fall in overnight, such as a ramp or battered slope;▪ ECoW will monitor the fencing of working areas to ensure no animals are trapped within;▪ except where required to remain open for passage of water, pipes that animals could enter will be capped overnight; and, |
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Environmental Aspect	Design (inc. Operation) Measures
	plant and machinery will be inspected before use each day to check for the presence of animals which may have taken shelter within or beneath.
	Kincardine North Substation (measures not referenced above)
Ecology	- Tree, scrub, and hedgerow planting will be carried out as part of the landscape plan and as compensation for minor loss of immature scrub. This will include: - planting of broadleaved woodland and dense scrub - expanding the existing mature woodland to the south. - planting of species-rich hedgerow around the Site - planting of neutral grassland using an appropriate seed mix containing native species - Woodlands will be designed to integrate with existing species assemblages present around the Site, using native species of as local provenance. - Measures proposed to enhance biodiversity will be set out in a Landscape and Biodiversity Strategy (LBS). The LBS will take a synergistic approach to minimising the permanent ecological and landscape effects of the Proposed Development while also seeking to positively enhance biodiversity. - Brash from scrub clearance to facilitate access from the A876 will be retained within the Site and arranged into log piles at woodland edges. - The SuDS ponds will be designed to appear and function as naturally as possible in line with guidance (Woods Ballard et al, 2015). Where possible, this will include the following measures to benefit biodiversity - The features will remain permanently wet; - Edges will be appropriately sloped (gradually declining to provide different water levels). Where possible, the SuDS pond will be constructed to have a variety of different depths, with banks of varying steepness, to provide structural diversity;

Environmental Aspect	Design (inc. Operation) Measures
	▪ Marginal areas which are seasonally inundated will be seeded with an appropriate wetland herb seed mix containing native species and certainly not containing any INNS5 (e.g. Scotia Seeds7 Pond Edge Mix graded into Wet Meadow Mix).
Proposed Development	
Landscape and Visual	• An Outline Landscape Plan has been developed with measures including planting and bunding incorporated to provide some partial screening and/or filtering of views of the Proposed Development (Figure 7.5 within Chapter 7). • The Plan identifies areas of proposed planting including tree and shrub planting on the site boundary as well as grassland reinstatement outside of the substation platform and other hardstanding areas. • Proposed tree planting includes some planting on the western side of the site between the approved Kincardine Grid Services complex and the proposed substation, on the northern boundary towards Kilbagie and on the southern boundary supplementing the existing woodland between Hawkhill Farm and the Proposed Development. • Some tree planting is also proposed on the eastern boundary increasing the depth of existing planting which separates the site from the railway line. • At year 1 trees and shrubs will be newly planted and by year 15 will have established and delivering their envisaged function
Proposed Development	
Cultural Heritage	• Due to the nature of the Proposed Development, no suitable embedded mitigation has been proposed to for potential heritage impacts
Proposed Development	

Environmental Aspect	Design (inc. Operation) Measures
Traffic and Transport	• Mitigation relating to traffic movements associated with the Proposed Development would be focused primarily on HGV construction traffic, as the additional Car / LGV trips will have a negligible environmental effect on future traffic flows. • Embedded mitigation relating to traffic movements associated with the Proposed Development would be provided by a Construction Traffic Management Plan (CTMP). The CTMP would operate throughout the construction programme. Technical Appendix 11.1 contains a Framework CTMP. A detailed CTMP including the following is expected to be Conditioned and provided once a Principal Contractor is appointed: • Site and the entry/exit arrangements from public roads; • Traffic routeing plans – defining the routes to be taken by HGVs to the Site avoiding sensitive locations, and routes to be taken by Car / LGV construction personnel traffic; • Construction traffic hours and delivery times; • Strategy for traffic management and measures for informing construction traffic of local access routes, road restrictions (statutory limits: width, height, axle loading and gross weight), timing restrictions (if applicable) and where access is prohibited; • Measures to protect the public highway (e.g. wheel wash facilities); • Measures for the monitoring of the CTMP to ensure compliance from construction drivers and appropriate actions in the event of non-compliance; and • Mechanism for responding to traffic management issues arising during the works (including concerns raised from the public) including a joint consultation approach with relevant road authorities. • Public road improvements are proposed for the C68 Hawkhill Road. These comprise – widening along the length of the road on its southern side – Junction improvements with Quarry Road and also at the main access point to the proposed substation site. – Limited road widening on bends, and

Environmental Aspect	Design (inc. Operation) Measures
	– Provision of a fully segregated pedestrian/cycle route to the north of the vehicle carriageway.
Kincardine North Substation	
Noise and Vibration	• Power transformers and Shunt Reactors will be in accordance with the limits provided as follows: Power Transformers and cooling equipment will emit a maximum sound power level that shall not exceed 87 dB LWA measured in accordance with IEC 60076-10 at rated voltage. ▪ Earthing / Auxiliary Transformers will emit a maximum sound power level that shall not exceed 70 dB LWA measured in accordance with IEC 60076-10 at rated voltage. ▪ Shunt Reactors will emit a maximum sound power level that shall not exceed 83 dB LWA per three-phase set measured in accordance with IEC 60076-10 at rated voltage. ▪ Standby generator will be tested once a month for 1 hour. during daytime hours. • Other potential mitigation measures to minimise emissions from the standby generator comprise: ▪ Specifying a quieter standby generator. It is understood that an urban diesel generator could be specified which has a sound pressure level at 1 m that is 10 dB quieter than the rural option considered in this assessment. This would reduce the rating sound level by 10 dB in emergency operation scenarios and result in a 1 dB exceedance of the background sound level at NSR2 First Floor, which would be an indication of low impact ▪ Locating the standby generator further away from the NSRs which are located to the east of the substation ▪ Local screening or enclosure of the generator
Proposed Development	
Water Environment	• The drainage design will be based on Sustainable Drainage System (SuDS) principles incorporating filter drains, swales and SuDS pond to manage and treat surface water runoff prior to discharging back into watercourses.

Environmental Aspect	Design (inc. Operation) Measures
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| | <ul style="list-style-type: none"> The drainage design will be finalised taking account of the Surface Water Management Strategy (SWMS) which accompanies the planning application. Surface water from the hardstanding areas of the site will be conveyed via drainage ditches to SuDS pond (to the south of the site) where the water will be attenuated, before discharging at a controlled rate to an unnamed watercourse to the south of the site. Access tracks will first discharge to swales adjacent to the roads, before discharging to the SuDS pond. The drainage design will include oil interceptors to collect any fuels contained within runoff. An appropriately banded oil containment system will be installed to collect any potential oil leaks from electrical equipment within the substation platform which contain oil as an insulating medium. |
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Access and watercourse Crossings

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| | <ul style="list-style-type: none"> General access to the construction site will require upgrading an existing access track known as the Carse Road access track at the southern end of the Site. To do this, an existing culvert at approx. NS 92264 88894 allowing KNW-07 to flow beneath Carse Road - where the access track will emanate - will require reinforcement. Beyond this location, access tracks from the southern end of the Proposed Development will either follow existing farm tracks or be constructed across arable fields and will not require additional watercourse crossings. Where possible during construction, temporary tracks will be used through the installation of wood, aluminium or composite matting on level ground. However, there may be instances where stone tracks are required to enable access of heavy vehicles over uneven ground. In these cases, tracks are expected to be formed using compacted granular material placed on top of a synthetic geotextile membrane or grid, which will result in low permeability due to compaction from construction traffic. Access for abnormal loads only has been granted off the A876 at approx. NS 92234 89466. Again, this will require upgrading of existing tracks, including another existing watercourse crossing at NS 92344 89456, which allows KNW-08 to flow into KNW-02. It is assumed that an additional watercourse crossing will be included in the design to allow these loads to cross the KNW-02 and gain access to the Site. Error! Reference source not found. Error! Reference |
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Environmental Aspect Design (inc. Operation) Measures

source not found. below details the approach that will need to be followed during the construction of this crossing to fully mitigate potential impacts to surface water and hydromorphology.

- For both watercourse crossings, it is assumed that these will be permanent upgrades enabling access for maintenance during operation following construction. It is also assumed that the culvert dimensions will be maintained in accordance with SEPA guidance (Ref 9.**Error! Bookmark not defined.**) to minimise potential flood risk. However, final details will be determined at the design stage.
- Both access tracks originate alongside water bodies: KNW-07 for the main southern Carse Road access point; and KNW-02 and KNW-08 for the limited-use access point for abnormal loads. The access design layout of the Proposed Development has otherwise avoided further pathways for surface water contamination beyond the initial few metres of access track upgrades and single culvert upgrade.

Riparian Buffer Zone

- Riparian riverbank corridors are key components of nature networks and blue-green infrastructure, supporting biodiversity, water quality, and ecological connectivity. SEPA provides the following guidance on recommended buffer widths for riparian corridors based on channel size.
 - For watercourses with a channel width of 2 m or less, a 10 m buffer is recommended.
 - For channels between 2 and 15 m wide, the recommended buffer is 15 m.
 - For channels 15 m wide or greater, a 30 m buffer should be maintained.
 - A 50 m buffer is recommended for all water features from any excavations.
- Twelve new towers are to be constructed as part of the Overhead Line Works but only one is within 50 m of an identified watercourse. This is located at NGR NS 92437 89630, approximately 22 m west of KNW-04. KNW-04 is a straightened drainage channel with a consistent width of no more than 1.5 m between bank tops along its full length. Whilst this is outside the 10 m buffer recommended for such watercourses, it is still within the 50 m recommended for all excavations. However, the scale of excavations and earthworks is relatively minor. Furthermore, methods to be employed to prevent morphological damage and pollution are discussed in **Error! Reference source not found.**

Environmental Aspect Design (inc. Operation) Measures

Standard Mitigation. The remaining eleven towers are located over 50 m away from the nearest watercourse and so do not present any potential impacts on the riparian environment.

- Both the Kincardine North Substation and the Hawkhill Road Access Improvements are located beyond the recommended buffer zones and so avoid potential impacts on the riparian environment of watercourses identified in the KINN Study Area.

Tower Foundation Installation and Removal

- The Proposed Development will require the installation of 12 new towers, each of which will require dedicated foundations. Ground investigation works and ground conditions will inform the design as to whether a pad and column, piled or rock anchor solution will be selected. Some temporary scaffolding will also be erected to install the new overhead line and remove old ones across KNW-02 and KNW-04.
- Foundations that are to be removed will be excavated to a minimum depth of approximately 3.5 m below ground level with the area around the base of the tower cleared and the ground reinstated. During excavation, groundwater ingress may occur. If encountered, it will be appropriately managed in accordance with the measures outlined within the project's Water Management Plan (WMP) (described in more detail under **Standard Mitigation**, below), to prevent contamination or uncontrolled discharge to the surrounding environment.

Drainage

- Surface water runoff from the substation roof and hardstanding areas of the site will be conveyed via swales to a Sustainable Drainage System (SuDS) basin located in the south of the site. The exact design details of this basin are not currently known but plans at the time of writing indicate a basin approximately 140 m long and 100 m wide. The **Kincardine North Surface Water Management Strategy**, prepared and submitted as a standalone document with the planning application in support of the KINN plans states two smaller SuDS basins to be used, at the northwest and southwest corners of the site, but these have subsequently been replaced with the larger basin now described. The water will be attenuated here before discharging at a controlled rate to KNW-07, the nearest watercourse via a surface water pipe. Pipe outfalls will be supported by sandbags and fitted with baffles to help dissipate energy and avoid erosion of the bed and bank. The exact discharge location and levels are to be confirmed during the detailed design

Environmental Aspect Design (inc. Operation) Measures

phase. Swales will be constructed alongside permanent access tracks and the KINN site, where water will initially be conveyed before discharging to the SuDS basin, and ultimately KNW-07. A bunded oil containment system will be installed to collect potential fuel leaks from within the KINN platform and prevent its discharge into the surface water drainage system. Once operational, the SuDS basin and swales will require regular inspection for litter and debris that may cause blockages and removal of such items during regular maintenance. A Maintenance Plan will be prepared as part of detailed drainage design to set out these requirements.

- It is assumed that the KINN, SuDS basin and swales will be constructed on a foundation of gravel with a lining [HOLD TBC] to protect runoff from entering the groundwater beneath, though further details of this are to be confirmed at the detailed design stage. It is also assumed that during operation, a fire protection system would be provided and operated in accordance with SEPA's requirements and standards for limitation of fire risk at electricity substations and other relevant operational sites (Ref 9.i) to prevent runoff into surface and groundwater of harmful pollutants following a fire. This includes the implementation of fire preventative and protective measures with the use of primary and secondary containment systems. Again, details of these systems are to be confirmed at the detailed design stage.

Underground Cable

- As part of the Scottish Power Distribution Works, OHL will be removed and replaced with UGC across the Proposed Development site, connecting these works with the KINN and then the existing Kincardine Substation to the south. Currently, the UGC scoped in for assessment is to travel south from Pole 17 to the west of the KINN away from any water features until it reaches the access track from Carse Road at the south of the site, where it will run parallel to the track and pass beneath KNW-07 at the point of the access track watercourse crossing. It then continues to the Kincardine Substation southwards with no further interaction with the surface water environment. Another length of UGC is to be laid between Broomknowe Farm and Tullian Poultry Farm to the east of the site and will also cross KNW-07 between these two points, though the exact location is to be determined. Dimensions of the cable trench are yet to be finalised but are expected to be 0.2 m to 0.3 m in depth and is unlikely to impact the groundwater environment at this very shallow depth (i.e. no further assessment is proposed). However, it is recommended that cables be encapsulated within plastic ducts to ensure they remain watertight and are at least 1.5 m deep below the bed to avoid exposure by erosion, and that this depth is maintained laterally due to risk of channel movement.

Environmental Aspect	Design (inc. Operation) Measures
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| | <ul style="list-style-type: none">• For laying the UGC beneath KNW-07, it is assumed that horizontal direct drilling (HDD) will be used to install the cable. HDD is a trenchless method of installing underground utilities along a prescribed path, which may encounter watercourses, main roads or landfalls. HDD involves the use of a drill to bore a route below the ground through which ducts will be pulled and cables installed. As the method is trenchless, the requirement for a dry working area is removed, and the associated impacts of over-pumping or channel diversion on water features is removed. With the HDD method, there is also a potential risk of accidental surface spillage and subsurface 'frac-out' of drilling fluids, caused by excessive drilling pressures, and contamination of both surface and groundwater bodies. The Construction Environmental Management Plan (CEMP), detailed in Standard Mitigation below, will include embedded measures to be taken by the Contractor to mitigate these risks.• If HDD is not to be used, then an open cut trench with temporary overland pump will be assumed for installation. The open cut trenching technique will involve first temporarily impounding the watercourse and over-pumping the flow to create a dry working area, before excavating a trench through the bed of the water feature and directly laying the underground cables into it. The trench will then be backfilled using a combination of locally excavated soils and Cement Bound Sand (CBS) and the land reinstated. Where possible intrusive watercourse crossings will be carried out during drier periods of the year or during a period of dry weather where flows in the watercourse are low. This may be baseflow or, where the channels are very small and not well connected to groundwater, they may even be dry. However, this cannot be guaranteed and so any water flow within the watercourse will need to be over-pumped through the works area to maintain a dry trench and to reduce pollution risks. Flood Risk• The Kincardine North Substation Flood Risk Assessment states that other SP Energy Networks substation sites assessed previously have made use of small walls between 0.5-0.8 m in height around critical infrastructure or have constructed them at a similar elevation. If this construction method is used as part of the KINN design, this will be sufficient to protect from the maximum predicted flooding depth of 0.27 m.• The FRA also determined that, although over 300 mm of flooding is expected on the Hawkhill Road access track, the western route from the A876 does not experience flooding at the design event and provides safe emergency access to the entire site when flooding does occur, so upgraded and new access tracks can be retained within the development. |
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Environmental Aspect Design (inc. Operation) Measures

- The **Kincardine North Surface Water Management Strategy** states that the substation platform is to be raised to an elevation of 7.5 mAOD. with a maximum elevation of 8.5 mAOD and lowest of 4.8 mAOD and levels varying across the site between 5.5 mAOD in the west and 6.5 mAOD in the east. This raising will prevent fluvial flooding and facilitate free drainage from the substation to the appropriate storage SuDS components.
- Initially, two SuDS basins were planned for the southwest and north of the KINN site (as described in the **Kincardine North Surface Water Management Strategy**), and that as flooding was not experienced in these areas at a high regularity, no further mitigation was deemed necessary at this stage by the FRA, but it concluded that this should be examined at the design stage to ensure flood risk is not increased by their location or dimensions. Current designs have replaced these two smaller SuDS basins with one larger basin in the south of the site, in an area of low to zero flood risk, further mitigating this as a potential impact.

Standard mitigation

- All works on Site are to be undertaken in accordance with a Construction Environmental Management Plan (CEMP) for the Proposed Development developed in the detailed design phase.
- Supporting the CEMP will be a WMP that provides greater detail with regards to the measures required to avoid, reduce and minimise adverse impacts on the water environment during construction. WMP will be developed post consent and alongside detailed design and when the contractor(s) have been appointed. The WMP will also set out the scope of proposed water quality, flow and level monitoring of water features that are proposed, covering pre-construction, during construction, and post-construction phases.

Mitigation measures will accord with legal compliance and be in keeping with good practice. Measures relevant to this assessment include those that:

- Control and minimise the risk of pollution to surface waters and groundwater by managing construction site runoff and the risk of chemical spillages;
- Control rates of discharge if required to ensure no unacceptable increase in flood risk;

Environmental Aspect	Design (inc. Operation) Measures
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| | <ul style="list-style-type: none">• Manage water removed from excavations to protect nearby water features from any pollution risk but also to support flows if there is a risk of reductions to baseflow; and• Avoid and minimise the risk of damage to physical form and processes of water features. |
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	A summary of the key measures that may need to be implemented by the contractor(s) to manage the risk of pollution or physical damage to the water environment during construction works is summarised in the following sections. This includes a summary of what secondary consents may be required and good practice guidance.
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	Good Practice Guidance
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	The 'Guidance for Pollution Prevention' (GPP) series provides good practice advice in Scotland for how to manage the risk from pollution risks during construction works.
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| | <ul style="list-style-type: none">• GPP 1: Understanding Your Environmental Responsibilities – Good Environmental Practices (Ref 9.ii);• GPP 2: Above ground oil storage (Ref 9.iii);• GPP 3: Use and Design of Oil Separators in Surface Water Drainage Systems (Ref 9.iv);• GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer• GPP 5: Works and maintenance in or near water for construction or maintenance works near, in, or over water) (Ref 9.v);• GPP 6: Working at Construction and Demolition Sites (Ref 9.vi);• GPP 8: Safe storage and disposal of used oils (Ref 9.vii);• GPP 13: Vehicle washing and cleaning (Ref 9.viii);• GPP 19: Vehicles: Service and Repair (Ref 9.ix);• GPP 21: Pollution Incident Response Plans (Ref 9.x);• GPP 22: Dealing with Spills (Ref 9.xi); and |
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Environmental Aspect	Design (inc. Operation) Measures
	- GPP 26: Safe Storage – Drums and Intermediate Bulk Containers (Ref 9.xii). Key Construction Industry Research and Information Association (CIRIA) documents: - C811 (2023) Environmental good practice on site guide (Ref 9.xiii); - C609 (2004) Sustainable Drainage Systems, hydraulic, structural and water quality advice (Ref 9.xiv); - C624 (2004) Development and flood risk – Guidance for the construction industry (Ref 9.xv); - C753 (2015) Publication C753 SuDS manual (Ref 9.xvi); - C523 (2001) Sustainable Urban Drainage Systems – Best practice manual for England, Scotland, Wales and Northern Ireland (Ref 9.xvii); - C648 (2006) Control of Water Pollution from Linear Construction (Ref 9.xviii); - C649 (2006) Control of Water Pollution from Linear Construction Projects (Ref 9.xix); and - C532 (2001) Control of water pollution from construction sites – Guidance for consultants and contractors (Ref 9.xx). SEPA documents - Construction Regulatory Guide (Water), Version 1.1 (2021) (Ref 9.xxi); - WAT-RM-02: Regulation of Licence-level Engineering Activities v8.0 (2022) (Ref 9.xxii); - WAT-SG-93: Guidance for Transport Infrastructure Projects v3.0 (2018) (Ref 9.xxiii); and - WAT-SG-28: Good Practice Guide - Intakes and Outfalls (2019) (Ref 9.xxiv).
	Proposed Development
Ground Conditions	Embedded design measures typically relate to seeking to avoid sensitive geological receptors through the design of the Proposed Development or the selection of the construction method. The Proposed Development has been designed to avoid areas of sensitive geology or ground-related risk as much as possible. Key design measures include:

Environmental Aspect	Design (inc. Operation) Measures
	- Ground investigations have been undertaken to evaluate ground risks and inform the design of the Proposed Development including any specific design requirements with regard to previous mining activity. A specialist piling contractor will be sought to the most suitable type of pile for the prevailing ground conditions and as to their lengths and diameters to support the required design loads. - In line with the current assessment of mineral stability, in relation to new terminal towers in close proximity to known mine workings, the condition of the coal workings, and where applicable, the depth to and condition of the coal horizon, will be confirmed by means of targeted rotary boreholes. - Further ground investigation work will be undertaken in the presumed areas of the old pit shafts to effectively delineate their locations. When physically located, a safety platform and a sink a rotary borehole, using water flush, will be used within the confines of the shaft, in order to establish the nature of the infill material (if any). The information from the investigation would then allow an assessment of the most suitable means of treatment, which could be capping at rockhead and/or, provided the shaft contains adequate fill material, full depth consolidation by drilling and pressure grouting. - No works will occur in or within close proximity to the Firth of Forth SSSI.
	Sustainable Development The design of temporary construction components such as laydown areas, welfare facilities, temporary compounds and temporary access tracks have been aligned as far as possible for each development component (KINN, Overhead Line Works and Scottish Power Distribution Works). This approach ensures that impacts on the environment are minimised and a reduction in use of construction materials
	Proposed Development
Air Quality	The air quality of the area is generally good. Due to the nature of the Proposed Development, no suitable embedded mitigation has been proposed to for potential air quality impacts.

Construction Measures

Table 14.2 Schedule of Mitigation – Construction Measures

Environmental Aspect	Construction Measures
	Proposed Development
General measures (applying to more than one aspect)	- A Construction Environmental Management Plan (CEMP) will be prepared and submitted for approval by Fife Council and Clackmannanshire Council, in consultation with SEPA and NatureScot, where necessary, prior to commencement of construction. The CEMP will set out all environmental management measures and the roles and responsibilities of construction personnel. - An Ecological/Environmental Clerk of Works (ECoW) will be employed for the duration of the construction of the Proposed Development. - Lighting of the construction site will be directional with care to minimise potential for light spillage beyond the site particularly towards houses, live traffic, and neighbouring habitats especially where there are known populations of sensitive species. - Lighting will be used only when required and will comprise lighting of work areas and access and egress with low level directional lighting. Motion sensor lighting will be used in areas of high security risk and access and egress.
	Proposed Development
Ecology	General - All personnel involved in the construction of the Proposed Development will be made aware of the ecological features within the Zol and the mitigation measures and working procedures that must be adopted. This will be achieved as part of the induction process and through the delivery of Toolbox Talks, where required. - A Biosecurity Management Plan will be produced by a suitability qualified ecologist to mitigate risks and prevent spread of this INNS in accordance with legislation. This will include an updated survey to clarify the extent of INNS to be undertaken no more than three months prior to construction commencing. The appointed ECoW will oversee

Environmental Aspect Construction Measures

implementation of appropriate mitigation which is likely to include exclusion zones. Reference to the BMP, including associated roles and responsibilities, will be clearly detailed in the CEMP.

- Pre-construction surveys will be undertaken. This will comprise surveys for otter, water vole, badger, pine marten, and red squirrel. In addition, a GLTA of any trees which may be directly impacted (i.e. subject to lopping or felling), or located within 30 m of works with potential to cause disturbance to roosting bats, will also be conducted. The surveys will be carried out not longer than three months prior to commencement of works. The results of the surveys will be detailed in a Species Protection Plan (SPP), which will also include the results of the surveys described in this chapter.
- Site preparation including vegetation clearance will take place, as far as possible, outside the general breeding bird season (March to August, inclusive). Where vegetation must be cleared in the breeding season, the appointed ECoW will carry out nesting bird check(s).
- In-channel works will be scheduled to avoid crucial fish spawning/migration windows depending on what species are identified through eDNA (i.e. August-October and April-June, inclusive for eels).
- Any artificial lighting required for construction works will be directional to avoid or minimise light spill beyond immediate works areas and will be of a sensitive nature, following Guidance Note GN08/23 Bats and Artificial Lighting At Night (ILP and BCT, 2023).
- Works near or at any retained native trees or semi-natural woodland will follow guidance in British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations (British Standards Institution, 2012).
- Measures to prevent the injury or mortality of animals will be adopted, including:
 - excavations will be provided with a means of escape for animals that may fall in overnight, such as a ramp or battered slope;
 - except where required to remain open for passage of water, pipes that animals could enter will be capped overnight; and,
 - plant and machinery will be inspected before use each day to check for the presence of animals which may have taken shelter within or beneath.

Environmental Aspect Construction Measures

- The temporary access route from the A876 will be micro-sited to avoid the loss of reedbed SBL priority habitat. The area to avoid will be demarcated by the appointed ECoW using, for example, brightly coloured setting out flags and/or posts and rope.
- All habitats affected by construction of the temporary access road, excluding arable fields and willow scrub, will be reinstated post-works.

Habitat Creation and Landscaping

- Tree, scrub, and hedgerow planting will be carried out as part of the landscape plan (portrayed in Figure 7.5). This will offset minor loss of immature scrub and enhance the overall biodiversity value of the Site (as described in Section **Error! Reference source not found.: Error! Reference source not found.**).

Woodland, Tree and Scrub Planting

- More than 5 ha of broadleaved woodland and dense scrub will be planted in a number of locations on the margins of the Site, expanding the existing mature woodland to the south. Planting will be planned to achieve a complex vertical structure with a graded woodland edge which transitions into scrub. Woodlands will be designed to integrate with existing species assemblages present around the Site, using native species of as local provenance as possible (**Error! Reference source not found.**), and certainly no INNS¹.
- Consequently, trees planted in the southern areas will mostly comprise birch and willow and will aim to resemble the canopy of the adjacent LMDW. In the north, the existing woodland block is dominated by ash; however, due to the prevalence of ash dieback in Scotland, it is not recommended that ash trees are planted within the Site. Where trees are planted adjacent to waterbodies (such as the unnamed burn that flows along the southern border), suitable riparian species will be used. These will comprise locally native willows (including rarer species such as tea-leaved willow *Salix phylicifolia*, dark-leaved willow *Salix myrsinifolia*, and purple willow *Salix purpurea* where possible) and common alder *Alnus glutinosa*.
- Additional suitable tree and scrub species which will be used across the Site include:

¹ Any species listed in Annex B of the Developing with Nature Guidance (**Error! Reference source not found.**).

Environmental Aspect Construction Measures

- aspen *Populus tremula* (a priority species in Fife LBAP);
- blackthorn *Prunus spinosa*;
- elder *Sambucus nigra*;
- hairy dog rose *Rosa caesia* and/or soft downy rose *Rosa mollis* (if neither species can be sourced dog rose *Rosa canina* is also suitable);
- hawthorn;
- pedunculate oak *Quercus robur* and/or sessile oak *Quercus petraea*;
- rowan; and,
- wych elm.

Hedgerow Creation

- Continuous species-rich hedgerow will be created in a number of locations on the margins of the Site. Hedgerows will contain at least five native scrub species of as local provenance as possible, and certainly no INNS⁴. Suitable species listed for use in woodlands above are also suitable for use in hedgerows.

Grassland Creation

- The remainder of the Site not used for the permanent components of the Proposed Development will be sown to form neutral grassland using an appropriate seed mix containing native species and certainly not containing any INNS¹ (e.g. Scotia Seeds MG5 Meadow Mix). Owing to the enrichment of soil through agricultural activities, a species-rich meadow is unattainable.

Species-specific Mitigation Measures

Bats

- This impact assessment is carried out using assumptions in lieu of detailed survey. In reality, the impact and subsequent effects are most likely to be far smaller, but this assessment presents a reasonable worst-case scenario.

Environmental Aspect Construction Measures

- To inform mitigation and ensure legal compliance, appropriate survey for bats following guidance produced by the Bat Conservation Trust (BCT) (**Error! Reference source not found.**) will be carried out on all trees that will be impacted by the Proposed Development (through felling, lopping, or works within the root protection area). Survey may be required throughout the bat active season (May to September). Appropriate mitigation will be implemented according to survey results to mitigate against the loss of confirmed roosts as well as potential roost resource. Mitigation will align with CIEEM guidance (**Error! Reference source not found.**); e.g., if a confirmed noctule roost will be lost during construction, this will be compensated for with a like-for-like replacement (or better) prior to the roost being removed. Results of appropriate survey and subsequent proposed mitigation will be detailed in a Species Protection Plan that will be submitted to the relevant authorities for approval prior to construction commencing.
- No other specific mitigation is required for bats, with all other impacts expected to have negligible effect.

Otter

- The assumed layup will be monitored for use, although it is beyond 30 m of most works except tree planting when it is at risk of disturbance (**Error! Reference source not found.**). A licence will be sought from NatureScot to enable tree planting within 30 m of the layup, if it is confirmed to be used for resting purposes and at risk of being affected; to be determined through additional monitoring.
- All watercourse crossings will be constructed in line with SEPA guidance to maintain passage of otter and fish under most conditions. The final design details of watercourse crossings will be provided prior to commencement of works to SEPA for appropriate consultation.
- Works within 30 m of watercourses (e.g. works associated with watercourse crossings, construction of adjacent access roads and SuDS features, or erecting and dismantling of certain temporary masts) will take place during daylight hours only (no in-channel works will be carried out between 1 hour before sunset and 1 hour after sunrise).
- No other specific mitigation is required for otter, with all impacts expected to have negligible effect on this species.

Pine Marten and Red Squirrel

- If any pine marten dens or red squirrel dreys are identified within distances where they are vulnerable to disturbance from construction works (**Error! Reference source not found.**) during embedded pre-construction surveys, these must be carried out under licence to permit the potential disturbance of that ecological feature.
- No other specific mitigation is required for pine marten and red squirrel, with all impacts expected to have negligible effect on these species.

Badger

- The suspected badger sett will be monitored for use, though this is beyond the distance at which disturbance as a result of works activities is likely to occur and not likely to be subject to impacts, except in relation to tree planting.
- If the sett becomes active, or if other active setts are identified during embedded pre-construction surveys, a licence will be sought from NatureScot to enable works within 30 m.
- No other specific mitigation is required for badger, with all impacts expected to have negligible effect on this species.

Birds

- No specific mitigation is required for birds, with no impacts expected to have a significant effect on this group.
- However, site preparation including vegetation clearance will take place, as far as possible, outside the general breeding bird season (March to August, inclusive). Where vegetation must be cleared in the breeding season, the appointed ECoW will carry out nesting bird check(s) (as described in Section **Error! Reference source not found.:** **Error! Reference source not found.**) in advance of works and establish any exclusion zones as required.

Great crested newt

- eDNA surveys of Ponds 1, 2 and 8 will be carried out in the suitable survey window (mid-April-June) to confirm if great crested newts are present here prior to works commencing. If great crested newts are found to breed in any of these ponds, further mitigation is likely to be necessary. Although the risk of committing an offence is relatively low, the proximity to ponds to works justifies appropriate mitigation; more so if the baseline conditions change (e.g. short, grazed livestock pasture is left fallow). Mitigation may include seasonal restrictions (i.e. carrying out XL uprating and reconductoring works at Reconductoring Towers XL015 and XL016 during the hibernation period) or the use of
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exclusion fencing (note a derogation licence may be required depending on the mitigation implemented). Specific mitigation will be detailed in a method statement, or other suitable document, should this be required.

Eel

- eDNA survey will be carried out to confirm the presence/absence of eel in Canal Burn in advance of works commencing. If present the following additional mitigation will be implemented:
 - In-channel works will be scheduled to avoid crucial fish spawning/migration windows depending on what species are identified through eDNA (i.e. August-October and April-June, inclusive for eels).
 - Regardless of timings of works, a qualified aquatic ecologist will be employed to carry out fish rescue when the works areas along watercourses are initially dried. This will involve relocating eels from the from the works areas prior to drying and preventing them from re-entering until works are complete and the flow is returned. This will prevent mortality during construction.
- No other specific mitigation is required for eel, with all impacts expected to have negligible effect on this species.
- However, per Embedded Mitigation in Section **Error! Reference source not found.: Error! Reference source not found.**, all watercourse crossings will be constructed in line with SEPA guidance to maintain passage for otter and fish under most conditions. The final design details of watercourse crossings will be provided prior to commencement of works to SEPA.

Update Surveys for Protected Species and Species Protection Plan

- Currently, NatureScot considers pre-application survey data for relevant protected species present within the ZoI of the Proposed Development to be out-of-date after two years/two survey seasons (**Error! Reference source not found.**). Therefore, surveys to update the baseline would need considered if the planning application is delayed beyond the 2026 field season.
- If required, update surveys will cover protected species known (or assumed) to occur in the vicinity of proposed works, or for which there is a reasonable possibility of such species moving into this vicinity. This will comprise surveys for otter, water vole, beaver, red squirrel, pine marten, and badger. In addition, a GLTA of any trees which may be directly

Environmental Aspect	Construction Measures
	impacted (i.e. subject to lopping or felling) or located within 30 m of works with potential to cause disturbance to roosting bats, will also be conducted. These surveys will follow standard guidance and will take place within the survey buffers typically required by NatureScot (Error! Reference source not found.). - As described above, even where effects on protected species are predicted to be Not Significant, the refuges of these species, and often the animals themselves, are nevertheless subject to legal protection regardless of the importance of individual refuges or populations. As prescribed in Section Error! Reference source not found.: Error! Reference source not found., pre-commencement surveys for bats², otter, water vole, beaver, red squirrel, pine marten, badger, and great crested newt will be carried out as necessary to ensure compliance with legislation. Most of these surveys will be carried out no longer than three months prior to commencement of works, except for seasonally constrained surveys (e.g. great crested newt and water vole). - The results of these surveys will be detailed in a Species Protection Plan (SPP), which will also include the results of the surveys described in this chapter. The SPP will be submitted to the appointed construction contractor, Fife Council and Clackmannanshire Council. The SPP will provide detailed information on the measures which must be adopted during construction works to comply with relevant legislation and which are described in the remainder of this section.
	Hawkhill Road
Ecology	Habitat Retention/Reinstatement - The temporary access route from the west will be micro-sited to avoid the loss of reedbed SBL priority habitat. The area to avoid will be demarcated by the appointed ECoW using, for example, brightly coloured setting out flags and/or posts and rope. - All habitats affected by construction of the temporary access road, excluding arable fields and willow scrub, will be reinstated post-works. - These measures will be detailed clearly in the CEMP.

² Depending on the timing of further survey described in Species-specific Mitigation Measures above, pre-construction surveys may not be necessary for bats.

Environmental Aspect	Construction Measures
	Proposed Development
Landscape & Visual	No additional mitigation beyond the embedded mitigation measures
	Proposed Development
Cultural Heritage	• Prior to commencement of construction a programme of evaluation trenching will be carried out. This will be focused on areas of disturbance including the substation platform, permanent access road and drainage. The design of the evaluation trenching will be finalised in consultation with Fife Council's Archaeological Advisor with a trenching sample assumed to be approximately 3% sample. • Further mitigation, if required, would be based on the results of the evaluation trenching and will be agreed with the Fife Council. This may include, but not be limited to, archaeological monitoring, archaeological excavation, recording, and publication. It is anticipated that submission and implementation of a mitigation strategy (including the preparation of a Written Scheme of Investigation) will be included as a condition of any planning permission. • Archaeological evaluation trenching is not proposed for the minor works around new towers or any areas of stripping required for temporary scaffolding. These areas, however, might be subject to archaeological monitoring during stripping. All mitigation work will be agreed with the Fife Council and Clackmannanshire Council Archaeological Advisors. • While no significant effects resulting from the Operational Phase have been identified, careful design of the Substation, as well as landscaping and planting, could potentially limit the visual appearance of the Substation, thereby further limiting impacts.
	Proposed Development

Environmental Aspect	Construction Measures
Traffic and Transport	• A Construction Traffic Management Plan (CTMP) would operate throughout the duration of the construction programme. Appendix H of Technical Appendix 9.1: Traffic and Transport contains a draft CTMP. The detailed CTMP would include: – Site and the entry/exit arrangements from public roads. – Traffic routeing plans – defining the routes to be taken by HGVs to the Site avoiding sensitive locations. – Construction traffic hours and delivery times. – Strategy for traffic management and measures for informing construction traffic of local access routes, road restrictions (statutory limits: width, height, axle loading and gross weight), timing restrictions (if applicable) and where access is prohibited. – Measures to protect the public highway (e.g. wheel wash facilities); – Measures for the monitoring of the CTMP to ensure compliance from construction drivers and appropriate actions in the event of non-compliance. – Mechanism for responding to traffic management issues arising during the works (including concerns raised from the public) including a joint consultation approach with relevant road authorities. Hawkhill Road • Additional mitigation is proposed on Hawkhill Road which is currently a single track road with passing places and is signed as a walking and cycling friendly road and forms part of the National Cycle Network (Route 76). Hawkhill Road is proposed to form part of the access route for construction traffic associated with the Proposed Development. During the peak period of construction of Kincardine North Substation, there are significant environmental effects forecast on the route. • As mitigation, it is proposed to upgrade the passing places on Hawkhill Road. At present, passing places are informal and infrequent and the road is too narrow for two HGVs to pass one another at many of the existing passing places.

Environmental Aspect	Construction Measures
	Drawings of the proposed upgrades to the passing places on Hawkhill Road are contained within Technical Appendix 11.1. The upgraded passing places will allow safe and efficient two-way HGV movement on Hawkhill Road. It is also proposed to provide a segregated walking and cycling route running parallel to Hawkhill Road to the north. This will allow the route to remain a safe walking and cycling friendly road with pedestrians and cyclists separated from Proposed Development traffic. Drawings of the proposed route are contained within Technical Appendix 11.1. It is considered that the provision of a segregated walking and cycling route reduces the sensitivity of Hawkhill Road from Medium to Low.
	Proposed Development
Construction and Operational Noise	Threshold Values for the construction noise assessment at all receptors should not be exceeded during the construction works: 65dBLAeq 07:00 and 19:00 Monday to Friday and Saturdays 07:00 – 13:00; 55 dBLAeq 19:00 – 23:00 weekdays, 13:00 – 23:00 Saturdays and 07:00 – 23:00 Sundays; and 45 dBLAeq at all other times. - As a minimum the Contractor will follow best practice and guidance in BS 5228-1 with regard to mitigation of noise during construction. - Fixed and semi-fixed ancillary plant required during construction such as generators, compressors and pumps would be located away from the northern and eastern boundaries; - All plant used on site would be regularly maintained, paying particular attention to the integrity of silencers and acoustic enclosures; - All equipment would be shut down when not in use; - Prior to any piling works being undertaken, an assessment of piling techniques would be undertaken to ensure the least disturbing techniques are used as far as possible and identify any additional noise mitigation requires. A piling

Environmental Aspect	Construction Measures
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method statement would be provided to Fife and Clackmannanshire Council prior to commencement of piling works. Any piling works would be restricted to day time hours only;

- The loading and unloading of materials would take place away from residential properties, ideally in locations which are acoustically screened from nearby noise sensitive receptors;
- Materials would be handled with care and placed rather than dropped where possible. Drop heights of materials from lorries and other plant should be kept to a minimum;
- Modern plant would be selected which complies with the latest EC noise emission requirements. Electrical plant items (as opposed to diesel powered plant items) would be used wherever practicable. All major compressors would be low noise models fitted with properly lined and sealed acoustic covers. All ancillary pneumatic percussive tools would be fitted with mufflers or silencers of the type recommended by the manufacturers;
- Site operations and vehicle routes would be organised to minimise the need for reversing movements, and to take advantage of any natural acoustic screening present in the surrounding topography;
- No employees, subcontractors and persons employed on the site would cause unnecessary noise from their activities e.g. excessive 'revving' of vehicle engines, music from radios, shouting and general behaviour etc. All staff inductions at the site would include information on minimising noise and reminding them to be considerate of the nearby residents; and
- As far as practicable, noisier activities would be planned to take place during periods of the day which are generally considered to be less noise sensitive i.e. not particularly early or late in the day.
- Regular communication with the local community throughout the construction period would also serve to publicise the works schedule, giving notification to residents regarding periods when higher levels of noise may occur during specific operations, and providing lines of communication where complaints can be addressed. A communication plan would be included in the CEMP.

Proposed development

Environmental Aspect	Construction Measures
Water Environment	- During all phases of the Proposed Development, pollution prevention measures will be adopted, following SEPA Pollution Prevention Guidelines (PPG), General Binding Rules (GBRs) and Guidance on Pollution Prevention (GPP), including the following: - controls and contingency measures will be provided to manage run-off from construction areas and to manage sediment; - all oils, lubricants or other chemicals will be stored in an appropriate secure container in a suitable storage area, with spill kits provided at the storage location and at places across the Site; - in order to avoid pollution impacts to soils, vegetation and watercourses/waterbodies during construction, all refuelling and servicing of vehicles and plant will be carried out in a designated area which is bunded, has an impermeable base, and will be situated at least 50 m away from any watercourse; and, - where works in or on the banks of watercourses are required, for example to install or modify watercourse crossings, appropriate measures will be implemented to ensure a 'dry' working area and avoid pollution. - If dewatering is required onsite then water arising from dewatering operations will be treated prior to controlled discharge. This may include the construction of temporary 'construction' SuDS or the use of the elements of the permanent drainage scheme. - Concrete mixing and washing out would be avoided onsite where possible. Should it be required it will be undertaken at least 50m away from surface watercourses with appropriate bunding to prevent accidental spillage. - There will be no disposal of foul sewage on site during construction. All foul water will be discharged into a temporary toilet cabin. The tank will be regularly emptied and removed for off-site disposal by a licensed contractor. Welfare waste from the temporary construction compound and car park area will be taken off site and disposed of at an appropriate licensed facility. Construction Environmental Management Plan and Water Management Plan - All works on Site are to be undertaken in accordance with a Construction Environmental Management Plan (CEMP) for the Proposed Development, which shall be developed in the detailed design phase and refined for the consented

Environmental Aspect Construction Measures

project in advance construction, and then as necessary as construction progresses. It is assumed that both the CEMP and Water Management Plan (WMP) will be secured through the application of pre-commencement planning conditions on any successful planning application.

- Supporting the CEMP will be a WMP that provides greater detail with regards to the measures required to avoid, reduce and minimise adverse impacts on the water environment during construction. Like the CEMP, the WMP will be developed post consent and alongside detailed design and when the contractor(s) have been appointed. The WMP will also set out the scope of proposed water quality, flow and level monitoring of water features that are proposed, covering pre-construction, during construction, and post-construction phases.
- Mitigation measures will accord with legal compliance and be in keeping with good practice. Measures relevant to this assessment include those that:
 - Control and minimise the risk of pollution to surface waters and groundwater by managing construction site runoff and the risk of chemical spillages;
 - Control rates of discharge if required to ensure no unacceptable increase in flood risk;
 - Manage water removed from excavations to protect nearby water features from any pollution risk but also to support flows if there is a risk of reductions to baseflow; and
 - Avoid and minimise the risk of damage to physical form and processes of water features.

Management of Construction Site Run-Off

- Mitigation measures to manage run-off from construction areas will include:
 - Avoidance of wet weather working where practical, especially Site clearance, earthworks and works to water features.
 - Appropriate separate storage of topsoil/subsoil and materials, and at least 50 m from water features on flat ground, other than where works are necessary adjacent to water features in which case a Site / works-specific risk assessment would be carried out and additional measures added if required.

Environmental Aspect	Construction Measures
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| | <ul style="list-style-type: none">• Any earth bund/ stockpile to be present for longer than two weeks will be either seeded, covered using geotextiles, or other measures provided to ensure it is not a source of excessive fine sediment in runoff to water features.• The implementation of a temporary drainage system and other measures to manage pollution risk during construction (e.g., fabric silt fences, lagoons, bunds, straw bales, sandbags, lamella clarifiers or other proprietary measures etc. as may be required).• Any dewatering of excavations will include measures where necessary to filter the water prior to discharge to a watercourse or ground (there shall be no discharge of any construction site runoff to existing ponds).• The control of mud deposits at entry and exit points to the Proposed Development Site using wheel washing facilities and/ or road sweepers operating during earthworks or other times as considered necessary.• All plant will be kept clean but washed in dedicated areas only where runoff can be captured and appropriately treated prior to discharge from the Site to watercourse or ground. Any contaminated water that cannot be treated on Site will be collected and disposed of at a suitable licenced wastewater facility. |
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Management of Spillage Risk

- To prevent chemicals, fuels/oils and other such substances from entering the water environment, adequate measures to control the storage, handling and disposal of these substances will be put in place prior to and during construction. Mitigation measures to control of spillages and leaks during construction works will include:
 - Storage of fuel and chemicals would be in accordance with GPP 2: Above ground oil storage.
 - Surface water drains on local roads or within the Proposed Development Site will be identified by the contractor(s) and where there is a risk that fine particulates or chemical spillages could enter them, they would be protected (e.g. covers or sandbags).
 - Any containers/tanks of contaminating substances (e.g. fuel) on-site would be leak-proof and kept in a safe and secure building or compound from which they cannot leak, spill or be open to vandalism. The containers would be protected

Environmental Aspect	Construction Measures
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by temporary impermeable bunds (or drip trays for small containers) with a capacity of 110% of the maximum stored volume. Areas for transfer of contaminating substances (including refuelling areas) would be similarly protected.

- Any permanent oil storage tanks and temporary storage of 201 litres or more of oil in drums and mobile bowzers, and ancillary pipe work, valve, filters, sight gauges and equipment will have secondary containment (e.g. bunding or drip trays).
- No oil/chemical tanks will be stored within 50 m of a water feature and potentially further if ground is angled towards a water feature except for fixed/large plant associated with works that must occur close to water features or hand tools that must be placed in that location. Such chemical storage will be on flat, impermeable hard standing, and with an isolated drainage system.
- Care will be taken with the delivery and use of concrete and cement as these materials are highly corrosive and alkaline. No washing out of delivery vehicles to take place on the Proposed Development Site without suitable provision for the washing out water and provision of a suitable location (e.g. geotextile wrapped sealed skip, container or earth-bunded area) that is lined with a geotextile to prevent infiltration to ground. Such washing would not be allowed to flow into any drain or over the edge of a floating barge. The CEMP/ WMP would contain a methodology for dealing with any washing out water, or wheel wash. Wash/ wheel wash water would be adequately contained, prevented from entering any water feature, and either treated by an on-site Water Treatment Plant or removed from the Proposed Development Site for appropriate disposal at a suitably licensed waste facility.
- Where possible re-fuelling will be undertaken in designated areas within main compounds or satellite compounds. It is possible that refuelling of mobile plant may be required by mobile fuel bowser. This will not be undertaken within 50 m of a water feature, and only on flat land (or otherwise a greater distance and other measures may be required subject to an on-site / works-specific risk assessment) and with a drip tray/plant nappy. Certain semi-mobile very large plant (e.g. cranes) may need to be located close to watercourses and potentially within 50 m. Due to the difficulties in moving plant such as this they may need to be refuelled in situ. Again, a Site/works-specific risk assessment will need to be undertaken by the contractor.

Environmental Aspect	Construction Measures
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- Biodegradable hydraulic oils would be used where possible in all plant used during pre-construction and construction works, and only in plant and equipment working in or over water features.
- Spill kits and oil absorbent material will be available on the Site in watertight containers in compounds, areas of works, strategically near water receptors and carried on all mobile plant. They would be regularly checked and topped up, especially after use. Appropriate training would be given to all construction workers in their use and spillage response.
- The CEMP will include an Emergency Response Plan.
- Any plant, machinery or vehicles would be regularly inspected and maintained to ensure they are in good working order and clean for use in a sensitive environment. This maintenance is to take place off-site if possible or only at designated areas in the Site compounds.
- All fixed plant used on the Proposed Development to be self-bunded.
- Mobile plant to be in good working order, kept clean and always fitted with plant 'nappies'.
- The Proposed Development Site is to be secure to prevent any vandalism that could lead to a pollution incident.
- Construction waste/debris are to be prevented from entering any surface water drainage or water feature.

Management of Groundwater Activities

- To minimise the impact of any groundwater control activities during construction on the water receptors, the contractor will undertake works in accordance with good practice as described earlier, as well as a project specific CEMP and WMP. The mitigation options deployed by the contractor will be informed by the findings from the ground investigation which will provide information of Site-specific ground conditions, including groundwater quality and quantity data. As a minimum the contractor will adhere to the following mitigation measures:
- Groundwater control would be implemented to ensure water levels in adjacent water features are maintained and any discharge is of a suitable quality.

Environmental Aspect	Construction Measures
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| | <ul style="list-style-type: none">• If discharging water to a nearby watercourse, the rate of discharge will need to be agreed with the relevant authority to ensure that there is no unacceptable increase in flood risk or risk of scour. Any discharge will need to be undertaken with the agreement of the relevant statutory regulator and will need to comply with the pollution prevention requirements set out in the CEMP/WMP.• Managing the risk from groundwater flooding through appropriate working practices (during excavations) and with adequate plans and equipment in place for de-watering to ensure safe dry working environments.• Whilst no PWS are known within 1 km of the site boundary, it is still recommended that both local authorities are re-consulted to confirm any changes to known PWS prior to the commencement of any construction activities |
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Management of Hydromorphological Impacts

- As identified above, one of the towers intended as part of the Overhead Line Works is within SEPA's 50 m recommended buffer zone for excavations of KNW-04. To minimise risk, a dynamic approach is proposed whereby temporary 50 m buffers will be applied until it is necessary to undertake works that physically impact KNW-04. The application of buffer zones in combination with other measures is outlined in the CEMP.
- There will be two culvert upgrades required for access track crossings over KNW-07 and KNW-08, and it is expected that a new watercourse crossing will be installed on KNW-02. Any modifications to culverts will be designed to maintain connectivity and will be set below bed level to allow sedimentation and a naturalised bed to form. Such works will then be undertaken in a dry working environment, where possible, with flow temporarily over-pumped or flumed or isolated from the working area using sand/ pea gravel bags or other similar and inert barrier to avoid increased flow that may scour or erode the morphological features of the watercourse.
- Where open-cut crossing techniques are used, watercourses will be reinstated as found. A Pre-works Hydromorphological and Riparian Survey will be undertaken to provide the baseline against which reinstatement will be provided. Bank and bed sediments must be stored separately and in distinct layers as excavated on geotextile layers so they can be reinstated as found following completion of the works. The banks and the bed will need to be appropriately reprofiled with the inclusion of suitable geomorphic features with the aim to provide betterment on the original channel. Once the watercourses are reinstated, silt fences, geotextile matting or straw bales will be used

Environmental Aspect Construction Measures

initially to capture mobilised sediment until the watercourse has returned to a settled state. Regular observations of the watercourses will be undertaken post-works during vegetation re-establishment of the banks, to ensure that no adverse impacts have occurred.

Management of Flood Risk

- Whilst the risk of flooding within the KINN site is considered low, the management of changes in flood risk during temporary works will still be achieved by applying good practice mitigation measures and construction methods as described below.
- The proposed CEMP will detail measures to prevent an increase in flood risk during the construction works, in addition to the provision of temporary settlement and drainage measures already proposed.
- Construction works undertaken adjacent to watercourses will be done undertaken in using suitable methods informed by relevant guidance, including SEPA guidance documents.
- The CEMP will incorporate measures aimed at preventing an increase in flood risk during the construction works. Examples of measures that could be implemented include:
 - Construction materials will be stored outside areas of flood risk where feasible. If areas located within the functional floodplain are to be utilised for the storage of construction materials, this will be done in accordance with the applicable flood risk activity regulations, if required;
 - Connectivity will be maintained between the floodplain and the adjacent watercourses, with no changes in ground levels within the floodplain as far as practicable;
 - During the construction phase, the contractor will monitor weather forecasts on a monthly, weekly and daily basis, and plan works accordingly; and
 - The construction laydown area site office and supervisor will be notified of any potential flood occurring by use of the Floodline Warnings Direct or equivalent service.

Environmental Aspect	Construction Measures
	- The contractor will be required to produce an Emergency Response Plan prior to construction, which will provide details of the response to an impending flood. These actions will be hierarchical meaning that as the risk increases the contractor will implement more stringent protection measures and may include: - A 24-hour availability and ability to mobilise staff in the event of a flood warning; - The removal of all plant, machinery and material capable of being mobilised in a flood for the duration of any holiday close-down period where there is a forecast risk that the site may be flooded; - Details of the evacuation and site close-down procedures; and - Arrangements for removing any potentially hazardous material and anything capable of becoming entrained in floodwaters, from the temporary works areas. - Safe egress and exits are to be always maintained when working in excavations. When working in excavations, a banksman is to always be present. - Prior to any works being undertaken, Scottish Water and other third-party drainage assets will be identified following appropriate desk studies. Suitable construction method statements and mitigation will then be applied to avoid these assets or to undertake the works to minimise any risk to them.
	Proposed development
Ground Conditions	- Construction works will be undertaken in accordance with a Construction Environmental Management Plan (CEMP) that will describe the management arrangements for Proposed Development and the principles of mitigation that will be adopted. Embedded control and management measures comprise the following. <u>General Environmental Management</u> - Inductions and Training: All construction personnel to receive site-specific induction including environmental information. All personnel will be suitably trained on emergency procedures, including the use of spill kits. - Environmental Monitoring: Regular monitoring, auditing and reporting to ensure effective implementation of mitigation measures and environmental performance. A designated Site Environmental Manager will conduct

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regular checks of works areas, record environmental incidents and corrective measures, and monthly audits recording compliance with the CEMP and relevant environmental legislation.

- Spill Response: Spill kits will be available, and personnel will be trained in their use. In the event of a spill/leak the flow of pollution will be stopped (if safe to do so) using spill kits or other means to prevent the spill reaching watercourses. Spill kit contents will be checked weekly, and their contents replaced if used. Contaminated materials from spill kits will be disposed according to the Site Waste Management Plan (SWMP). The cause of any spill/ leak/ incident will be investigated and reported to prevent recurrence.
- Fuel Storage and Refuelling: All fuel will be stored within double-skinned bowsters, kept in a secure building. Refuelling areas will be on hardstanding to prevent infiltration to ground. Spill kits will be located at storage and refuelling areas. Refuelling lines will be fitted with automatic shutoffs. Only vehicles which do not regularly use public roads will be refuelled on site. Refuelling will only be undertaken by suitably trained personnel within designated areas. Plant nappies will be kept beneath stationary mechanical plant. Regular inspections will be undertaken, and plant removed offsite where maintenance is required.
- Non-fuel items, e.g., hydraulic oil, will be stored in appropriate labelled containers/bunded areas. Where possible, biodegradable oils will be used when working over watercourses.
- Storage of fuel and chemicals will be in accordance with GPP 2: Above ground oil storage.
- Any containers/tanks of contaminating substances (e.g. fuel) onsite will be leak-proof and kept in a safe and secure building or compound from which they cannot leak, spill or be open to vandalism. The containers will be protected by temporary impermeable bunds (or drip trays for small containers) with a capacity of 110% of the maximum stored volume. Areas for transfer of contaminating substances (including refuelling areas) will be similarly protected.
- Any permanent oil storage tanks and temporary storage of 201 litres or more of oil in drums and mobile bowsters, and ancillary pipe work, valve, filters, sight gauges and equipment will have secondary containment (e.g. bunding or drip trays).
- No oil/chemical tanks will be stored within 50 m of a water feature and potentially further if ground is angled towards a water feature except for fixed/large plant associated with works that must occur close to water features or hand tools

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that must be placed in that location. Such chemical storage will be on flat, impermeable hard standing, and with an isolated drainage system.

- Potential impacts specific to construction workers during site preparation and construction works would be controlled and mitigated by the following measures and through working in accordance with CIRIA C811:
 - measures to minimise dust generation,
 - provision of Personal Protective Equipment (“PPE”), such as gloves, barrier cream, overalls etc. to minimise direct contact with soils,
 - provision of adequate hygiene facilities and clean welfare facilities for all construction site workers,
 - monitoring of confined spaces for potential ground gas accumulations, restricting access to confined spaces, i.e., to suitably trained personnel only, and use of specialist PPE, where necessary, and
 - preparation and adoption of a site and task specific health and safety plan as is required under Health and Safety legislation.

Soil Management

In order to avoid or reduce adverse effects on soil a range of good site practice and management measures will be followed:

- Soil resources would be protected and conserved where possible through adherence to best practice guidance such as DEFRA’s 2009 ‘Construction Code of Practice for the Sustainable Use of Soils on Construction Sites’, Ref 10.12.
- Topsoil and subsoil movements will only be undertaken in suitable conditions, for example, avoiding extreme wet weather.
- Soils will not be placed beneath the water table or new contaminants introduced as this may represent a direct discharge of substances to groundwater.
- Soil stripping will be undertaken with care and will be restricted to as small a working area as practicable.
- Soil will be stripped using appropriate machinery (to prevent compaction) and stored in bunds adjacent to the area stripped/excavated to ensure the soil is returned to approximately the same area during reinstatement.

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- Excavated material will be stored separately to prevent mixing of topsoil and subsoil during construction.
- During reinstatement subsoil ripping will be undertaken to reduce potential compaction prior to topsoil replacement.
- Stockpiling of contaminated soil materials would be avoided where practicable. Soils are to be placed within suitable constructed bunded areas and covered to prevent migration of contaminants via rainwater run-off and leaching.

Where there is a requirement to dispose of surplus excavated materials off site as waste, the material will be characterised to determine firstly whether it is Hazardous or Non-Hazardous waste in accordance with the SEPA's (2018) Technical Guidance WM3 (Ref 10.13) and then once this is established, the appropriate disposal facility will be determined through Waste Acceptance Criteria analysis, as required.

Contaminated land

- Further ground investigation will be undertaken prior to construction to inform detailed design of the Proposed Development. This will also inform an assessment of the nature and extent of contaminated land present, the risks it poses to the environment and human health and design of appropriate mitigation and/or remediation. A mitigation/remediation strategy will be agreed with Fife Council and SEPA prior to the commencement of construction.
- A protocol will be developed setting out the steps for managing contamination encountered during the course of construction. A watching brief will be maintained in the absence of potential sources of contamination such as Made Ground, visual or olfactory evidence of hydrocarbons or other potential contaminants. Where areas of potentially contaminated ground and/ or water are encountered these will be sampled and undergo appropriate sampling and laboratory analysis.
- Subsequently a risk assessment will be undertaken to identify if these areas of potential contaminants pose a risk to construction workers and/or groundwater. Where appropriate a remediation strategy will be devised and agreed with Fife and/or Clackmannanshire Council prior to any remedial works.

Measures to prevent the creation of contaminant linkages include:

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- Risk assessments in accordance with the Health and Safety at Work Act to restrict exposure to potentially harmful substances to a safe level for construction workers. Personal Protective Equipment will be used as appropriate. Construction Design and Management (CDM) practices will be applied;
- Preparation and adoption of a site and task specific health and safety plan as is required under Health and Safety legislation;
- Dust suppression measures to reduce the generation of dust from excavated contaminated soils, for example impermeable covers spread over mounds of bare contaminated soil. Implementation of these measures can reduce the risk of effects to construction workers and adjacent site users from potentially contaminated dusts;
- Should contaminated material be identified that requires removal it will be disposed of appropriately. Material to be disposed offsite will be analysed to determine the appropriate waste classification and disposal location;
- In the event contaminated water (for example from dewatering) is encountered it may not be suitable for direct discharge to the water environment. Water may need to be treated prior to discharge or taken off-site for disposal;
- In the event contaminated soils are identified and material requires to be exported from site, vehicles carrying contaminated soils off-site will only be loaded to appropriate levels and be covered to prevent contaminated materials dropping onto roads; and

Any material imported to site, such as stone for access roads will be natural quarried stone or, if recycled, the material will undergo chemical testing. The suite of contaminants and site use criteria will be agreed with Fife and/or Clackmannanshire Council, in order to demonstrate that the material is suitable for use on site and does not pose a risk to construction workers or the environment.

Mining

In locations where micro-siting of towers is not sufficient to mitigate mining risk, localised treatment of mine entries or mine workings may be required. The treatment of the mine entries or workings by infill grouting can have an effect on a number of other receptors such as superficial deposits, hydrology, hydrogeology, and soils. Should the treatment of mine entries or

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	workings be required to facilitate the construction of the Proposed Development, additional mitigation measures will be required to ensure the control of grout. Mitigation measures as below would be implemented if required: ▪ Control grout run-off on the ground surface and prevent grout reaching agricultural soils, watercourses or causing contamination of groundwater ▪ Minimise disturbance to superficial deposits and agricultural soils during grouting by use of appropriate construction controls such as perimeter bunds, soil protection matting, silt traps and the like and best practice during drilling ▪ Prevent grout leaks into the surrounding environment below ground from mine workings or mine entries that are being infilled with grout ▪ Implement monitoring to detect displacement of mine gases and potentially contaminated mine waters • Where mine entry and / or mine workings treatment is required, SEPA shall be consulted to obtain their agreement with the proposals. The contractor shall comply with the guidance from SEPA including BRE (2009) (Ref 10.14). Additionally, SEPA's local team will have to be notified when the grouting works start, what works are involved and what watercourse / ditches they may affect. • The Mining Remediation Authority shall be consulted to obtain their agreement and permission to proceed with proposed works relating to the stabilisation of coal mine workings and mine entries.
	Proposed Development
Land Use, Tourism and Recreation	• Prior to and for the duration of construction a segregated temporary access will be established to the north of Hawkhill Road enabling pedestrians and cyclists to continue to safely use the Core Path and national cycleway while avoiding potential conflicts with construction traffic exiting the Proposed Development and traveling eastbound on Hawkhill Road.
	Proposed Development

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Air Quality	- Dust pollution from earthworks activities will be limited through the use of the following measures: - Topsoil will be stripped as close as reasonably practicable to the period of excavation or other earthworks activities to avoid risks associated with runoff or dust generation. - Stockpiles will be covered, seeded or fenced to prevent wind-whipping (generation of airborne dust through erosion). - Materials that have a potential to produce dust will be removed from site as soon as possible, unless being re-used on-site. - To minimise the impact from trackout of dirt and debris the following measures will be implemented: - a maximum speed limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas will applied; - dust sweeper(s) on the access road and along Hawkhill Road, to remove any material tracked out of the site. - vehicles entering and leaving sites will be sheeted/covered to prevent escape of materials during transport;
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14.3 References

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