Scottish & Southern Electricity Networks

TRANSMISSION

Glen Strathfarrar

Environmental Appraisal

November 2024

1. INTRODUCTION

1.1 Introduction

1.1.1 This report provides an Environmental Appraisal (EA) for the:

- removal of a section of existing overhead transmission line (OHL) and supporting steel lattice towers in Glen Strathfarrar, which falls within the Glen Affric to Strathconon Special Protection Area (SPA), Strathglass Complex Special Area of Conservation (SAC), Glen Strathfarrar Site of Special Scientific Interest (SSSI), and Glen Strathfarrar National Scenic Area (NSA);
- installation of a new section of underground cable (UGC) to replace the section of removed OHL;
- construction of a new cable sealing end (CSE) compound including a new terminal tower at the eastern end of Glen Strathfarrar;
- stringing of a new section of OHL to connect the existing OHL at T14 into the new CSE tower;
- construction of a permanent access track to provide access to the new CSE Compound;
- installation of a new section of UGC between the existing and proposed Deanie Substation; and
- associated temporary works to enable the decommissioning and construction process.

1.1.2 Herein the above is referred to as 'the proposed development'. This report has been prepared for Scottish and Southern Electricity Networks (herein referred to as 'SSEN Transmission'), to describe and appraise the potential environmental effects of the proposed development. Where required, the report also identifies the proposed measures that would be implemented during the construction and operation phases of the proposed development in order to manage and/or mitigate adverse environmental effects and ensure all legislative requirements are met.

1.1.3 This EA report has therefore been produced as a non-statutory appraisal to allow appropriate environmental management and mitigation measures to be identified.

1.2 Structure of the Report

1.2.1 The remainder of this report is structured as follows:

- **Chapter 2: Description of the proposed development**;
- **Chapter 3: Route Selection and Alternatives**;
- **Chapter 4: Environmental Appraisal** – which summarises the EA process;
- **Chapters 5 – 8** – contain the baseline information, appraisal of potential impacts and likely effects, and any management and mitigation measures regarding each of the following topics:
  - **Chapter 5: Landscape and Visual**;
  - **Chapter 6: Ecology and Ornithology**;
  - **Chapter 7: Cultural Heritage**;
  - **Chapter 8: Hydrology**; and
- **Chapter 9: Summary** – summarises the findings of the EA process and provides a schedule of mitigation commitments.

1.2.2 The following appendices support this report:

- **Appendix 2.1: Project Description Figures**;
- **Appendix 5.1: Landscape and Visual Appraisal (LVA) Methodology**;
- **Appendix 5.2: LVA Figures, Photographs and Photomontages**;
- **Appendix 6.1: Ecology and Ornithology Methodology and Results**;

- **Appendix 6.2: Confidential Ecology Results**;
- **Appendix 6.3: Habitats Regulations Appraisal and Appropriate Assessment**;
- **Appendix 6.4: Ecology and Ornithology Figures**;
- **Appendix 7.1: Gazetteer of Heritage Assets within the Inner Study Area (OHL and Cable Route)**;
- **Appendix 7.2: Tables of Mitigation Measures**;
- **Appendix 7.3: Cultural Heritage Figures**;
- **Appendix 8.1: Watercourse Crossing Assessment**;
- **Appendix 8.2: Hydrology Figure**;
- **Appendix 9.1: Outline Construction Environmental Management Plan**; and
- **Appendix 10.1: Outline Construction Traffic Management Plan**.

1.2.3 The following figures support this report:

- **Appendix 2.1: Project Description Figures**;
  - **Figure 1.1: Proposed Development**;
  - **Figure 2.1: Indicative Design for Steel Lattice Cable Sealing End Tower**;
- **Appendix 5.2: LVA Figures, Photographs and Photomontages**;
  - **Figure 5.1: Landscape Character Areas**;
  - **Figure 5.2: Landscape Designations and Classifications**;
  - **Figure 5.3: Visual Receptors, Viewpoint Locations and ZTV**;
  - **Figure 5.4: Viewpoint 01 – Near Deanie Lodge**;
  - **Figure 5.5a: Viewpoint 02a – Northern shore of Loch Beannacharan**;
  - **Figure 5.5b: Viewpoint 02b – Northern shore of Loch Beannacharan**;
  - **Figure 5.6: Viewpoint 03 – Lower slopes of Creag a Bhruic**;
- **Appendix 6.4: Ecology and Ornithology Figures**;
  - **Figure 6.1: Ecology Constraints**;
  - **Figure 6.2: Woodland Constraints**;
  - **Figure 6.3: Ornithology Constraints**;
  - **Figure 6.4: Habitat Survey Results**;
  - **Figure 6.5: Target Notes**;
  - **Figure 6.6: Target Notes – Confidential Results**;
  - **Figure 6.7: Groundwater Dependent Terrestrial Ecosystems**;
  - **Figure 6.8: Breeding Bird Survey**;
  - **Figure 6.9: Breeding Raptor Survey results**;
- **Appendix 7.3: Cultural Heritage Figure**;
  - **Figure 7.1: Cultural Heritage**;
- **Appendix 8.2: Hydrology Figure**; and
  - **Figure 8.1: Local Hydrology**.

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Development Context

2.1.1 The proposed development forms part of Project VISTA (Visual Impact of Scottish Transmission Assets); a fund made available by the Office of Gas and Electricity Markets (Ofgem) for electricity transmission owners to mitigate the impact of existing electricity infrastructure on the visual amenity of nationally designated landscapes. SSEN Transmission has identified a section of overhead line near Glen Strathfarrar as offering the opportunity to deliver visual impact enhancement, while meeting with the other core principles of Project VISTA; namely to limit adverse socioeconomic and environmental impacts and offer best value for money. The proposed development has also been deemed technically suitable from a networks operation perspective, ensuring that network reliability and security of supply will not be constrained if the proposed development is successful in obtaining regulatory funding from Ofgem.

2.1.2 The primary objective of Project VISTA is to use the Ofgem funding to deliver the maximum benefit for nationally designated landscapes in the north of Scotland transmission network. This will be achieved by delivering projects that offer significant reductions in visual impact, while avoiding unwanted economic and environmental impacts.

2.2 Proposed Development Description Overview

Overview

2.2.1 As shown on **Figure 1.1** (**Appendix 2.1**), the proposed development consists of:

- the decommissioning and removal of the existing OHL between Deanie Substation and Tower 13 (approximately 3.75 km of 132 kV and 33 kV OHL), alongside the decommissioning and removal of Towers 1 – 13;
- construction and operation of a CSE compound approximately 350 m east of Deanie Lodge;
- the construction and operation of a new terminal tower (Tower 13R) within the CSE compound;
- installation of one replacement section of OHL which would link the new Tower 13R to the existing Tower 14 (approximately 180 m in length);
- installation of one new section of UGC between the CSE compound and the proposed new Deanie Substation, approximately 3.75 km in total length for the 132 kV circuit OHL replacement;
- installation of one new section of UGC for the 33 kV circuit OHL replacement between the CSE compound and the existing Deanie Hydroelectric Power Station. Note, this section of the 33 kV cable will run in parallel to the 132 kV cable.
- access track and laydown / compound area to serve the proposed development.

2.2.2 The 132 kV UGC will connect into the proposed Deanie Substation, which is currently identified to be located approximately 400 m south-west of the existing substation near Tom a' Mhein hillock. The proposed Deanie substation is the subject of a separate planning application (Ref: 24/01235/FUL). The 33 kV UGC will spur off to tie into the existing Deanie Hydroelectric Power Station.

2.2.3 Associated with the proposed development, there will be a new section of UGC for the 11 kV circuit OHL between the existing and proposed Deanie Substation (approximately 500 m in total length). This forms part of the scope of Deanie Substation.

Limits of Deviation

2.2.4 The EA has been prepared based on the likely environmental effects of construction and operation of the proposed CSE compound, terminal tower arrangement, and UGC, with prescribed horizontal limits of deviation[1]

[1] Limit of Deviation, an area which defines the practical limits within which micro-siting of the OHL and UGC infrastructure can occur. The purpose of Limits of Deviation is to allow flexibility for the final micro-siting of individual tower/UGC/OHL to respond to localised ground conditions, topography, engineering and environmental constraints.

(LOD). This allows flexibility in the final siting of the individual infrastructure elements to reflect localised land, engineering and environmental constraints.

2.2.5 The horizontal LOD (easement) parameter specified allows the CSE compound and new terminal tower to be relocated up to 50 m from their proposed location and allows the cable alignment to be relocated 120 m (60 m either side) for the majority of the proposed alignment, where wider site conditions and topography pose a constraint. Due to engineering constraints, the cable alignment might be subject to minor amendments outside of the LOD following detailed design.

2.2.6 The horizontal LOD parameter specified for the new section of OHL between the new T13R and the existing T14 allows for 40 m (20 m either side) of the proposed alignment.

2.2.7 Any utilisation of the LOD would be evaluated against the environmental effects reported in the EA. Should the evaluation identify an adverse change to the environmental effects identified in the EA, consultation would be carried out with The Highland Council (and any relevant statutory consultee(s)) for approval of the proposed change.

Programme

2.2.8 The start date for the works is partly dependent upon the Ofgem programme for award of VISTA funding; however, assuming that the proposed development is successful in obtaining funding, it is currently intended that works would aim to commence in Summer 2025 and be completed in Summer 2026 (approximately 12 months).

2.3 Site Description

Location

2.3.1 The proposed development is located in Glen Strathfarrar approximately 40 km west of Inverness in the Scottish Highlands and is within The Highland Council local authority area as shown in **Figure 1.1**.

2.3.2 The existing OHL runs east through Glen Strathfarrar from the existing Deanie Substation near the western end of Loch Beannacharan, and ultimately terminating in Beauly. The section of line relevant to the proposed development runs between the existing Deanie Substation and Deanie Lodge at the eastern end of Loch Beannacharan, near the dam which forms part of the Affric-Beauly hydro-electric scheme.

2.3.3 The 33 kV and 132 kV UGCs proposed to replace the OHL would be installed together in a single trench up to the existing Deanie Substation, at which point the 33 kV UGC would deviate north to connect into the existing distribution network, while the 132 kV UGC would continue westwards to connect directly into the proposed Deanie Substation (which is the subject of a separate planning application). The CSE compound and new termination tower at the eastern end of the proposed development would allow the connection of the UGCs to the existing retained OHL at Tower 14. The proposed UGC alignment and indicative location of the CSE compound, terminal tower and proposed Deanie Substation are shown in **Figure 1.1** and described below:

- heading west to east the 132 kV UGC alignment would run north from the proposed Deanie Substation (which it will connect into) before turning and heading east, running south of the private access road and north of Loch Beannacharan for approximately 2 km. At Beanachran Wood the UGC crosses to the north of the private access road and runs for approximately 800 m before crossing to the south again and running east towards the CSE compound;
- the 33 kV UGC alignment connects into the existing distribution network just north of the existing Deanie Substation. From here it would run south to join the same route as described above for the 132 kV alignment; and
- at the eastern end of the UGC alignment, both the 132 kV and 33 kV UGCs would connect to the proposed CSE compound and transition to an OHL via the new terminal tower (Tower 13R) (also within the CSE compound). Tower 13R will replace the existing Tower 13 east of Deanie Lodge.

2.3.4 The final detailed design of the CSE compound and steel lattice termination tower is still in progress; however, for the purposes of the EA, the compound area is planned to not exceed a footprint of 45 m by 42 m (at its widest points) surrounded by a permanent fence. Tower 13R would be constructed within the compound and have a height of 28 m (+/- 3 m) and would be a similar height to the existing OHL towers.

2.3.5 A Type 1 permanent access track approximately 500 m in length would be constructed to provide access to Tower T13R and the CSE compound. The access track would leave the unnamed road approximately 85 m north of Loch Beannacharan, and head north for approximately 250 m before heading north-west for approximately 250 m towards Tower 13R and the CSE.

2.3.6 A local temporary construction laydown area 30 m x 100 m (maximum parameters) would be located to the south of the Glen Road approximately 350 m northwest of the Glen Strathfarrar Dam. Additionally, a separate, larger compound 65 m by 220 m is being proposed at the start of the Glen Road; approximately 6.25 km to the east of the Proposed Development to service a number of SSEN Transmission projects, including the Proposed Development. The larger compound will manage construction traffic into the glen.

2.3.7 The proposed development described above is shown in **Figure 1.1**, with the indicative design of the proposed Tower 13R shown in **Figure 2.1**.

Land Use and Designations

2.3.8 With respect to existing land use, the proposed development is located in an area with existing above-ground, electrical infrastructure. Existing land uses along the proposed UGC alignment consist predominantly of grazing and forestry; there is heather, bracken and grass with small areas of woodland, including areas of old Caledonian Forest. The UGC would pass beneath the private Glen Strathfarrar access road at a number of points. No tree felling is anticipated for the proposed development.

2.3.9 The area surrounding the proposed development falls within several environmental designations:

- the proposed development falls within the Glen Affric to Strathconon SPA designated for the presence of breeding Golden eagle *Aquila chrysaetos*;
- the proposed CSE compound, Tower 13R, associated access track and the existing Tower 14 fall within the Strathglass Complex SAC (designated for the presence of Northern Atlantic wet heaths, alpine and boreal heaths, sub-Arctic *Salix spp.* scrub, blanket bog and Caledonian forest) and the Glen Strathfarrar SSSI (designated for its breeding bird assemblage, dragonfly assemblage, lichen assemblage and native pinewood); and
- the majority of the proposed development is located within the Glen Strathfarrar NSA.

2.3.10 The proposed CSE compound and Tower 13R are located approximately 380 m north of the River Farrar, and approximately 200 m east of the East Deanie Burn (a larger tributary of the River Farrar). The UGC would be located along the banks of Loch Beannacharan and would cross several small watercourses which discharge into the loch from the north as shown in **Figure 1.1**.

2.3.11 The surrounding area is sparsely populated but there are a small number of properties in close proximity to the proposed development. The nearest affected properties, Deanie Lodge and Deanie Cottage (both currently uninhabited) are located approximately 160 m north of the existing Tower 12. Benachran Lodge is located approximately 100 m north of the UGC route, and 950 m east of the proposed Deanie Substation at the western end of the proposed development, and Cambussorray is located approximately 560 m south-east of proposed Deanie Substation.

2.3.12 There are no landscapes or sites of historical, cultural or archaeological significance likely to be affected by the proposed development, with there being no Scheduled Monuments, Listed Buildings, Conservation Areas, Inventory Garden and Designed Landscapes or Inventory Historic Battlefields within 2 km.

2.4 Construction Methodology

Overview and Programme

2.4.1 The construction process for the works is expected to comprise the following key stages:

Enabling Works

- Site preparation, including any required vegetation removal;
- Installation of temporary and permanent access tracks, laydown areas and construction compound. These would be identified by SSEN Transmission, who would also seek the appropriate environmental approvals. The temporary construction compound would be used to provide office accommodation and welfare facilities for staff involved with the project. The compound would provide a safe area for parking away from the public highway, as well as for the temporary storage of materials, plant and equipment. Should the Principal Contractor want to deviate from the areas identified by SSEN Transmission, they would seek separate consents / permissions; and
- Site setup, including the installation of temporary crane pads for the replacement CSE tower in the east, temporary site compound, laydown area, offices, and welfare facilities.

Phase 1

- Excavation of UGC alignment sections. The cable alignment would be split into sections to allow multiple short sections of excavations to be open;
- Horizontal directional drilling (HDD) for cable installation where access is limited by the steep slope and Loch Beannacharan;
- Installation of cable ducts, including geotextile wrap, sand fill and general backfilling;
- Cable pulling and jointing;
- Excavations for CSE compound foundations and installation of the platform, walkways, equipment and fencing;
- Installation of foundations for, and erection of Tower 13R to replace Tower 13;
- Excavation of stone for access track to the new CSE compound; and
- Reinstatement of track edge with topsoil.

Phase 2

- Link the 132 kV and 33 kV UGC to the proposed CSE compound and Tower 13R;
- Install new OHL span to link Tower 13R to Tower 14;
- Link the 132 kV to the proposed Deanie Substation;
- Link the 33 kV UGC to the existing distribution network;
- Energise new UGC routes; and
- Decommissioning and removal of Towers 1 – 13, as well as associated OHL and redundant equipment.

Site Restoration

- Removal of temporary access tracks and infrastructure, and site reinstatement / restoration.

2.4.2 It is anticipated that the construction phase would last for approximately 12 months. Construction working would be during daytime only. The expected working hours during the construction phase would be generally as outlined in **Table 2.1**. Refer to **Section 2.8** for additional constraints to working hours relating to working within close proximity to Ornithological Constraints.

Table 2.1 Construction Working Hours

Day	Hours
Monday - Friday	08:00 – 19:00
Saturday	08:00 – 13:00
Sunday	No working

2.4.3 Any out of hours working would be agreed in advance with The Highland Council. Weekend working would be carefully planned to minimise construction traffic, and areas of weekend work would be restricted to those which have the least impact on the local community and general public.

Site Clearance

2.4.4 Where required, to establish safe working areas for construction, vegetation would be cleared. As most of the land cover is agricultural, it is expected that relatively little vegetation clearance would be required. Tree felling is not anticipated as the cable alignment would follow the open banks of Loch Beannacharan.

Access Track Upgrade / Installation

2.4.5 Access to the proposed development would be along the private Glen Strathfarrar access road from the A831. Temporary access tracks may be required along the UGC alignment to enable access for cable installation, and along the existing OHL alignment to enable access for plant to dismantle the existing towers. Where required, it is expected that access to the existing OHL would be formed using temporary track mats, although it may be feasible to drive on the ground directly where only limited access is required and depending upon ground conditions. With the exception of the access track to the proposed CSE compound and Tower 13R it is expected that all other proposed new access tracks would be removed at the end of construction.

2.4.6 It is anticipated that the permanent access track to the proposed CSE compound and Tower 13R would be 5.5 m wide and a minimum of 250 mm thick; however, this would vary depending on the strength of the in-situ material below. Stone required for the formation of permanent access tracks would be imported by vehicle and no borrow pits are proposed.

Cable Installation

2.4.7 Whilst the final cable installation method would be determined by the Principal Contractor selected to undertake the works, for the purposes of this EA it has been assumed that an open cable trench method (see **Plate 2.1** for an example) would be used for the majority of the proposed alignment, because this represents a worst-case scenario in terms of the area of ground disturbed. This method involves the construction of a temporary haul road (surfaced with crushed aggregate hardcore materials, to allow construction plant to access the alignment), excavation of an UGC trench, a soil stockpile to temporarily store subsoil and topsoil, and three temporary drainage ditches (one on either side of the easement and one adjacent to the soil stockpiles).

2.4.8 The easement (i.e. area required for cable installation) is expected to be:

- 120 m wide (60 m either side of the UGC) on the proposed UGC alignments; and

2.4.9 Generally, for the instances where the UGC crosses the private Glen Strathfarrar access road, an open cable trench would be cut across the roadway, with the exception of one crossing (as referred below).

2.4.10 HDD has been proposed for a short length of the UGC alignment starting around 1.3 km south-west of the Tower 13R, and extending approximately 500-600 m west depending on final geotechnical investigations. The proposed UGC route falls between Loch Beannacharan and the existing OHL which is positioned on a slope that exceeds 20 degrees in some places. This results in a very narrow corridor for the proposed cable route; HDD has therefore been recommended as the optimal solution to avoid accessing the steep slope and/or working within the loch. Ground disturbance will be limited to the launch and reception pits at either end of the HDD route.

2.4.11 Once construction is complete, the new UGC alignment would need to be kept clear of new tree growth as tree roots cannot be allowed to interact with the cables. Also, should fault-finding be required during the operational period, the easement would need to be clear for ease of access. Therefore, the area which would have been temporarily disturbed during construction would be backfilled with the excavated subsoil and topsoil, seeded with either a grass mix or other seed mix requested by the landowner (e.g. on agricultural land) or another appropriate seed mix recommended by the landscape architect in consultation with an Ecological Clerk of Works (ECoW) (see **Section 5**) and a width of 10 m maintained clear of trees to allow for future access for fault finding and to prevent root damage to the cable.

Plate 2.1: Example of Typical Cable Trench Excavation

Watercourse Crossings

2.4.12 A number of watercourses that discharge into Loch Beannacharan would be crossed by the UGC. During construction, culverts would allow the temporary haul road to pass over smaller watercourses. For the UGC, smaller watercourses and field drains would be crossed by excavating a trench whilst the channel is dry using cofferdams with bypass pumps. The UGC would also pass beneath three small watercourses along the HDD route; however, these would be unaffected due to the depth of the bore.

Cable Sealing End Compound and Termination Tower

2.4.13 At the eastern end of the proposed cable alignment, the existing Tower 13 would be removed and replaced with Tower 13R and the proposed CSE compound (at approximately NGR NH 32400 39800). A new OHL span to link Tower 13R to the existing Tower 14 would be constructed and operated. The proposed location and indicative design of the termination tower is shown in **Figure 1.1** and **Figure 2.1** respectively. **Plate 2.2** shows an example of a CSE tower.

2.4.14 The detailed design of the CSE compound and Tower 13R is still in progress; however, for the purposes of the EA, it is assumed the CSE compound would be approximately 50 m x 50 m. The compound would contain the 132 kV and 33 kV combined CSE, surge arrestors and post insulators, anchor block and Tower 13R. The compound would be bound by a permanent boundary fence and there would be a temporary access track to the compound (approximately 6 m in width).

2.4.15 Tower 13R would be approximately 30 m (+/- 3 m) in height from ground level and supported by below-ground foundations at each tower leg. Foundations may take the form of a reinforced concrete pad and column design, raft foundation, single or grouped piled foundations or rock anchor foundations. For the purposes of this EA, it is assumed that foundations would be of concrete pads and column design, as this is considered to represent a reasonable worst case on the basis that these conventional foundations require the greatest amount of ground disturbance during installation.

2.4.16 For the purposes of this EA, it has been assumed that the construction of Tower 13R would require a temporary equipotential zone of 18 m x 36 m (which is 1.5 multiplied by tower height meters away) from the structure; the exact foundation dimensions are subject to soil type and ground conditions. The working areas around the tower would be designed to avoid soil stripping, storage and other construction activities that have the potential to cause pollution within 10 m of sensitive watercourses or waterbodies.

2.4.17 Construction sites for the tower would be fenced as appropriate ahead of construction commencing. Fencing would be temporary and in place for the duration of construction. Preparation work would include soil stripping and storage, and creation of stone working platforms around the foundations. Foundation types and designs for the tower would be confirmed following detailed geotechnical investigation at the tower position.

Plate 2.2: Cable Sealing End Tower Example

Decommissioning of OHL

2.4.18 Following installation and commissioning of the proposed development, the existing OHL would be dismantled. This would include the removal of approximately 3.75 km of 132 kV and 33 kV double circuit OHL, and towers from Tower 1 to Tower 13 inclusive.

2.4.19 The decommissioning would require removal of the existing conductors, which would be pulled by a winch onto a cable drum. A number of cable pulling stations may be required to be set up on angle towers. Following removal of the conductor, the insulators would be removed, the tower legs cut using hand tools, and then the tower pulled over onto the ground in a controlled manner. The towers would be cut up on the ground into small sections and then removed either by road or air depending on the time of year. No air lifts would be carried out within 1 km of the golden eagle eyries between February-October, and works should only occur between 9 am and 4 pm, minimising disturbance during the breeding season and year-round.

2.4.20 The existing concrete foundations would be removed to between 0.5 m and 1.0 m below ground level and the concrete taken off-site. The removal depth has been selected based on the sensitive nature of the environment and consideration of the towers being located on a remote hillside, which is unlikely to be regularly frequented or farmed with deep cut machinery. This option also minimises access route requirements for getting the required plant to the tower locations and also to minimise damage to the landscape. The range proposed would keep the removal within the column part of the foundations and avoid the wider pyramid base. which would make the removal process more straightforward and less intrusive.

2.4.21 Once the existing OHL has been removed, the land formerly covered by the OHL operational corridor would be returned to the landowner and the land left for them to manage as they choose (subject to restrictions related to the proposed UGC and CSE structures).

2.5 Decommissioning

2.5.1 The design life of the proposed development is 45-60 years. At the end of that period, a decision would be made by the network operator to either replace or decommission the cable. Any replacement infrastructure would be subject to the consents and associated EAs required at that time. If the decision is taken to decommission the cable, then an assessment would be made as to whether to leave the cable and CSE compound and termination tower infrastructure in-situ, or to remove it. It is considered that decommissioning effects will be similar to the construction effects.

2.6 Traffic

Vehicle Types and Sources

2.6.1 Abnormal loads with regards to vehicle weight (over 44 tonnes) would be required to access the proposed development during construction. These vehicles include low loaders when loaded with construction equipment and the mobile cranes required for the assembly of Tower 13R at the CSE compound. **Table 2.2** below outlines the heavy goods vehicle (HGV) types anticipated to utilise public roads during construction.

Table 2.2 HGV Vehicle Types

Description	Activity
Tipper Lorries	Used on-site for construction and removal of haul roads.
Hiab Wagon	Used for transferring materials from storage compounds to where they are required for the works.
Cable Carriage and Tractor	Used to carry cable drums to pull locations.
Articulated Vehicles (normal)	Used to deliver materials to the construction compounds.
Articulated Vehicles (low loader)	Used to deliver and collect site machinery such as excavators, telehandlers as necessary. Site machinery would move under its own power to suitable loading and offloading locations.
Mobile Crane	Used for erecting CSE tower.
Specialist HDD Rig (Articulated Vehicle)	Specialist drilling rig for HDD elements.

2.6.2 The loads would likely be transported into the area via the A831 and Glen Strathfarrar private access road; however, dedicated temporary access tracks may be required. These loads would be imported using standard articulated or rigid vehicles and would be imported to a site compound nearest to the location where they are to be used. These materials may be transferred between the compounds and the working area using Hiab Wagons.

2.6.3 As no borrow pits are proposed, stone for the construction of haul roads and crane pads, ready mixed concrete and tarmac would be locally sourced.

2.6.4 General construction materials, servicing of the contractor's facilities and construction equipment would be locally sourced and delivered to site using small vehicles. These vehicles would be encouraged to use the preferred routes (as would be identified in a Construction Traffic Management Plan (CTMP)), but this may not be possible at all times as the journeys may not commence at suitable locations.

Traffic Management and Mitigation

Construction Traffic Management Plan

2.6.5 Where possible, arrangements would be made for car sharing for staff journeys to site. A CTMP would be prepared by the appointed Principal Contractor which would include other construction activities taking place in the area, in order to manage the potential impacts of construction related vehicle movements on the local road network, including identifying construction compound locations; road crossings for the UGC construction works; and potential requirements for public road improvements (e.g. bell mouth widening) and/or temporary traffic management. An Outline CTMP is included in **Appendix 10.1** and would be developed into a final version by the Principal Contractor.

Driver Communication

2.6.6 All vehicles directly owned by SSEN Transmission or the main contractor would have a communications system installed that would be legal to use while the vehicle is in motion. The communications system would be used to advise drivers of any issues on the road network or on-site, allowing them to re-route as necessary, adjust driving speed or adjust destination. The communications system would also be used by drivers to report issues, and to call for immediate assistance if required.

Passing Places

2.6.7 The primary access would be along the privately owned single-track Glen Strathfarrar Road. If required, passing places would be constructed along this road in advance of the works commencing. The location and size of each passing place would be determined, and necessary consents / planning permission / permits obtained by the Principal Contractor from landowner and The Highland Council roads department. During the construction works, the access routes would be monitored for damage caused by the indiscriminate passing of vehicles. Where considered necessary, additional passing places would be provided in these locations.

2.6.8 Passing places would not be used by drivers of construction vehicles as a place to wait or as a place to park. Local residents would be able to report any instances of inappropriate driving or use of passing places to the project community liaison officer.

Access Improvements

2.6.9 If required, existing and new access routes would be improved to double gate access bell mouth layouts. Where required, visibility would be improved or provided at the access points, appropriate for the nature and speed of the road. The Principal Contractor would obtain all necessary consents / planning permission / permits from the landowner and planning / roads authority and agree individual traffic management plans before works commence.

Wheel Washing

2.6.10 In order to reduce mud and debris being deposited on the road network, wheel washing facilities would be provided at all accesses where vehicles could exit onto the public road (A831) or the private Glen Strathfarrar Road. The minimum provision would be a brush and a water supply. Where considered necessary, the roads adjacent to the site access points would be kept clean by utilising a mechanical road sweeper. Residents would be able to report any instances of mud being carried onto the private road or public highway to the project community liaison officer.

Speed Limit

2.6.11 A maximum 15 mph speed limit would be imposed for all construction traffic on private roads and tracks, which would be reinforced through temporary construction traffic speed limit signs. Along public roads, national speed limits or signed speed limits (whichever is lower) would apply. Local residents would be able to report any instances of speeding on the public highways to the project community liaison officer.

Signage

2.6.12 Temporary construction site signage would be erected on the local road network and private access track in the vicinity of each of the proposed construction accesses, and at other locations as considered necessary, to warn people of construction activities and associated construction vehicles. The purpose of such signage is to provide driver information and to maintain road safety along the construction vehicle route. The exact nature and location of the signage would be agreed with the landowners and roads authority prior to construction activity on-site.

Public Information / Community Liaison

2.6.13 Information on the project would be distributed using a variety of methods including the project website, local newsletters, public notices and public meetings by the project community liaison officer. A construction liaison committee comprising of the project community liaison officer would meet periodically to provide updates on the construction programme, vehicle movements and public road improvements. Representatives from SSEN Transmission and the construction contractor would attend. Contact details for key project staff would be provided to the community in order for any complaints or information requests to be reviewed and actioned.

Protecting Pedestrians and Vulnerable Road Users

2.6.14 Public access safety advice signage would be installed at all access points from the public road network and along the private Glen Strathfarrar Road. All excavations would be surrounded by barriers. All construction works would be undertaken with strict adherence to the current Construction (Design Management) (CDM) regulations.

Public Rights of Way

2.6.15 The alignment of the proposed UGC and associated access tracks would cross the Inverness and Nairn Core Path IN26.01 Glen Strathfarrar Road. Wider access rights and other recreational routes also apply on routes in the area surrounding the proposed development. The CTMP to be produced by the Principal Contractor would describe how public access would be maintained and managed during construction.

Road Condition Surveys

2.6.16 The route that would be used by construction traffic would initially be an ‘A’ class trunk road regularly used by heavy vehicles but would then be along a private access road to which SSEN Transmission has been granted access. Intensifying the use of this road by heavy construction vehicles could lead to some deterioration of the road pavement, which cannot be determined in advance. SSEN Transmission would therefore undertake a road condition survey in conjunction with the roads authority and/or private track owners prior to commencing works on-site; this survey would identify any visually apparent defects with the road pavement and would be used as a baseline for any future surveys.

2.6.17 During the construction of the UGC and decommissioning of the OHL, weekly inspections would be undertaken of roads used during the previous week, and repairs to the road pavement would be undertaken if damage is identified and agreed to be as a result of the construction works. Upon completion of the works in any area, a final road condition survey would be undertaken in conjunction with the roads authority and/or private track owners. Defects would be recorded for comparison with the initial survey. Where deterioration of the road pavement can be agreed as a result of the construction works, SSEN Transmission would arrange for a repair to be undertaken.

2.7 Waste

2.7.1 Waste generated during the installation of the proposed UGC, CSE compound and Tower 13R, and decommissioning of the existing OHL, would be the responsibility of the construction contractor to manage. Wastes from the cable installation are expected to consist primarily of packaging and transport materials for the cable (e.g. plastic wrapping, wooden pallets and cable drums), consumables associated with construction plant (e.g. waste oils and associated containers) and consumables associated with the construction workforce and any

site offices (e.g. sanitary wastes, office waste, food waste). A further waste stream associated with the decommissioning of the existing OHL would include the felled steel lattice towers, circuit cables and other parts of the towers (e.g. glass insulators and concrete foundations).

2.7.2 It is anticipated that all wastes would be taken from individual work sites to the main construction laydown area for segregation and temporary storage before being removed by an appropriately licenced waste contractor for recycling, treatment or disposal.

2.8 Noise

2.8.1 Construction and decommissioning noise would be controlled in accordance with the British Standard (BS) 5228-1: 2009+A1:2014 'Noise', (hereafter referred to as BS5228).

2.8.2 BS5228 provides appropriate guidance on practical noise control. Part 1 provides recommendations for basic methods of noise and vibration control including sections on community relations, training, occupational noise effects, neighbourhood nuisance and project supervision. The annexes provide information on noise sources, mitigation measures and their effectiveness.

2.8.3 Once a main contractor is appointed, careful consideration would be given to the type of plant to be used for each phase of construction. Contractors would inform the residents in advance of any particularly noisy activities and ensure any disruption is kept to a minimum.

2.8.4 Good site practices can be implemented to minimise the potential effects. Section 8 of BS5228 recommends a number of simple control measures, as summarised below.

2.8.5 As stated above, it is proposed that construction and decommissioning activities on-site shall only take place between the hours of 08:00 to 19:00 on Monday to Friday inclusive and 08:00 to 13:00 on Saturday with no construction works on site on Sundays or Bank Holidays. Additional restrictions resulting from the presence of eagles are set out below. The Principal Contractor would:

- keep local residents informed of the proposed working schedule, where appropriate, including the times and duration of any abnormally noisy activity;
- ensure site work continuing throughout 24 hours of a day shall be programmed, when appropriate, so that haulage vehicles would not arrive at or leave the site between 19.00 and 07.00 hours, with the exception of abnormal loads that would be scheduled to avoid significant traffic flows;
- ensure all vehicles and mechanical plant would be fitted with effective exhaust silencers and 'smart' reversing alarms and be subject to programmed maintenance;
- select inherently quiet plant where appropriate - all major compressors would be 'sound reduced' models fitted with properly lined and sealed acoustic covers, which would be kept closed whenever the machines are in use;
- review the options to utilise close boarded fencing as acoustic screens whenever works are in close proximity to dwellings;
- ensure all ancillary pneumatic percussive tools would be fitted with mufflers or silencers of the type recommended by the manufacturers;
- instruct that machines would be shut down between work periods or throttled down to a minimum;
- ensure regular maintenance of all equipment used on-site, including maintenance related to noise emissions;
- ensure that vehicles are loaded carefully to ensure minimal drop heights so as to minimise noise during this operation;

- ensure all ancillary plant such as generators and pumps would be positioned so as to cause minimum noise disturbance and if necessary, temporary acoustic screens or enclosures should be provided; and
- follow additional work hour restrictions to prevent disturbance to golden eagles as detailed in **Section 6.5**. Works would take place outside the periods of breeding activity for golden eagle (February to October) to prevent disturbance during breeding and fledging, where the works are within 1 km of the eyrie (eagle nest site). Works with the potential to cause significant disturbance would not occur before 9:00 or after 16:00 to prevent disturbing eagles which are roosting on the surrounding Crags. This applies throughout the year, within 1 km of the eyrie. Refer to **Confidential Technical Appendix 6.3: HRA (Annex 1)** for further details.

2.9 Construction Environmental Management

2.9.1 **Appendix 9.1: Outline Construction Environmental Management Plan** provides a high-level framework for a Construction Environmental Management Plan (CEMP). The CEMP will outline the environmental management and construction methods to be employed during construction of the proposed development, including the decommissioning of the existing OHL.

2.9.2 This draft outline document would be updated with detailed information and finalised prior to commencement of construction, in consultation with the relevant authorities and, where applicable, taking account of any approved plans and planning conditions (if planning consent is required). The appointed contractor(s) would prepare detailed method statements which would be incorporated into the final CEMP.

2.9.3 The requirement to produce a CEMP would form part of the contract for the construction works for the proposed development. The management measures, method statements and referenced good practice guidance and legislation would form the basis of the detailed design to be prepared by the Principal Contractor.

2.9.4 The CEMP would provide a schedule of mitigation commitments made in the EA report (see **Section 9**).

2.9.5 The CEMP would also:

- maintain a schedule of any commitments required to be followed by the construction contractor;
- set out the requirements for recording and reporting all aspects of environmental management;
- set out the programme of environmental audits, including audits of sub-contractors to be undertaken by the contractor, on a quarterly basis (as a minimum) and provides an audit report within two weeks of the audit being undertaken (the contractor would develop a template for completing and reporting audits for the agreement of the employer prior to the commencement of site works);
- provide an Ecological Management Plan (EMP), agreed with the planning authority, to include all measures required to protect ecology at the site and ensure compliance with relevant nature conservation and wildlife protection legislation;
- specify requirement for visual inspection of surface water courses to be undertaken on discharge waters during the construction phase to assess and manage the performance of the drainage system; and
- be developed in accordance with SSEN Transmission's Species Protection Plans (SPPs).

2.9.6 An appropriately qualified ECoW / Site Environment Manager would be appointed with the responsibility of monitoring and reporting on CEMP compliance (and updating in consultation with relevant authority as appropriate). The CEMP would confirm the roles, responsibilities and communication routes for environmental management during the works. The plan would make reference to or incorporate communication protocols for use during an environmental emergency or incident.

3. ROUTE SELECTION AND ALTERNATIVES

3.1 Project VISTA Context

Policy

3.1.1 The proposed development forms part of Project VISTA, introduced in **Section 2.1**. VISTA is an initiative promoted by SSEN Transmission to assess the visual impact of existing electricity infrastructure on National Parks and National Scenic Areas (NSAs) within the SSEN Transmission network area. The overall aim of VISTA is to identify the most effective mitigation proposals for which funding can be sought from the electricity industry regulator Ofgem to further enhance designated landscapes by reducing the visual impact of existing overhead electricity transmission lines and substations.

VISTA Project Identification

3.1.2 In order to screen, assess and define candidate projects for further, more detailed review, SSEN Transmission developed the following approach for Project VISTA. This has enabled step by step, evidence led and stakeholder informed decision making:

- Identification of designated areas affected by SSEN Transmission infrastructure in Scotland. Locations to be considered are National Parks and NSAs, including areas in close proximity to their boundaries, where infrastructure may affect the special qualities of the designated areas;
- Development of a clear and transparent approach based on standard assessment process to enable SSEN Transmission to identify impacts and any proposed mitigation effectively;
- Meeting with representatives from stakeholders to collect information on selected regions, their qualities and unique features;
- Consideration of the wider group of visual receptors affected by their proximity to transmission infrastructure;
- Evaluation of the landscape and visual impact that existing SSEN Transmission infrastructure has on affected landscapes and those viewing the landscape within, or looking towards, these designated areas;
- Prioritisation of the areas where infrastructure has the greatest landscape and visual impacts, but which also have potential to benefit significantly from any proposed mitigation; and
- Preparation of a final report summarising the outcomes of assessments and consultation, balancing visual benefit with technical requirements and cost efficiencies of each project and recommendations for projects that could be progressed for detailed design and funding request submission. The report would include maps and photographs supporting the final recommendations.

3.1.3 SSEN Transmission has developed a methodology that assisted with assessment of the nature of landscape and visual impacts of transmission infrastructure on areas within National Parks and NSAs. An established approach was developed in accordance with the Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA3), using clearly defined terminology which is familiar and understood by stakeholders and landscape professionals, but taking account of the fact that infrastructure is already existing within the landscape.

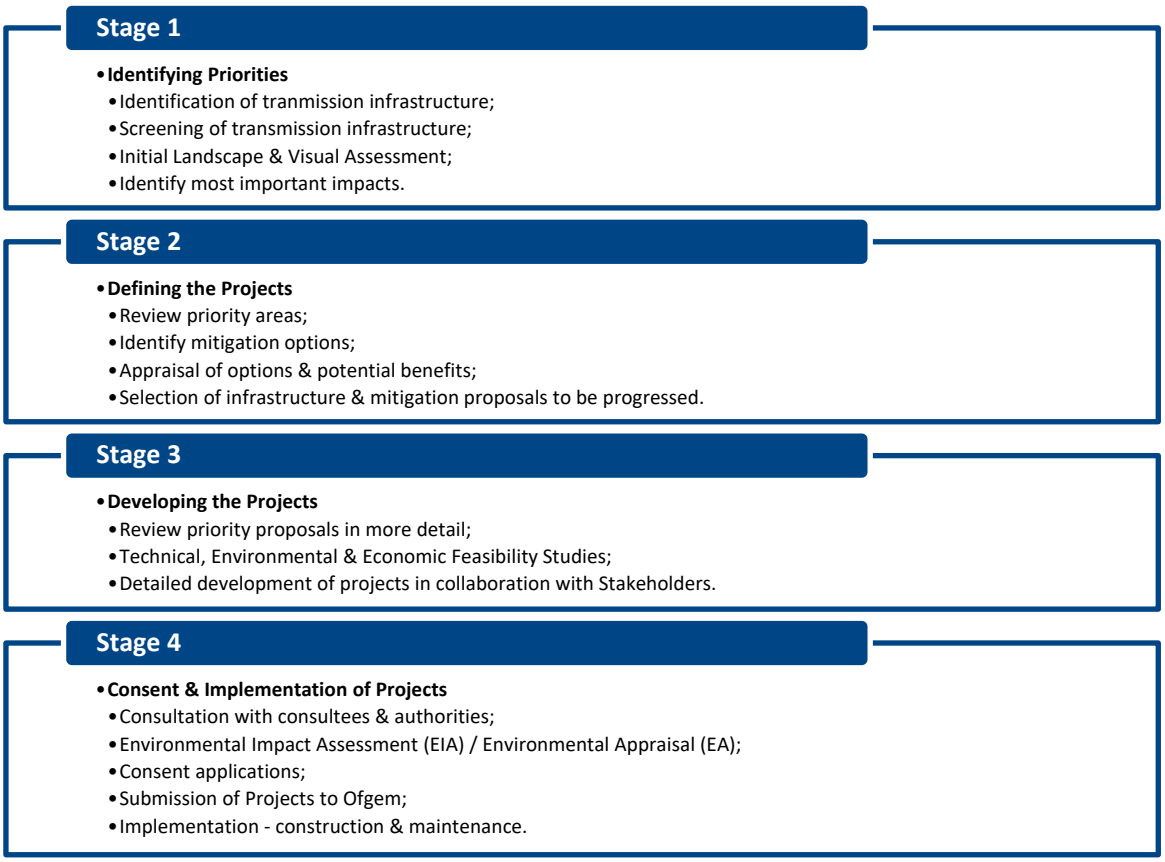
3.1.4 The focus has been on assessing steel lattice towers, OHLs and substations, but other infrastructure, such as wood pole lines forming part of the transmission network, have also been examined to establish if mitigation can be considered as being appropriate.

3.1.5 A two-stage approach to assess the impacts has been developed (as illustrated on **Plate 2.3**). The first stage involved desk-based review and initial field surveys of the existing infrastructure, designed to determine the feasibility of a candidate project, the likely scope of proposed mitigation and the relative benefit of the candidate projects. This sought to scope out locations where mitigation would be difficult and/or would achieve limited benefit. The second stage involved a more detailed survey of the remaining locations to identify the key receptors with the potential to be impacted and the likely significance of the effect. This information was used to provide

an outline design that would achieve the most effective level of mitigation, without giving rise to other unacceptable impacts on other receptors. This assessment process included detailed technical input from SSEN Transmission engineering and operation teams at each stage.

3.1.6 The design and selection of mitigation projects has been informed by further technical review by SSEN Transmission and, where required, by further specialist environmental studies. Throughout the development and assessment of the projects, communication and engagement with the stakeholders has been an essential part of the project. Stakeholder input has been required at every stage of the project to ensure identified visual enhancements are realised.

Plate 2.3: Routeing Stages



3.1.7 The process for identification, development, assessment and implementation of the projects under the VISTA programme is summarised above and is explained in more detail in the VISTA Policy and Annex[2]. Following this process, six designated landscapes were prioritised for proposal development in accordance with principles set out in the VISTA policy: two National Parks and four NSAs. The length of OHL identified within prioritised proposal areas amounted to over 345 km. Twelve sections of OHL identified through the initial stakeholder engagement process were selected for internal assessment and 10 proposals were prioritised for further development on conclusion of the internal assessment.

3.1.8 The final step in this process was to undertake an internal feasibility review of the prioritised mitigation solutions developed through the consultation process. This work involved input from various teams, engineering, project development, environmental, operations and maintenance, and land management. The teams were asked to feed into a technical and environmental assessment, using desk-based analysis and site work to evaluate the potential for the mitigation solution to be delivered.

[2] SSEN (2016) VISTA: An assessment of the visual impact of Scottish transmission assets. Policy annex [online] Available at: https://www.ssen-transmission.co.uk/media/1577/vista-policy-annex_v21.pdf [Accessed: July 2024]

3.1.9 Detailed technical analysis of the proposed schemes has concluded and a small number of proposals have been identified as offering the best opportunity for delivering visual impact enhancement, whilst still meeting with the other core principles of VISTA, namely, to limit negative socioeconomic and environmental impacts and offer best value for money. These schemes have also been deemed technically suitable from a network operation perspective, ensuring that network reliability and security of supply will not be constrained if the schemes are successful in obtaining regulatory funding from Ofgem.

3.1.10 The proposed development is one of the current projects being taken forward, along with similar cable undergrounding proposals in at Glen Sloy and Glen Falloch in Loch Lomond and The Trossachs National Park, the Cairngorms National Park and landscaping proposals in both National Parks and four NSAs.

3.2 Route Selection and Alternatives

Route Selection

3.2.1 Following identification of the proposed development scope (via 'Land Use Consultants' (LUC) report for tower removal), a primary alignment was determined close to the existing OHL.

3.2.2 Following this, SSEN Transmission undertook a desktop environmental constraints review, which considered ecology, cultural heritage, hydrology and landscape to check if the proposed alignment would interact with any environmental constraints.

3.2.3 Once all the detailed baseline environmental surveys had been completed, SSEN Transmission reviewed the proposed alignment again, with minor changes made which sought to minimise impact on riparian woodland and updated the location of the CSE from Tower 12 to Tower 13 (influenced by landowner discussions and input).

Alternatives

Do Nothing Scenario

3.2.4 The 'do nothing' scenario is a hypothetical alternative considered in EAs as a basis for comparing the development alternatives under consideration. Within the context of the proposed development the 'do nothing' scenario would involve the existing OHL remaining in its current form. This option is not considered as a feasible alternative as it would mean the visual impact of the electricity infrastructure on the Glen Strathfarrar NSA would remain and thus the objectives of Project VISTA would not be met.

Transmission

3.2.5 Consideration was initially given to other alternative forms of transmission (e.g. replacing the existing steel lattice tower OHL with a wood pole OHL); however, this was discounted because it would not achieve the objective of the VISTA project to reduce the impacts of the transmission network on designated landscapes as effectively as the complete removal of the OHL. Therefore, an UGC alignment was considered to be the only feasible option other than the 'do nothing' scenario.

Cable Sealing End Towers and Poles

3.2.6 Options under consideration for the CSE structures included new steel lattice CSE towers, CSE compounds (which do not require the installation of any new towers / poles but do require a ground-level fenced compound around the terminal OHL tower with downleads from the tower to insulated posts on the ground) and wood pole CSE structures. All three options were considered; however, as the difference in predicted environmental effects between these are considered to be negligible, an engineering-led decision was taken. The decision was made to construct a CSE compound and new steel lattice CSE tower at the eastern end, and the UGC at the western end would connect directly into the proposed new Deanie Substation.

4. ENVIRONMENTAL APPRAISAL

4.1 Purpose of this Report

4.1.1 This EA report has been produced as a non-statutory appraisal to allow appropriate environmental management and mitigation measures to be identified in support of the "necessary approvals"[3].

4.1.2 The installation of underground electricity cables is not 'EIA Development' as it is not listed in Schedule 1 or 2 of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 and therefore there is no requirement to produce an Environmental Impact Assessment Report. A formal EIA screening opinion was sought from the Energy Consents Unit (ECU) on 27th August 2020 for the proposed 132 kV Trident wood pole and 33 kV wood pole CSE structures. The ECU and The Highland Council considered the proposed development non-EIA. A follow up discussion was thereafter conducted with ECU on 13th December 2023 to clarify that the proposals were still non-EIA following a new CSE compound arrangement and removal of Tower 12 and replacement of Tower 13 with Tower 13R.

4.1.3 Whilst there is no requirement for EIA, it was agreed by SSEN Transmission through consultation with key stakeholders including The Highland Council, SEPA, NatureScot and Historic Environment Scotland (HES),that there was potential for adverse environmental effects associated with the proposed development which required appraisal and management. Under Schedule 9 of the Electricity Act 1989, the licence holder "*shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest*" and "*shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects*".

4.2 Issues Scoped Out

4.2.1 This EA report has scoped out detailed consideration of the topics identified in **Table 4.1**.

Table 4.1 Issues Scoped Out

Topic	Comments
Landscape and Visual (effects of undergrounding)	The landscape and visual appraisal in this report focuses on the potential effects as a result of the installation of the new CSE tower structure. It is considered that whilst the works to install the proposed UGC do have some potential for adverse landscape and visual effects (e.g. short-term visibility of trenching) full reinstatement of the UGC will be undertaken. It should be noted that full restoration may not be achievable, specifically through areas of peat however, the majority of these effects would be temporary and overall, the removal of the OHL would have a positive effect. Therefore, these elements have been scoped out.
Forestry	No felling is expected to be required but any small groups of trees would be avoided where possible by the construction contractor through micro-siting of the cable trench within the easement available. The CEMP would also provide construction stage environmental management measures, based on good practice including but not limited to: Forestry Commission (2017), Forests and Water, UK Forestry Standard Guidelines, Forestry Commission. As such the effects on forestry have been scoped out of further appraisal.
Traffic and Transport	The potential for traffic generation is limited to the construction phase only, because the operational phase would not result in any vehicle movements except in the case of the need for repair. Construction phase traffic effects would be temporary and short-term and would be managed by means of a CTMP. On the basis that the CTMP would provide suitable mitigation for any temporary adverse effects, the appraisal of traffic and transport

[3] In this context "necessary approvals" is taken to be the various consents and permissions required to construct and operate the project.

Topic	Comments
	effects has been scoped out of further appraisal. The CTMP would be developed by the contractor to include details of access design in order to appraise and demonstrate the adequacy of construction access arrangements; describe how it would be ensured that there is no parking of construction vehicles or loading and unloading of materials on the local public roads; describe steps taken to limit and where possible avoid restrictive traffic management measures; and how conflicts with school opening and closing times would be avoided. As such, the effects on traffic and transport have been scoped out of further appraisal. An Outline CTMP is included in **Appendix 10.1**.
Noise	The potential for noise to be generated would be limited to the construction stage and would be temporary and transient because the source of construction noise would move along the proposed alignment and existing OHL alignment. No high-impact construction methods such as piling are proposed; the noisiest activities are likely to be the excavations under the road, these would all occur during the construction phase and thus be short term activities. The majority of the construction activity along the cable alignment would comprise shallow excavations of soil using excavators to create cable trenches. No noise would be generated during the operational stage of the proposed development. Construction noise would be controlled through standard good practice measures such as the provision of a CTMP and CEMP. The CTMP and CEMP would be developed by the contractor. The design would also incorporate specific noise screening or specific orientation to mitigate against noise emissions. The risk for potential noise impacts would be controlled through standard good practice measures which would be outlined in the CEMP. BS5228: Code of Practice for Noise and Vibration Control on Construction and Open Sites (Noise) would be referenced to demonstrate that construction and noise levels would be acceptable for noise sensitive receptors and that suitable controls would be in place via the CEMP. On this basis, no likely significant noise effects are predicted. As such, noise has been scoped out of further appraisal.
Aquatic Ecology	No major watercourses are crossed by the UGC alignment. As such there would be no engineering activities in the major watercourses at any point. Smaller watercourses would be crossed during the construction phase using culverts to allow the temporary construction haul road to pass over the watercourse. For the cable trench, smaller watercourses and field drains would be crossed by excavating a trench whilst the channel is dry using cofferdams with bypass pumps. Therefore, there is limited potential for direct disturbance effects on aquatic ecology or fisheries. As such, the effects on aquatic ecology have been scoped out of further appraisal.
Air Quality	Potential effects are limited to the construction phase only (dust from excavations and emissions from construction plant and vehicles). Suitable mitigation to control air quality would be implemented through the CEMP and therefore no significant effects are predicted and no further appraisal is required.
Peat	A peat probing survey has been undertaken to inform this report and the peat depth contour plot developed demonstrates there is very little peat across the survey area except for some small pockets and one larger area in the east where the survey area is broader than the 60 m corridor. The scope of this report is limited to characterisation of the potential for priority peatland habitat relying on habitat mapping, which indicates that there are peatland habitats present, such as wet modified bog. Given the nature of the proposed development, any sections of cable installed in peat would involve a temporary excavation but no permanent effect as the excavated peat

Topic	Comments
	materials would be stored on geo-textile matting and restored post cable installation in turves to prevent loss, and degradation peat probe surveys would be undertaken to identify areas of deep peat and avoided.
Ground Contamination	The majority of ground that would be disturbed would be for excavation of the cable trenches and for foundations for the CSE tower / wood poles, which is 'greenfield', i.e. is agricultural land, the only exception being underneath road crossings. The CEMP would include measures to manage any contaminated materials generated by excavation in the road, in accordance with waste management legislation. Accordingly, no further appraisal of potential ground contamination impacts is required.

4.3 Issues Scoped In

4.3.1 The following topics have been scoped into this EA as they could potentially experience adverse effects as a result of the proposed development:

- landscape and visual amenity;
- ecology and ornithology;
- cultural heritage; and
- hydrology.

5. LANDSCAPE AND VISUAL

5.1 Executive Summary

5.1.1 As set out in **Chapter 4**, in consultation with key stakeholders, it was agreed by SSEN Transmission that there is potential for adverse environmental effects associated with the proposed development that require appraisal and management. This chapter appraises the landscape and visual effects of the proposed development as described in **Chapter 2**, focusing on the undergrounding of a 3.75 km section of the existing double circuit 132kV OHL and construction of two CSE compounds and associated structures at either end of the proposed UGC. As set out in **Section 4** (**Table 4.1**), the decommissioning of the existing OHL is considered to have an overall positive landscape and visual effect (the underpinning reason for the works as set out in **Section 2.1** above) and has been scoped out of the appraisal.

5.1.2 The methodology that underpins this appraisal is based on the guidance provided in GLVIA3 and is presented in **Appendix 5.1**. The area of influence of the proposed development has been ascertained through fieldwork and aerial photography with reference to the existing OHLs. A Zone of Theoretical Visibility (ZTV) has been prepared for the proposed development as shown in **Figure 5.3 (Appendix 5.2)**.

5.1.3 A 2 km radius study area was identified to appraise the landscape and visual effects due to the visually constrained setting of the proposed development within the mountains of Glen Strathfarrar with minimal development and accessible areas surrounding the site. Within the study area three viewpoint locations were identified as shown in **Figures 5.4 - 5.6: Viewpoint 1 at Deanie Lodge**; **Viewpoint 2 on the northern shore of Loch Beannacharah**; and **Viewpoint 3 on the lower slopes of Creag a Bhruic**. Visualisations were prepared for all viewpoints to demonstrate the effects of the proposed development within the context of the existing baseline conditions. The viewpoint locations were agreed with the Highland Council landscape officer, and visualisations have been prepared in accordance with the Landscape Institute Guidance Note 06/19[4]. Figures produced to support this appraisal are presented in Appendix 5.2 and include analysis of Landscape Character and Visual Receptors within the study area. Appraisal of potential construction and operation effects is provided in **Section 5.5**, with residual effects described in **Section 5.7**.

5.1.4 Key aspects of this proposed development considered in this appraisal are:

- The works required to underground the cable for a length of approximately 3.75 km parallel to the existing private access road within an area of rough semi-improved grassland, including a 120 m wide operational corridor and trench.
- Construction of CSE structures – one existing tower would be removed and one new steel lattice CSE tower installed at the eastern end of the UGC.
- Operation of the UGC and CSE structures following the decommissioning of the OHL and removal of 13 towers.

5.1.5 Mitigation of the proposed development will be delivered primarily through the CEMP with measures to minimise disturbance. During operation, the cable corridor would remain as reinstated moorland to integrate with the surrounding landcover. No trees or shrubs would be planted within the corridor.

5.1.6 The residual landscape effects:

- During construction:
  - Moderate adverse effects on landscape fabric that are not significant;
  - Minor adverse effects on landscape character that are not significant; and

[4] Landscape Institute (2019) Technical Guidance Note 06/19. Visual Representation of Development Proposals [online] Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf [Accessed: July 2024].

- Minor adverse effects on the surrounding NSA, Special Landscape Area (SLA) and Wild Land Area (WLA) that are not significant.

- During operation:
  - Minor adverse effect on landscape fabric that would not be significant;
  - Moderate/Minor to Moderate beneficial effects on landscape character that are not significant; and
  - Moderate beneficial effect on the NSA (not significant).

5.1.7 The residual visual effects:

- During construction:
  - Short-term Major/Moderate adverse effects would be experienced by receptors in proximity to the works (Lochanside and Deanie Lodge and associated cottages, users of the access track and Core Path IN26.01 where closest in proximity to works).
- During operation:
  - Beneficial effects would be expected due to the removal of electricity infrastructure from views and an increase in amenity and naturalness of the landscape. Major/Moderate beneficial effects would be expected on receptors at Lochanside and Deanie Lodge and associated cottages. Moderate beneficial effects on users of the access road and Core Path IN26.01.

5.1.8 Once operational, the effects of the proposed development on landscape and visual receptors are appraised to be beneficial due to the removal of towers, reducing the presence of large man-made structures, enhancing the remote and secluded character of the glen. The visual amenity of walkers within the study area, especially on the Core Path along Loch Beannacharan, where views would be improved due to dismantling a section of the OHL in this location.

5.2 Introduction

5.2.1 This chapter appraises the landscape and visual effects of the proposed development as described in **Chapter 2** and focuses on the undergrounding of a 3.75 km section of the existing double circuit 132kV OHL and construction of one CSE compound and associated structures at the eastern end of the proposed development.

5.2.2 The landscape and visual appraisal (LVA) study area comprises a 2 km radius around the proposed development as its visual influence is not envisaged to extend beyond the slopes of the mountains which enclose and define Glen Strathfarrar.

5.2.3 The LVA considers construction and operational effects of the proposed development on:

- landscape fabric;
- landscape character;
- landscape designations and classifications; and
- visual amenity.

5.2.4 Effects on landscape fabric are associated with changes to physical components of the landscape such as the landform, land use or land cover.

5.2.5 Effects on landscape character arise when there is change to the key characteristics of the landscape and its associated distinct and recognisable pattern of elements.

5.2.6 Effects on visual amenity are a subset of landscape effects and comprise changes in views of the landscape and the overall effects on visual amenity.

5.2.7 The LVA is accompanied by the following Appendices and Figures:

- **Appendix 5.1: LVA Methodology**;

- **Appendix 5.2: Figures: Photographs and Photomontages**;
- **Figure 5.1: Landscape Character Areas**;
- **Figure 5.2: Landscape Designations and Classifications**;
- **Figure 5.3: Visual Receptors, Viewpoint Locations and ZTV**;
- **Figure 5.4: Viewpoint 1: Near Deanie Lodge & Visualisation**;
- **Figure 5.5a: Viewpoint 02a: Northern shore of Loch Beannacharan & Visualisation**;
- **Figure 5.5b: Viewpoint 02b: Northern shore of Loch Beannacharan & Visualisation**; and
- **Figure 5.6: Viewpoint 3: Lower slopes of Creag a Bhruic & Visualisation**.

5.3 Methodology

5.3.1 The detailed methodology for the LVA is presented in **Appendix 5.1: LVA Methodology** but is summarised here. The LVA takes cognisance of the guidance contained in GLVIA3.

5.3.2 Representative viewpoints utilised in verification and illustration of the likely landscape and visual effects were agreed with The Highland Council Landscape Officer in November 2020, and visualisations have been prepared in accordance with the Landscape Institute Guidance Note 06/19[4].

5.4 Baseline

Landscape

Landscape Context

Topography and Hydrological Features

5.4.1 The study area is situated within the central part of the Scottish Highlands, within Glen Strathfarrar which runs west to east, with topography in the west forming the higher part of the glen. This location is characterised by a series of long narrow freshwater lochs within a mountainous setting. The main loch within study area is Loch Beannacharan, which occupies the glen floor. Rising up on either side are steeply graded, majestic mountains forming an iconic landscape which encapsulates the most picturesque elements of the Scottish Highlands scenery.

5.4.2 The glen is flanked to the north by a series of Munros (a mountain over 914.4 m) to the north, including:

- Sgurr Fuar-thuill (1,049 m above ordnance datum (AOD)), which is 7.5 km to the north of the proposed development;
- Sgurr a'Choire Ghlais (1,083 m AOD), which is 5.5 km to the north of the proposed development;
- Carn nan Gobhar (992 m AOD), which is 5.5 km to the north of the proposed development; and
- Sgurr na Ruadhe (993 m AOD), which is 3.7 km to the north of the proposed development.

5.4.3 The southern side of the glen is defined by the landmass of Sgorr na Diollaid, which is Corbett-status (818 m AOD) and Carn Gorm which is Graham-status (737 m AOD). The summits of these mountains are out with LVA study area; however, the lower slopes extend down to the glen floor and the landform of the massif contains views from within the glen.

Landcover

5.4.4 There is a large amount of deciduous and evergreen tree cover forming a mosaic of ancient woodland on the lower slopes of the glen either side of Loch Beannacharan. The woodland disperses across the moorland on the northern side, where much of the land becomes boggy and waterlogged, with numerous burns and tributaries feeding into the loch.

5.4.5 The study area is traversed by a single-track tarmac road on the northern side of the loch. This is a private road not open to the public for vehicular access; however, access by foot or bike is permitted. The lack of transport

routes increases the sense of remoteness within the landscape study area and further upslope the landscape has strong wildness characteristics with little evidence of human activity outside of the residential property and access track.

Landscape Character

5.4.6 **Figure 5.1** illustrates the Landscape Character Types (LCTs) found within the study area.

5.4.7 The proposed development is located within the Wooded Glens – Inverness LCT 226, as detailed by NatureScot in the 2019 update to their Landscape Character Assessment[5] and the upper slopes of the glen within the study area are categorised by Rugged Massif – Inverness LCT 220. No other LCTs would be influenced by the proposed development, nor would the site be visible from other LCTs.

5.4.8 The key characteristics of these LCTs are summarised in the **Table 5.1**.

[5] NatureScot (2019) Scottish Landscape Character Types Map and Descriptions [online] Available at: https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions [Accessed: July 2024]

Table 5.1 Landscape Character Types Description

Landscape Character Type	Description – Key Characteristics of the Study Area	Value	Susceptibility	Sensitivity
LCT 226 Wooded Glens – Inverness	• Long glens set within uplands and mountains; • Water bodies (such as lochs), river flats and areas of wetland on the valley floor; • Distinctive landscape of rugged hillsides and mountainous peaks looming above the glen floor; • Contrast between lower glens floors which are usually characterised by human activity (farmland and/or energy related lands use) with woodland and pine forestry, and the open heather moorlands and forests of the upper slopes; • Sparse settlement limited to few farms and crofts and isolated lodges within groups of trees and small woodlands; • Single track road along the base of the upper glens, terminating at the upper edge of the glen; • Numerous archaeological remains in lower glens; • More intimate, semi-enclosed landscape within the glen floor due to screening effect of trees and landform; • Distant views along the glens from open hill ground which have a more open and exposed feel; and • Sense of naturalness and remoteness increases from glen floor to the upper reaches of the slopes.	High due to nationally important landscape designation.	High due to remoteness and naturalness with intimate, semi-enclosed areas. The type of development proposed would afford potential to reduce the influence and impact of transmission infrastructure. However, CSE compounds could form localised intensification of development within a largely natural setting and could be prominent in view along the line of the glen.	High due to the High value and High susceptibility of the landscape to the type of development proposed.

Landscape Character Type	Description – Key Characteristics of the Study Area	Value	Susceptibility	Sensitivity
LCT 220 Rugged Massif - Inverness	• Parallel ranges of massive mountains of irregular landform divided by deep glaciated valleys; • Mainly broad, sometimes rounded rugged summits connected by long ridges and relatively few individual mountain peaks; • Steep terrain with mountain burns and occasional lochans in corries and depressions; • Landcover of rocky outcrops, glacial debris, deer-grazed heather and rough grassland; • Largely uninhabited with few signs of human activity or human artefacts in the interior; • Sparse archaeological remains; • Views from the peaks offer expansive views of the adjacent glens and straths and surrounding landscape character types; and • A strong sense of remoteness and wildness within strengthens towards the interior of the massif.	High due to the scenic quality and wildness characteristics within this LCT.	High due to remoteness and wildness with expansive views. The type of development proposed would be expected to enhance the character of this LCT due to the removal of human influence from within views.	High due to the High value and High susceptibility of the landscape to the type of development proposed.

Landscape Designations

5.4.9 **Figure 5.2: Landscape Designations and Classifications** shows the location and extent of landscape designations and classifications within the study area, including:

- Glen Strathfarrar National Scenic Area (NSA);
- Strathconon, Monar, and Mullardoch Special Landscape Area (SLA); and
- Central Highlands Wild Land Area (WLA).

5.4.10 The special qualities and/or key attributes of these areas are described below. Given the scenic quality, remote and wild nature of the study area, all of the designations/classifications are considered to have a High value and High susceptibility, and therefore a High sensitivity to the type of development proposed, albeit from the perspective of the removal of an existing power infrastructure.

Glen Strathfarrar National Scenic Area

Over half of the study area, and almost all the proposed development is located within the western part of the Glen Strathfarrar NSA. The special qualities of this NSA are noted in **Table 5.2**.

Table 5.2 Special Qualities of Glen Strathfarrar NSA

Special Quality	Description[6]
An archetypal Highland glen	*"This is an inspiring and invigorating landscape where many of the features considered as romantic and iconic of the Highlands are found within a small area: distant views of the snow-capped mountains; rocky ridges and heather-clad slopes; a rock-bound loch and glen; a rushing river; dark Caledonian pinewoods and beautiful individual trees – and all without obvious intrusion of modern artefacts."*
Ancient Caledonian pine forest amidst rocky slopes	*"Ancient forests clothe the lower slopes of this narrow, rocky glen. Dark green pine woods are interspersed with stands of the lighter birch, and by glades of heather, bracken and grass. Deer can sometimes be glimpsed amongst the trees. Scattered, mature pine trees hold the eye as they venture far up the sides of the glen, rising out of the rocks and heather. With their great size, orange bark, wide, spreading branches and their horizontal crowns, they add to the air of antiquity and timelessness of this glen."*
A sinuous, fast-moving river emerging out of a peaceful loch	*"The River Farrar, a winding and sinuous river, full of interest and variety, roars down the glen, finally plunging over the Culligran Falls into the lower strath. At the western end of the NSA, the still waters of Loch Beannacharan offer a tranquil contrast."*
The contrasts in colour, light and views	*"Pattern and colour vary constantly as one moves through the glen, brought about by the interplay of forest, clearing, river, loch and mountain. Views vary from the intimate to the extensive: one minute a rock-bound river framed by a canopy of trees, the next a distant, snow-bound peak reflected in the calm waters of a loch."*
A sense of peace and tranquillity	*"With its extensive native woodland and moorland, its flowing river, its surrounding hills and general absence of artefacts, the glen has a natural and peaceful feel, an oasis from the modern world."*

[6] NatureScot (SNH previously) (2010) Commissioned Report No. 374 [online] Available at: https://www.nature.scot/sites/default/files/2017-07/Publication%202010%20-%20SNH%20Commissioned%20Report%20374%20-%20The%20Special%20Qualities%20of%20the%20National%20Scenic%20Areas.pdf [Accessed: July 2024]

Strathconon, Monar and Mullardoch Special Landscape Area (SLA)

5.4.11 SLAs are designated at a regional level for the scenic quality of the landscape afforded protection, as set out in policy 57 of the Highland-wide Local Development Plan 2012[7]. The special qualities of this SLA are set out in **Table 5.3**.

Table 5.3 Special Qualities of Strathconon, Monar and Mullardoch SLA

Special Quality	Description[6]
Grand Mountain Ridges, Long Glens and Wide Strath	*"A series of grand, broadly parallel, high mountain ridges, separated by long, sinuous, steepsided glens and straths combine to form a landscape of immense scale which tend to be experienced in sequentially along the ridges and/or glens and straths.* *There is a marked contrasts between the bare, dramatic scenery of the ridges and upper glens - exaggerated by the huge scale of lochs Monar and Mullardoch - and the more tranquil and intimate qualities of the strath and glen floors, with their patchworks of grassland, bog, birch and pine wood, river and lochan.* *Distinctive sequential changes in the visual and landscape qualities travelling along the glens reflect a transition from lowland strath to mountain interior.* *There is an intimate sequential travelling experience on the A890 through Strathcarron with ever changing enclosure and exposure and views to adjacent features.* *There are contrasting deep, steep-sided glens and wide, wooded straths on the eastern and western periphery."*
Wildness and Remoteness	*"There is a very strong sense of wildness and remoteness within most parts of this landscape, typically evoked by the long journey from the main access points into this area form the east along winding single-track roads to the head of the glens. A sense of wildness is also influenced by the sparse network of rough, isolated paths and tracks, and the spectacular summit views over vast expanses of moorland and hills. The main detractors from these qualities are reservoir draw down scars and tracks compromise the sense of wildness within the interior.* *The mountain interior and upper reaches of the glens are out of sight of public roads, remote from any habitation, and are among the most remote areas of mainland Britain. The only part of this area significantly less remote is within Strathcarron where there are road and rail links.* *Extensive areas of hill slopes and summits are dominated by native vegetation that contributes to the wildness qualities, including mosaics of montane heaths, grasses, and mosses contrast with the afforested side slopes and partly wooded flood plain at Strathcarron. There are also important remnants of native Caledonian pinewood.* *The mountain terrain is physically challenging to access and ideally suited to adventurous ridge walkers. The area is very popular with hill walkers, with a high number of Munro mountains in close proximity. Also, given the large extent of the area and the limited accessibility, many wild camp within the area."*

[7] Highland Council (2012) Highland-wide Local Development Plan [online] Available at: https://www.highland.gov.uk/info/178/development_plans/199/highland-wide_local_development_plan [Accessed: July 2024]

Central Highlands Wild Land Area 24

5.4.12 The Central Highlands WLA covers the Strathfarrar Glen area and constitutes the second largest allocation of wild land within Scotland (approximate area: 132,747 ha). The area is flanked by the main routes to Inverness and Fort William and is distant from any large population centres. The landscape is one of large mountains, peatland and glens, of which Glen Strathfarrar is one. Human activity is limited to deer stalking, hill walking and fishing, and human habitation is limited to isolated estate lodges, cottages and some hydro-electric reservoirs and forest plantations around the margins. The WLA aspects are set out in **Table 5.4**.

Table 5.4 Wild Land Aspects of Central Highlands WLA 24

Aspect	Description[8]
An extensive and awe-inspiring range of large scale, high and rugged mountains	*"This WLA includes an extensive area of high, steep-sided mountains. The elevation, jagged forms and rocky faces of these, in combination with natural features such as corries, waterfalls and rugged slopes, contribute to a strong sense of awe."* *"The large scale, steep slopes and rugged landforms resulting from glaciation, as well as predominant rock cover, contributes to the sense of naturalness and means the ascent of the mountains is physically challenging."* *"The hills seem jumbled together as a number of interlocking high ridges of similar prominence, which increases the sense of naturalness."* *"These elevated views indicate a prevailing absence of human artefacts and contemporary land use across the WLA interior and increase the sense of remoteness."*
An extensive, remote mountain interior with strong qualities of sanctuary and solitude	*"Within the interior of this WLA, there is a strong perception of remoteness, sanctuary, solitude and risk."* *"The wild land qualities are also influenced by a prevailing lack of human artefacts and contemporary land use as well as human activity or noise."* *"Within the WLA, the winding and undulating nature of routes can result in perceived distances seeming greater than they actually are, and thus amplifying the sense of remoteness, especially as there are few definite size indicators from which to estimate distance."* *"Apart from paths, the only other human artefacts within the interior tends to be isolated historic features, such as old enclosures and cottages, for example the Maol-bhuidhe MBA bothy."* *"Some of the passes between glens form 'knife edge' bealachs, whilst others form wide elevated shelves that possess neither the enclosure nor linear form of the glens, or the exposure or panoramic views of the mountain tops. Screened from the glens below, but without the altitude and exposure of the peaks, these shelves tend to possess a secluded and hidden quality that contributes to a high degree of perceived remoteness, sanctuary and solitude."*
Deep glens that have steep, arresting side slopes as well as rivers and waterfalls, with	*"The mountains are divided by a network of deep glens – the main ones running east–west, but also tributary glens in other directions. From the floor of these, the side slopes tend to screen the adjacent mountain tops, but offer shelter, contributing to the sense of sanctuary."*

[8] Nature Scot: Central Highlands, Wild Lands Areas (2017) Available at: https://www.nature.scot/sites/default/files/2021-06/Wild%20land%20Description%20Central-Highlands-July-2016-24.pdf [Accessed: July 2024]

Aspect	Description[8]
some containing lochs and some revealing human land use	*"Water has a strong presence within the glens, with lochs, rivers, burns and/or waterfalls contributing to the sense of naturalness, whilst also attracting people for recreation such as fishing and canoeing."* *"Despite the remoteness and perceived sanctuary within most of the glens, some contain reservoirs for hydro-electric generation that are highlighted by prominent drawdown scars, indicating contemporary land use and affecting the sense of naturalness."* *"Most of the key routes to and within this WLA pass along the glens, with a gradual decrease in the influence of human artefacts and contemporary land use from the margins to the interior, and an increase in remoteness and sanctuary."* *"Estate management within the WLA tends to be focused within the glens, often around a main lodge and estate buildings, leading to other human artefacts and evidence of contemporary land use such as fences, access tracks and forest plantations."*
Small and extensive areas of native woodland that contribute to the sense of naturalness and highlight some arresting landscape features	*"Native trees and woodland contribute to the sense of naturalness within parts of this WLA. Patches of woodland are often small and occur in isolated locations that are sheltered and difficult to access, such as along burns, gorges or upon steep rocky cliffs."* *"Within some locations, the sense of naturalness of woodland is diminished by deer fences which indicate human intervention in grazing regimes, as well as appearing as a human artefact. Where there is a number of enclosures, there may also be cumulative effects."* *"Around the margins of some parts of the WLA, there is open visibility to a range of forest plantations upon elevated slopes outside the area. These highlight the limited extent of the WLA from some places where other human elements within intervening low-lying glens are screened."*

Visual

5.4.13 Visual receptors considered in the LVA are shown on **Figure 5.3**.

Settlements

5.4.14 There are no settlements within the study area. Settlement present comprises scattered residential dwellings and farmsteads.

Individual Properties

5.4.15 There are 6 residential properties within the study area:

- The nearest residential properties are located approximately 350 m north-west of the existing Tower 13 and the proposed CSE tower at Deanie Lodge and Deanie Cottage. It should be noted that Deanie Lodge is currently uninhabited.
- Benachran Lodge is located approximately 450 m north-east of the proposed 132 kV wood pole CSE structure in the west end of the proposed development.
- Cambussorray is located approximately 400 m to the south of the existing Deanie Substation.
- Lochanside, a private dwelling situated approximately 500 m east of the existing substation and within 50 m of the OHL to be removed.

- Two cottages at Deanie Lodge which are within 125 metres of the existing Tower 12 that is to be removed. These properties are located at an approximate elevation of 380 m AOD.

Transport Routes

5.4.16 No public roads or railways traverse the study area. A single-track road does access the northern side of the glen and provides local access to residents and maintenance of energy related infrastructure including the Deanie Hydro Power Station. Access to this road is restricted and controlled by the gatehouse keeper.

5.4.17 The views from the road are varied, with the section that runs between the gatehouse and the eastern end of Loch Beannacharan predominantly screened by deciduous woodland, with brief glimpses of grassland areas. As the track reaches the Loch Beannacharan, wide panoramic views are afforded through the glen to the other side of the loch. From here the road meanders to the end of the valley and to East Manor Lodge.

Recreational Receptors

5.4.18 There are few formal recreational receptors within the study area due to its remote nature. The only receptor within the study area is Core Path IN26.01, which follows the Glen Strathfarrar Road. There are a number of hill summits that are popular for hill walking nearby, but these lay outwith the study area and have therefore not been addressed in the LVA.

Appraisal Viewpoints

5.4.19 Viewpoint locations are shown on **Figure 5.3**. Viewpoints have been used as a tool to inform the appraisal of the potential effects on visual amenity throughout the visual study area.

5.4.20 The viewpoints are representative of varying viewing distances, elevation and direction from the proposed development. **Table 5.5** provides a baseline description of the view from each location, justification for each viewpoint's selection, and details of receptor sensitivity at each viewpoint based on the criteria presented in **Appendix 5.1: Methodology**. An appraisal of the visual effects at each viewpoint is presented in **Table 5.7** in **Section 5.7**.

Table 5.5 Representative Viewpoints – Baseline Description

Viewpoint	Location (National Grid Reference)	Distance / Direction from the Proposed Development	Baseline Description	Sensitivity
Viewpoint 1: Near Deanie Lodge (see **Figure 5.4** in **Appendix 5.2**)	NH 32039 39544	220 m / NW	This viewpoint is located at the eastern end of Loch Beannacharan near Deanie Lodge looking northwards towards the CSE tower. The foreground is predominantly pasture land, with low rolling slopes within a relatively flat valley floor. The access track works its way westward. The Tower 12 is clearly visible from this viewpoint and extends to just below the skyline. Behind which are the steep valley walls, rising up and away towards various Munros and the plateau. This location illustrates the change in view and focusses on Tower 12 which would be replaced by an undisrupted view due to the undergrounding of the cable.	Landscape Receptors Susceptibility: High Value: High Sensitivity: High Visual Receptors Susceptibility: Medium / High Value: Medium / High Sensitivity: Medium / High
Viewpoint 2: Northern shore of Loch Beannacharan (see **Figure 5.5** in **Appendix 5.2**)	NH 31234 39268	190 m / W	Located on the northern banks of the loch from the Core Path within the NSA. Here the landscape contains a flat valley floor dominated by heather and tussock grass. Enclosing the valley floor are deciduous and pine forests along the sides of the glen, and above which is an elevated moorland and skyline marked by individuated summits and rocky outcrops. This viewpoint is easily accessible (relative to this site) and likely to be experienced by walkers on the Core Path. It also illustrates most of the length of OHL to be removed.	Landscape Receptors Susceptibility: High Value: High Sensitivity: High Visual Receptors Susceptibility: Medium / High Value: Medium / High Sensitivity: Medium / High

Viewpoint	Location (National Grid Reference)	Distance / Direction from the Proposed Development	Baseline Description	Sensitivity
Viewpoint 3: Lower slopes of Creag a Bhruic (see **Figure 5.6** in **Appendix 5.2**)	NH 29140 38995	250 m / SE	This is an elevated view from the path on the southern slopes of Creag a Bhruic (at ~230 m AOD). From the elevated location, the foreground shows the steep valley sides fall away dramatically into the valley. Here the existing OHL is clearly visible as it crosses the valley landscape, with the existing substation just visible. The valley floor extends towards the edge of Loch Beannacharan. Beyond the loch, the landscape comprises a mixture of ancient deciduous woodland rising steeply towards the summit of Meall a'Mhadaidh. This view illustrates the proposed development from within the SLA and on the edge of the WLA overlooking Loch Beannacharan and the OHL to be removed.	Landscape Receptors Susceptibility: High Value: high Sensitivity: High Visual receptors Susceptibility: Medium / High Value: Medium / High Sensitivity: Medium / High

5.5 Potential Effects

5.5.1 This section identifies potential effects arising from the construction and operation of the proposed development in the absence mitigation measures. The predicted effects take account of embedded and additional mitigation measures listed in **Section 5.6**. Residual effects, assuming implementation of the mitigation measures, are described in **Section 5.7**.

5.5.2 The proposed development would result in the removal of a section of an existing OHL (approximately 3.75 km length), and replacement with UGC. The undergrounded section is approximately 3.75 km in length (See **Appendix 2.1**, **Figure 1.1**). At the eastern end the existing transmission tower would be replaced with a CSE tower as illustrated on **Figure 1.1: Potential Construction Effects**.

5.5.3 Construction activities with the potential to impact upon the landscape and visual amenity include the following:

- Site preparations, including ground clearance and localised earthworks and temporary spoil heaps;
- Excavation of cable trenches;
- Construction of site compound and access tracks;
- Storage of construction materials;
- Site plant, cranes, site fencing, lighting columns; and

- Site reinstatement and remediation works.

5.5.4 Construction works would be undertaken over a 12 month period, but would be phased to minimise the extent of disturbance at any one time. **Section 2.4** above sets out the construction methodology.

Construction Landscape Effects

5.5.5 Construction activities would affect the landscape fabric and character of the site and surrounding area, and affect views towards the site through the exposure of bare ground, the undertaking of earthworks, construction of foundations, the addition of temporary structures, including tall cranes, presence of material stockpiles, increases in traffic, increased human activity and disturbance, construction related lighting and construction related noise in the area.

Construction Visual Effects

5.5.6 Following construction, local impacts (i.e. disturbed ground or exposed foundations for the construction compound etc.) would be restored as part of the site restoration plan. Effects on the landscape and visual amenity would therefore be temporary and of short duration.

Potential Operational Effects

5.5.7 Upon the cessation of construction activities and reinstatement at the site the following elements of the proposed development could result in long-term or permanent impacts and effects:

- CSE tower; and
- Access track.

Operational Landscape Effects

5.5.8 The operational effects on the landscape will be minimal due to the cable being buried underground. Once the disturbed ground is reseeded and planted, there will be a temporary and short term change until planting is fully established.

Operational Visual Effects

5.5.9 The visual effects during operation will be contained to the eastern end of the proposed development where the CSE tower will be visible.

5.6 Mitigation

5.6.1 Based on the preceding baseline analysis and identification of key impact generators, a series of mitigation measures are proposed to minimise and avoid impacts where possible.

Mitigation During Construction

5.6.2 The mitigation proposed as part of the construction works, including measures to minimise disturbance and manage soils and site reinstatement, would be included within the Outline CEMP. A draft CEMP is included in **Appendix 9.1** which would be developed in further detail by the construction contractor and implemented in full.

Operational Mitigation

5.6.3 The proposed operational corridors for the UGC would not be re-planted. The above landcover would be reinstated to its existing baseline condition, with careful consideration given to the complex and delicate interplay of unmanaged grassland and moorland vegetation to better integrate the operational corridor into the wider landscape and prevent large linear grass strips.

5.7 Residual Effects

Residual Construction Effects

Construction Effects on Landscape Fabric

- The proposed development would directly impact upon the fabric of the site during construction. To install the cable, a suitably wide cable trench would be excavated within a 120 m wide working corridor. Spoil heaps and drainage channels would be prepared alongside the cable trench. At the eastern end, one existing tower would be removed and one new steel lattice CSE tower installed. Some ground disturbance would occur within the area of the existing operational corridor to prepare foundations for these new structures. Due to the nature of the works, the full site would be disturbed for the installation of the cables before infill of the trench and drainage channels and reinstatement of ground cover.
- Construction works would be prominent within the site but would be localised within a broader and unaltered landscape context. The works would be undertaken over a relatively small geographic area and effects would be highly localised. The construction of the proposed development would be short-term and temporary, and the site would be restored upon the completion of construction. Therefore, the magnitude of impact on the fabric of the landscape would be Medium and the residual effect would be Moderate (adverse), which would not be significant. Construction Effects on Landscape Character
- Direct effects would be experienced within LCT 226 and associated with temporary disturbance of grassland along the northern bank of Loch Beannacharan. The excavation of the cable trench and drainage channels, removal and / or replacement of transmission towers would impact upon the character of Glen Strathfarrar for a short duration during construction works. The impacts would be experienced locally and affect a limited geographical area. The magnitude of impact would therefore be Negligible, equating to a Minor adverse residual effect, which would not be significant.
- Indirect effects would be experienced on LCT 220 that would be highly localised along the northern side of Loch Beannacharan within Glen Strathfarrar and would be temporary and of short duration. The overall magnitude of impact during construction on the character of the Rugged Massif – Inverness LCT would therefore be Negligible, representing a Moderate / Minor adverse residual effect which would not be significant. The proposed construction works would have limited (if any) influence on the character and experience of the peaks and ridges of the mountains which form a rugged backdrop to the glen, and construction activities would be seen within an expansive landscape and view.

Construction Effects on Landscape Designations

- Glen Strathfarrar NSA would experience a Low adverse magnitude of impact on a highly localised part of the NSA. Given the short duration and temporary nature of construction, the construction effect would be Minor (adverse) and not significant. The Special Quality *'The contrasts in colour, light and views'* is likely to be impacted during construction.
- Strathconon, Monar and Mullardoch SLA would experience a Low adverse impact on a highly localised part of the SLA. Given the short duration and temporary nature of construction, the construction effect would be Minor (adverse, and not significant). The Special Quality 'Wildness and Remoteness' is likely to be affected due to the high concentration of construction equipment and vehicles with earthworks present.
- Central Highlands WLA 24 would experience indirect, short-term effects at a distance (over 1 km) during construction. A Negligible magnitude of impact with Minor or No residual effects is predicted. Such effects, whilst adverse, would not be significant. The aspect 'An extensive, remote mountain interior with strong qualities of sanctuary and solitude' is likely to be affected during the construction stage.

Construction Effects on Visual Amenity

- There are two residential / holiday accommodation properties within the glen and near to the proposed development, namely Lochanside and Deanie Lodge and associated cottages. During construction, the

magnitude of impact would be Medium due to the construction being prominent in the landscape. Whilst the construction effect would experience over a short period of time, due to proximity it would be Major / Moderate (adverse, and significant).

- The single track, private road through the Glen of Strathfarrar is not open to public vehicular traffic. Users of this road are limited to those people traveling to the small number of dwellings within the glen and people working in connection with the Deanie Hydro-electric Power Station and associated energy infrastructure. During construction, there would be short-term High magnitude impacts, but judged overall, taking into account the short duration, such impacts would represent a Moderate adverse (not significant) effect.
- Core Path IN26.01 is the only formalised visual receptor within the study area. An approximate 3 km length of this Core Path is likely to be directly affected by the proposed development, as it passes along the northern shore of Loch Beannacharan. During construction, the magnitude of impact would be High for the relatively short part of the Core Path in the vicinity of the UGC, dropping to Low and None for the remainder within the glen. The construction effect would be experienced over a short period of time; however, due to proximity, it would be Major / Moderate (adverse, and significant).

Residual Operational Effects

Effects on Landscape Fabric

5.7.1 During operation, there would be a period of reinstatement whilst excavations are backfilled and restored to a combination of unmanaged grassland and moorland, which is in keeping with the adjoining grasslands on the glen.

5.7.2 Once operational, the site condition would gradually be assimilated into the landscape. The western wooden pole sealing structures would be located within proximity to the existing substation. The eastern replacement CSE tower would be similar to those which currently exist. The magnitude of impact on the fabric of the landscape arising from the operational development would be Negligible and the corresponding effect would be Minor (adverse) and not significant.

Effects on Landscape Character

5.7.3 The site is located within the Wooded Glen – Inverness LCT. The proposed development would decrease the existing level of large-scale man-made infrastructure within the landscape. There would be permanent changes to the landscape character of this LCT from the direct effects of the construction of the UGC, construction of a steel lattice CSE tower, construction of a wood pole CSE structures, and decommissioning of transmission structures. There would also be indirect effects on areas of the LCT (and surrounding LCT) which would not be physically impacted by the development but would be influenced by the proposed development. These effects are described in **Table 5.6**.

Table 5.6 Effects on Landscape Character Types

Landscape Character Type	Description of Operation Effect	Landscape Effect
LCT 226 Wooded Glens – Inverness	Following the removal of the removal of 12 towers and replacement of 1 tower by CSE in the east and restoration of the undergrounded section of cable. As a consequence of these revisions to the transmission infrastructure, there would be notable reductions in the extent of infrastructure within Glen Strathfarrar; thereby resulting in a notable improvement of the LCT with a reinforcement of its remoteness. Whist CSE structures would be installed at both eastern and western extent of the UGC, these would be in place of	Operational Effect: Moderate (beneficial, but not significant since a small part of the overall LCT would be impacted).

Landscape Character Type	Description of Operation Effect	Landscape Effect
	existing OHL towers resulting in an overall reduction in structures. Given the long-term nature of the likely improvements associated with the proposed development, the magnitude of operational impacts on this LCT would be Low, constituting a Moderate beneficial effect.	
LCT 220 Rugged Massif – Inverness	The removal of transmission structures would reduce the level of infrastructure within the landscape and would simplify elements within the glen. The removal of the man-made infrastructure would reduce the overall influence of these structures within the landscape. The overall magnitude of impact during operation would be Low and the residual effects would be Low and beneficial.	Operational Effect: Moderate / Minor (beneficial, not significant).

Effects on Landscape Designations

Glen Strathfarrar NSA

5.7.4 The proposed development is located within the Glen Strathfarrar NSA, the Special Qualities of which relate to the interaction of key elements within the landscape, such as the fast-flowing river emerging out of a peaceful loch; the ancient Caledonian pine forest amidst rocky outcrops, and the contrasts in colour light and views. All of which results in the NSA being archetypical of Highland glen scenery and having a sense of peace and tranquillity.

5.7.5 Human influence is limited within this NSA, and the Special Qualities are enhanced by the sense of remoteness within Glen Strathfarrar NSA.

5.7.6 The effects on the Special Qualities are as follows:

- An archetypal Highland glen.
- Ancient Caledonian pine forest amidst rocky slopes – this Special Quality would be unaffected by the proposed development's construction.
- A sinuous, fast-moving river emerging out of a peaceful loch – this Special Quality would be unaffected by the proposed development's construction.
- The contrasts in colour, light and views – this Special Quality would be subject to temporary impacts associated with the bare soils revealed during undergrounding of the OHL. However, the characteristic green of the ground cover would be re-established in the short to medium term.
- A sense of peace and tranquillity – This Special Quality would be impacted by construction works and vehicle / plant improvement and excavations associated with the removal of sections of the existing OHL and its replacement the undergrounding cable. Such impacts would be of short duration, after which the sense of peace and tranquillity would be rapidly re-established.

5.7.7 Removal of 12 transmission towers and replacement of one tower with a CSE would reduce the influence of large-scale infrastructure within the landscape of the glen and the NSA locally. The removal of these structures would alter the existing composition of the landscape in Glen Strathfarrar, which is considered a positive change, reducing the level of contrasting infrastructure features within the glen landscape. The UGC, following restoration, would allow the electricity infrastructure to integrate into the landscape context. The CSE tower and wooden pole structures would replace an existing structure, and this is not anticipated to cause a noticeable change to the

Special Qualities of the Glen Strathfarrar NSA. Therefore, the magnitude of impact of the proposed development on the NSA would be Low. The operational effect would be Moderate (beneficial) and not significant.

Strathconon, Monar and Mullardoch SLA

5.7.8 The key Special Qualities of the SLA describe the area as being 'Wild' and 'Grand' with large mountains and long glens. The effects on the key Special Qualities of the SLA are as follows:

- Grand Mountain Ridges, Long Glens and Wide Strath – This quality focuses on the form and structure of the landscape and therefor would not be affected by the construction and implementation of the undergrounding.
- Wildness and Remoteness – the key parts of this attribute will be affected temporarily during the construction phase due to the volume and increase of traffic and construction equipment operating within the valley. However, this would be a temporary, short-term and reversible effect.

5.7.9 Since the proposed development would be highly localised within the south-eastern extremity of the SLA, and given the beneficial nature of the proposed development in removing existing large scale infrastructure, it is considered that the magnitude of impact on the SLA would be Low to Negligible. The effect would be Minor (beneficial) and not significant.

Central Highlands Wild Land Area 24

5.7.10 The key attributes of the WLA relate to the strong sense of 'naturalness' and 'remoteness' which relate to the high and rugged mountains. These engender a sense of 'sanctuary and solitude' which is also a key attribute of the WLA. The effects on the key attributes and qualities of the WLA are as follows:

- An extensive and awe-inspiring range of large scale, high and rugged mountains – this attribute focuses on the upper parts of the valley, and therefore would not be affected by the construction and implementation of the undergrounding.
- An extensive, remote mountain interior with strong qualities of sanctuary and solitude – the key parts of this attribute will be affected temporarily during the construction phase due to the volume and increase of traffic and construction equipment operating within the valley. However, this would be a temporary, short-term and reversible effect.
- Deep glens that have steep, arresting side slopes as well as rivers and waterfalls, with some containing lochs and some revealing human land use – the overall effect on this attribute will be reduced due to a reduction in human land use. Some electricity land use features would remain visible due to the CSE towers and the temporary effects during the undergrounding of the cable.
- Small and extensive areas of native woodland that contribute to the sense of naturalness and highlight some arresting landscape features – due to there being no woodland affected by the construction of the CSE towers and the undergrounding of the cable, it is deemed that there will be no effect on this attribute.

5.7.11 In summary, the magnitude of impact on the overall Central Highlands WLA 24 designation would be Low to Negligible due to the site's area and proximity to the WLA. The effect would be Minor (beneficial) and not significant.

Operation

5.7.12 The operational magnitude of impact on Lochanside and Deanie Lodge and associated cottages would be Medium due to the proximity to the site, and the operational effect on the amenity of these residential properties would be Major / Moderate (beneficial) and significant.

5.7.13 The single track, private road through Glen Strathfarrar is not open to public vehicular traffic. Users of this road are limited to those people traveling to the small number of dwellings within the glen and people working in connection with the Deanie Hydro-electric Power Station and associated energy infrastructure. During operation,

the magnitude of impact is considered to be Medium and the effect on the users of the road for access would be Moderate (beneficial) to significant for users of the Core Path.

5.7.14 For the Core Path, the existing length of OHL which would be removed as part of the proposed development runs parallel to the Core Path that passes along the northern shore of Loch Beannacharan. The magnitude of impact would be Medium, and the effect on the Core Path would be Major / Moderate (beneficial) and significant.

Effects on Views from Representative Viewpoints

Table 5.7 below presents the viewpoint appraisal for selected representative viewpoints. Baseline descriptions for each viewpoint, and the reason for selection are described in **Table 5.5**. Consultations that led to selection are explained in **Appendix 5.1**.

Table 5.7 Representative Viewpoint Appraisal

Viewpoint	Description of Effect	Scale of Effect
VP1: Near Deanie Lodge (see **Figure 5.4** in **Appendix 5.2**)	Construction Effects: During construction stage the decommissioning element of OHL would result in increased construction activity potentially within this view. This would be a temporary effect and of short duration. Magnitude of impact during construction would be High due to the construction activity. Operational Effects: During operational phase, the removal of transmission towers in this view would result in an overall reduction in man-made structures which would benefit the visual amenity.	Construction Effect: Major / Moderate (adverse and significant over a short period of time). Operational Effect: Moderate / Minor (beneficial and not significant).
VP2 Northern shore of Loch Beannacharan (see **Figure 5.5** in **Appendix 5.2**)	Construction Effects: During construction stage the decommissioning element of OHL would result in increased construction activity potentially within this view. This would be a temporary effect and of short duration. Magnitude of impact would be Medium to High due to the proximity of the viewpoint to the UGC alignment. Following reinstatement and reestablishment of the ground and groundcover after construction of the UGC, the only notable change in this view would be the removal of transmission infrastructure that run parallel to the loch near the access road. The removal of the towers would reduce the level of man-made infrastructure within the landscape. Operational Effects: The operational magnitude of impact is considered to be Medium. Although the existing OHL is relatively close to the viewpoint, it is backclothed which reduces the prominence of the OHL.	Construction Effect: Major / Moderate (adverse and significant over a short period of time). Operational Effect: Moderate (beneficial and not significant).

Viewpoint	Description of Effect	Scale of Effect
VP3 Lower slopes of Creag a Bhruic (see **Figure 5.6** in **Appendix 5.2**)	Construction Effects: The magnitude of impact during construction phase would be High for a short period of time due to the proximity of underground cabling works. Operational Effects: During the operational phase, after reinstatement of the ground and groundcover, and removal of existing OHL transmission towers, the notable change in the view would be the removal of steel lattice towers, particularly since they run between the viewpoint and the loch. The operational magnitude of impact of the proposed development would be Medium since the view to the loch would be unimpeded by towers in this view.	Construction Effect: Major / Moderate (adverse and significant over a short period of time). Operational Effect: Moderate (beneficial and not significant).

5.8 Conclusion

5.8.1 The proposed development would remove approximately 3.75 km of existing OHL and 12 associated towers from within Glen Strathfarrar and replace these with UGCs. The eastern end of the UGC would join a new steel lattice CSE tower, replacing existing Tower 13.

Summary of Landscape Effects

5.8.2 During construction, there would be temporary not significant effects on the fabric and character of the landscape of the site, and several temporary significant effects on the visual receptors in proximity to the UGC alignment during construction. The existing ground cover disturbed during construction would be returned to a baseline condition and any construction effects would be of short duration.

5.8.3 During operation, the influence of the development on the landscape character would be perceived as beneficial, enhancing key characteristics of the LCTs and the experience of visual receptors within the glen.

5.8.4 The proposed development would not introduce new or uncharacteristic elements to the landscape of the NSA or the SLA. The removal of lines and steel lattice towers in the long term would be perceived as beneficial to the Special Qualities of the area.

5.8.5 There would be minor beneficial effect on the WLA, the wildness characteristic of Glen Strathfarrar would be increased by removal of existing large-scale structures.

Summary of Visual Effects

5.8.6 The residents within Glen Strathfarrar located near Loch Beannacharan would experience a Medium to High magnitude of impact which would result in a long-term beneficial residual effect on their visual amenity and temporary significant effects on the Core Path, access tracks and two properties in close proximity to the UGC alignment.

5.8.7 Part of the Core Path IN26.01 would be temporarily impacted during construction while the UGC is being laid. During the short term the construction effect would be Major / Moderate (adverse and significant). Once operational there would be no change to the visual amenity of this Core Path. Once operational the development would result in a long-lasting Moderate beneficial effect.

Viewpoints

5.8.8 Viewpoints 2 and 3 are closest to the existing OHL to be removed and would, therefore, be most impacted during construction for a short duration. Viewpoint 3 is slightly more distant; however, the existing OHL is between the viewpoint and the loch thus likely to be appear more prominent in the view. Construction effects would be Major

/ Moderate (adverse and significant), temporary and short-term. Once operational, the change to all viewpoints would be Moderate (beneficial and not significant).

6. ECOLOGY AND ORNITHOLOGY

6.1 Executive Summary

6.1.1 The likely effects on ecology and ornithology resulting from the proposed development have been appraised based upon the results of a desk study and field surveys undertaken to inform the environmental baseline.

6.1.2 Three designated sites of ecological interest, one of which is also of ornithological interest, have been identified within 10 km of the proposed development. The entire proposed development is located within the Glen Affric to Strathconon Special Protection Area (SPA). A section of the proposed development also occurs within parts of the Strathglass Complex Special Area of Conservation (SAC) and the overlapping Glen Strathfarrar Site of Special Scientific Interest (SSSI). Potential impacts to the ecological and ornithological interests of all three designated sites have been considered for both the construction and operational stages of the proposed development.

6.1.3 Field surveys identified the habitats, protected species and breeding birds present around the proposed development. Surveys were initially undertaken in 2020, then supplemented by a re-survey for habitats and protected species in 2023. The latter surveys were carried out to 'ground truth' for any habitat change, new signs of protected species, and also to cover additional areas which had been added to the proposed development since the time of initial survey.

6.1.4 The key habitats identified include wet dwarf shrub heath, wet modified bog, acid grassland, blanket bog, flush and spring and dry dwarf shrub heath as well as mixed woodland and semi-natural broadleaved woodland, all of which could be impacted by the proposed development.

6.1.5 Habitats with potential to be Ground Water Dependent Ecosystems (GWDTEs) have been identified and appraised for their likelihood to be truly groundwater dependent. Within the study area, three areas are appraised as being of potential high groundwater dependency, while a further three areas are of potential moderate groundwater dependency. Field signs of badger *Meles meles*, otter *Lutra lutra*, pine marten *Martes martes* and water vole *Arvicola amphibius* were recorded during field surveys in 2020 and confirmed in 2023.

6.1.6 Glen Affric to Strathconon SPA is designated for its breeding population of golden eagle *Aquila chrysaetos*. Breeding raptor surveys were conducted in 2020 to record and assess the activity of this species in and around the proposed development. The survey results, along with information supplied by the Highland Raptor Study Group (HRSG), have been utilised to inform **Appendix 6.3**, which forms the Habitats Regulation Appraisal (HRA) and Appropriate Assessment (AA) to assess the potential impact on golden eagle and describe the mitigation proposed to prevent disturbance.

6.1.7 Mitigation measures have been set out that would ensure, where appropriate, that no significant effects on ecological or ornithological features would result from the impacts of construction or operation of the proposed development. These include:

- Impacts on designated site features and habitats during construction of proposed development to be minimised by use of existing access tracks (where possible), by following the line of existing quad-bike tracks through habitats and by reinstatement of habitats post construction;
- GWDTE and Annex 1 habitats, such as wet modified bog, blanket bog and wet dwarf shrub heath, to be avoided (as listed under the Habitats Directive[9]) where possible with the use of low-pressure vehicles and bog mats or floating tracks where avoidance is not possible. Best practice to be followed and detailed within the CEMP;

[9] In Scotland, the Habitats Directive is translated into specific legal obligations by the Conservation (Natural Habitats, &c.) Regulations 1994. This piece of legislation is usually known as the Habitats Regulations. Available at: https://www.legislation.gov.uk/uksi/1994/2716/contents/made

- Excavated peat materials to be stored on geo-textile matting, with the acrotelmic and catotelmic layers[10] kept separate, and peat turfs restored post cable installation to prevent loss and/or degradation. Peat probe surveys should be undertaken to identify areas of deep peat for avoidance;
- Where practicable, the use of HDD to avoid impacts on watercourses, and the trees around, when installing the UGC;
- Pre-construction surveys for protected species including badger, otter, pine marten and water vole to be undertaken;
- Well established SSEN Species Protection Plans (SPP) to be followed;
- Micro-siting of the UGC at least 30 m from the active badger sett near Beanachran Lodge (the sett is situated 10 m from the presently proposed UGC route);
- 30 m buffers around all badger sett entrances – no infrastructure to occur within 30 m of sett entrances to prevent disturbance. If this is not feasible then a disturbance licence to be sought from NatureScot and all works within 30 m of a sett undertaken under the supervision of an ECoW, with digging only permissible if carried out by hand;
- 30 m buffers to be maintained around potential otter holts and layouts, and potential pine marten den and water vole habitat maintained as per SPPs;
- Vegetation clearance to occur outside of the breeding season (March-September inclusive), if this is not possible then works to be carried out under the supervision of an ECoW during this period;
- Disturbance to golden eagles to be minimised by restricting the timing of works which occur within 1 km of the eyrie. No works to occur within 1 km of the known eyrie (Glen Strathfarrar East Territory) between February-October. Works should only occur between 9 am and 4 pm, minimising disturbance during the breeding season and year-round. A watching brief to monitor eagle activity during the construction works and a Protected Species Risk Assessment (PSRA) to be undertaken;
- Pollution of watercourses mitigated by avoidance (i.e micro-siting infrastructure in order to avoid watercourses), and by following Good Practice Guidance – mitigation methods to be detailed in a CEMP; and
- Pollution of watercourses and habitats during operation – operations staff to have their own RAMS (Risk Assessment and Method Statement) that they will follow in order to manage environmental risks from their work, such as oil spills.

6.1.8 Taking into consideration the nature of the proposed development and the mitigation measures proposed, no significant residual effects are predicted on ecological or ornithological features.

6.2 Introduction

6.2.1 This section identifies the potential impacts on ecological and ornithological features associated with the construction and operation of the proposed development, as described in **Section 2: Description of the Proposed Development**. Where required, it also provides details of mitigation measures to address these potential impacts. The specific objectives of this section are to:

- Describe the ecological and ornithological baseline;
- Identify the potential direct and indirect impacts on ecological and ornithological features;
- Describe any mitigation or control measures proposed to address likely impacts; and
- Identify any significant residual effects on ecological or ornithological features.

6.2.2 This section is supported by:

[10] Acrotelmic peat is the living surface layer, catotelmic peat is the lower peat that is no longer living. In particularly sensitive areas. Acrotelmic peat is typically stored as peat turfs.

- **Appendix 6.1: Ecology and Ornithology Methodology and Results**;
- **Appendix 6.2: Confidential Ecology Results**;
- **Appendix 6.3: Habitats Regulations Appraisal and Appropriate Assessment**; and
- **Appendix 6.4: Ecology and Ornithology Figures**:
    - **Figure 6.1: Ecology Constraints**;
    - **Figure 6.2: Woodland Constraints**;
    - **Figure 6.3: Ornithology Constraints**;
    - **Figure 6.4: Habitat Survey Results**;
    - **Figure 6.5: Target Notes**;
    - **Figure 6.6: Ecology Target Notes (Confidential Results)**;
    - **Figure 6.7: Groundwater Dependent Terrestrial Ecosystems**;
    - **Figure 6.8: Breeding Bird Survey**; and
    - **Figure 6.9: Breeding Raptor Survey Results**.

6.2.3 **Appendix 6.2: Confidential Results** and **Figure 6.6: Ecology Target Notes (Confidential Results)** must not be shared with members of the public as they contain sensitive information on the location of badger setts and potential otter holts.

6.3 Methodology

6.3.1 The methodology used for the desk study, field surveys and the appraisal are described in **Appendix 6.1: Ecology and Ornithology Methodology and Results**.

6.3.2 The ecological desk study area is defined as a 2 km buffer around the proposed development, as described in **Appendix 6.1: Ecology and Ornithology Methodology and Results**. The ornithological desk study area is defined as a 10 km buffer around the proposed development. The ecological desk study area is shown on **Figure 6.1: Ecology Constraints** and **Figure 6.2: Woodland Constraints**. The ornithological study area is shown on **Figure 6.3: Ornithology Constraints**.

6.3.3 The field study area is defined as a buffer up to 500 m, where relevant, around the proposed development, as described in **Appendix 6.1: Ecology and Ornithology Methodology and Results** and shown on **Figure 6.4: Habitat Survey Results**.

6.4 Baseline

Designated Nature Conservation Sites

6.4.1 **Figure 6.1: Ecology Constraints** shows the designated nature conservation sites of ecological importance within the ecological desk study area. The sites with a statutory designation for ecological interest within the desk study area are detailed in **Table 6.1**. Where there is no potential for impacts, defined as the potential for qualifying interest species or habitats of the designated nature conservation site to be impacted by the proposed development, this is detailed, and the designated nature conservation sites are not considered any further in the appraisal.

Table 6.1 Designated Sites of Ecological Interest

Site Name	Relevant Qualifying Species / Features	Distance to Proposed Development	Connectivity with Proposed Development
Strathglass Complex SAC	• Alpine and subalpine heaths; • Blanket bog; • Bog woodland; • Plants in crevices on base-rich rocks; • Caledonian forest; • European dry heaths; • Tall herb communities; • Otter; • Northern Atlantic wet heaths with *Erica tetralix*; and • Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels.	Part of the Strathglass Complex SAC is situated within the eastern part of the proposed development.	Potential direct and indirect impacts possible where the proposed development occurs within the SAC (eastern extent – see **Figure 6.1: Ecological Constraints**) and where it occurs in close proximity to the SAC. This may include direct loss of qualifying habitat or indirect impact on hydrology outwith the proposed development.
Glen Strathfarrar SSSI	• Extensive native pinewood habitats; • Breeding birds associated with pinewoods including Scottish crossbill *Loxia scotica* and crested tit *Lophophanes cristatus*; • Ground flora species associated with ancient pinewoods including one-flowered wintergreen *Moneses uniflora*, lesser twayblade *Listera* cordata and creeping lady's tresses *Goodyera repens*; and • A rich lichen community including the rare, forked hair lichen *Bryoria furcellata*.	Part of the Glen Strathfarrar SSSI is situated within the eastern part of the proposed development.	Potential direct and indirect impacts possible where the proposed development occurs within the SSSI (eastern extent – see **Figure 6.1: Ecological Constraints**) and where it occurs in close proximity to the SSSI. This may include direct loss of qualifying habitat, disturbance to qualifying species or indirect impact on hydrology outwith the proposed development.

6.4.2 **Figure 6.2: Woodland Constraints** shows the areas of ancient woodland situated within the ecological desk study area. The proposed development does not pass directly though any areas of listed ancient woodland. However, two areas of ancient woodland are situated within 500 m of the proposed development. One area is located to the north-west (Beanachran Wood[11]), while a second area is situated to the south-east, south of Loch Beannacharan (Coille an Àth Wood). Both areas contain ancient woodland, which is important for biodiversity and nature conservation, providing habitat for species such as badger, red squirrel, pine marten and bat species. Ancient woodland is defined as woodland that has been continually wooded since 1750, and there is a strong presumption in Scottish planning policy[12] against the removal of woodland on ancient woodland sites[13].

6.4.3 Areas of semi-natural woodland are also shown on **Figure 6.2: Woodland Constraints**. The proposed development boundary intersects this woodland type to the east of Lochanside. Areas of semi-natural woodland are also present within the eastern end of the proposed development immediately south of Towers 13 and 14.

6.4.4 **Figure 6.3: Ornithology Constraints** shows the designated nature conservation sites of ornithological importance within the ornithological desk study area. There is one site with a specific statutory designation for ornithological interest within the ornithological desk study area. This is the Glen Affric to Strathconon SPA. In addition, as listed in **Table 6.1**, Glen Strathfarrar SSSI also has Scottish crossbill and crested tit listed as qualifying interest species.

Table 6.2 Designated Sites of Ornithological Importance

Site Name	Relevant Qualifying Species / Features	Distance to Proposed Development	Connectivity with Proposed Development
Glen Affric to Strathconon SPA	Golden eagle This site qualifies as an SPA by regularly supporting a population of European importance of the Annex 1 species golden eagle (10 active territories in 2003, equating to 2.2 % of the GB (Great Britain) population).	The proposed development lies within the Glen Affric to Strathconon SPA.	The proposed development occurs within close proximity to a known golden eagle territory and eyries (nest site). The proposed development may cause direct impacts on this species through disturbance, especially during the breeding season. This impact has been further addressed within the HRA and AA included as **Appendix 6.3**. Mitigation measures to reduce disturbance have been detailed within this appendix and also within this chapter.

Local Biodiversity Action Plan

6.4.5 Glen Strathfarrar is situated within the area covered by The Highland Council. The current Highland Biodiversity Action Plan (BAP) (2021-2026)[14] identifies key strategic biodiversity issues in the Highlands. Priority habitats

[11] Contains both ancient woodland (of semi-natural origin) and Other (on Roy map) ancient woodland. The latter may have had short breaks in continuity of woodland cover but will retain ancient woodland features and so the two categories are treated equally in this assessment.
[12] Scottish Government (2019) Scottish Government's Policy on Control of Woodland Removal: Implementation Guidance. February 2019. [online] Available at: https://forestry.gov.scot/support-regulations/control-of-woodland-removal [Accessed: July 2024]
[13] NatureScot (2023) Scottish Ancient Woodland Inventory Guidance [online] Available at: https://www.nature.scot/doc/guide-understanding-scottish-ancient-woodland-inventory-awi [Accessed: July 2024]
[14] Highland Community Planning Partnership (2021) Highland Nature Biodiversity Action Plan (2021-2026).

and species relevant to the proposed development are detailed in **Table 6.3**. The priority habitats and species noted within the Highland BAP are also included in the Scottish Biodiversity List[15] and the UK BAP[16].

Table 6.3 Relevant Priority Habitats and Species Identified within the Highland Biodiversity Action Plan (2021-2026)

Habitats	Species
Purple moor-grass and rush pastures	Bats (various)
Wet heath	Otter
Upland heath	Red squirrel
Blanket bog	Scottish wildcat *Felix silvestris grampia*
Native pine woodland	Water vole
Upland oak woodland	Eurasian beaver *Castor fiber*
	Pine marten
	Golden eagle

Field Survey

Phase 1 Habitats UKHab and Protected Species

6.4.6 A full description of the results, such as habitat types, dominant plant species present and protected species records, are provided in **Appendix 6.1: Ecology and Ornithology Methodology and Results** and in **Confidential Appendix 6.2: Confidential Ecology Results**.

6.4.7 The initial survey was undertaken in 2020, at which time the best practice methodology was to follow the extended Phase 1 Habitat Survey method as per the JNCC[17]. However, a new classification system has since been introduced and is to be used as standard best practice for habitat surveys going forward, this is called the UK Habitat Classification (UKHab) and is integral to DEFRAs Biodiversity Net Gain (BNG) metric. As such, the goal of the 2023 surveys was to 'fill in the blanks' using Phase 1 methods (for sake of continuity) and concurrently re-classify the habitat types into UKHab. This section details the habitats identified under both the Phase 1 method and the UKHab method, as the UKHab method will be used to inform the BNG for this project. **Table 6.4** details the habitat types recorded in both Phase 1 and UKHab equivalent classifications.

6.4.8 **Figure 6.4: Habitat Survey Results** shows the locations of the following habitat areas and their proximity to the proposed development:

Table 6.4 Habitat Types Identified within the Field Study Area (Phase 1 Types and UKHab Equivalents)

Phase 1 Habitat Type	UKHab type (equivalent)
Broadleaved woodland – semi-natural	Woodland and forest – Lowland mixed deciduous woodland
Broadleaved woodland / plantation	Woodland and forest – Other woodland; broadleaved
Coniferous woodland / semi-natural	Woodland and forest – Native pine woodlands
Coniferous woodland – Plantation	Woodland and forest – Other coniferous woodland

[15] NatureScot (2020) Scottish Biodiversity List [online] Available at https://www.nature.scot/doc/scottish-biodiversity-list [Accessed: July 2024]
[16] JNCC (1994) UK BAP [online] Available at: https://hub.jncc.gov.uk/assets/cb0ef1c9-2325-4d17-9f87-a5c84fe400bd [Accessed: July 2024]
[17] JNCC (2010) Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit. Joint Nature Conservation Committee, Peterborough.

Phase 1 Habitat Type	UKHab type (equivalent)
Mixed woodland /semi -natural	Woodland and forest – Lowland mixed deciduous woodland
Mixed woodland plantation	Woodland and forest – Other woodland; mixed
Scrub – dense / continuous	Heathland and shrub – Mixed scrub
Scrub - scattered	Heathland and shrub – Mixed scrub
Broadleaved parkland / scattered trees	Woodland and forest – Wood-pasture and parkland
Coniferous parkland / scattered trees	Woodland and forest – Other coniferous woodland
Mixed parkland – scattered trees	Woodland and forest – Wood-pasture and parkland
Acid grassland – unimproved	Grassland – Upland acid grassland
Acid grassland – semi improved	Grassland – Upland acid grassland
Neutral grassland – semi improved	Grassland – Other neutral grassland
Improved grassland	Grassland – Modified grassland
Marsh / marshy grassland	Wetland – Purple moor grass and rush pastures
Bracken – continuous	Grassland – Bracken
Bracken – scattered	Grassland – Bracken
Dry dwarf shrub heath – acid	Heathland and shrub – Upland heathland
Wet dwarf shrub heath	Heathland and shrub – Upland heathland
Montane heath / dwarf herb	Heathland and shrub – Mountain heaths and willow scrub
Blanket sphagnum bog	Wetland – Blanket bog
Wet modified bog	Wetland – Transition mires and quaking bogs (H7140)
Flush and spring – acid / neutral flush	Wetland – Fens (upland and lowland)
Standing water	Loch
Running water	Rivers and Streams
Other habitat (access tracks)	Urban – Bare ground

6.4.9 The field study area is dominated by wet dwarf shrub heath, next to standing water (Loch Beannacharan), with sizable areas of bracken (over heath), acid grasslands, woodland, wet modified bog and blanket bog. The field study area is heavily grazed by deer and feral goats. The habitats recorded on-site are shown on **Figure 6.4: Habitat Survey Results** and further described below.

6.4.10 Various semi-natural woodland habitat types are present within the field study area including semi-natural broadleaved, coniferous and mixed woodland. Broadleaved semi-natural woodland occurs within the site boundary south of existing Tower 3 (strip of woodland extending down from Tower 3 and through the boundary towards the loch) and between Towers 6-9 (stand of woodland covering part of the project boundary). Small areas of this woodland type are also present within the boundary south of Tower 13 and the proposed switching station location. An area of semi-natural coniferous woodland is present to the north of existing Tower 6, just outwith the site boundary. Areas of semi-natural mixed woodland occur within the field study area, with small

pockets occurring within the site boundary to the east of existing Tower 8. Small areas of scattered and continuous scrub occur around tracks and disturbed ground to the south of Tower 13, within the site boundary.

6.4.11 Grassland types within the site boundary consist of acid types. Strips of acid grassland occur along the site boundary with notable strips present running southwards from existing Tower 13. Semi-improved acid grassland is more common with sizable areas present across the field survey area and the site boundary, notably around Deanie Lodge and existing Tower 12.

6.4.12 Semi-improved neutral grassland is present within the western extent of the proposed development where the site connects to the proposed Deanie Substation. Areas of heavily grazed improved grassland occur within the site boundary south of existing Towers 2-5 and to the north and between existing Towers 12-13. A small area of marshy grassland occurs to the south of existing Tower 1, within the site boundary.

6.4.13 Stands of bracken, both scattered and continuous, occur throughout the proposed development, with notable stands occurring to the south of existing Tower 5 and between existing Towers 13-14, all within the site boundary.

6.4.14 Dry dwarf shrub heath is present within the site boundary to the east of the proposed Deanie Substation and also within at the eastern end of the proposed development, between existing towers 14-15 and to the south around access tracks. Wet dwarf shrub heath is the most dominant habitat type recorded within the field study area and the site boundary. This habitat type covers a majority of the proposed development, covering hillsides to the north.

6.4.15 Sphagnum rich blanket bog is present within the field study area and the proposed development. This habitat type occurs within the site boundary near the proposed Deanie Substation area and along the southern side of the track south of existing Towers 10-12. A notable area of this habitat type is also present within the site boundary to the south of existing Towers 13-15, between the existing OHL and the track. Wet modified bog occurs in small pockets at the western end of the site, south of existing Tower 1. A larger area occurs around existing Towers 10-11, with small areas spreading into the site boundary. Areas of flush are present within the field study area, the proposed development overlaps with an area of this habitat just to the west of existing Turbine 13.

6.4.16 Six potential GWDTEs[18] were identified within the field study area, as shown on **Figure 6.7: Groundwater Dependent Terrestrial Ecosystems**. **Table 6.4** details the community types identified and their groundwater dependency. GWDTEs are sensitive to changes in hydrology and hydrogeology and are a priority under the EU Water Framework Directive (WFD)[19]. The study area includes three areas of potential highly GWDTEs: M6, M23 and W7. The study area also includes three potentially moderately GWDTEs: M15, M25 and MG10. Potential impacts to GWDTEs during construction and operation are detailed in **Table 6.6**, which also details the relevant mitigation, or good practice control measures, where appropriate.

Table 6.5 Potential GWDTE Community Types

Potential Groundwater Dependency[18]	Vegetation Community
Moderate	M15 Scirpus cespitosus-Erica tetralix wet health
	M25 Molinia caerulea-Potentilla erecta mire
	MG10 Holcus lanatus-Juncus effusus rush-pasture
High	M6 Carex echinata-Sphagnum fallax / denticulatum mire

[18] SEPA (2017) Land Use Planning System SEPA Guidance Note 31 [online] Available at: https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions.pdf [Accessed: July 2024]

[19] European Commission (2024) Water Framework Directive (WFD) available at: http://ec.europa.eu/environment/water/water-framework/index_en.html [Accessed: July 2024]

Potential Groundwater Dependency[18]	Vegetation Community
	M23 Juncus effusus / acutiflorus-Galium palustre rush-pasture
	W7 Alnus glutinosa-Fraxinus excelsior-Lysimachia nemorum woodland

Protected and Notable Species

Badger

6.4.17 Badgers are present within the study area. Full details of badger field signs are provided in **Appendix 6.2: Confidential Results** and on **Figure 6.6: Confidential Results**. These records were confirmed during the 2023 survey revisit. Badgers are protected under the Badger Protection Act 1992[20] due to species persecution by humans. As these results detail the location of setts, results are to remain confidential and not to be made available to the public. One sett occurs within 10 m of the proposed UGC, therefore mitigation to prevent disturbance would be required. A larger breeding sett is also present within 120 m of the proposed development and thus avoidance to prevent disturbance would be required. A potential badger sett was discovered by contractors in October 2024 during walkover surveys west of Deanie Substation. Pre-works protected species surveys will be required in all instances. Mitigation is detailed in **Table 6.6**.

Otter

6.4.18 Otters are present on the Deanie Burn and surrounding watercourses. Full details of otter field signs are provided in **Appendix 6.2: Confidential Results** and on **Figure 6.6: Confidential Results**. Otters are a European Protected Species (EPS) and are protected under the Conservation (Natural Habitats, &c) Regulations 1994 (as amended)[9]. Potential holts, lay-ups (above ground resting places) and spraints (droppings) are present within the survey area. These results have been included within **Appendix 6.2: Confidential Results** as this shows the potential location of holts, which should be treated as sensitive information and not to be made available to the public.

Pine Marten

6.4.19 A potential pine marten den was identified in a mature tree next to Beannachran Burn within 100 m of the proposed cable route corridor, with one of the potential otter holts also having potential as a pine marten den. A pine marten scat was also identified close to Deanie Lodge. These features are shown on **Figure 6.5: Target Notes**.

Water Vole

6.4.20 Suitable water vole habitat is present within the proposed development, notably around water courses and wetland habitat at the eastern extent of the route. Suitable habitat was identified with field signs of water vole present between existing Towers 13 and 16, as shown by **Target Notes 3** and **4**, **Figure 6.5: Target Notes**. Runs (pathways used by water vole), and 20-25 potential burrows were present. Water vole burrows are present within ~6m of the proposed CSE Compound Location (**Target Note 3**, **Figure 6.5: Target Notes**).

Beaver

6.4.21 Signs of beaver (droppings) were recorded on an island within Loch Beannacharan outwith the proposed development. Beavers are a EPS and are protected under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)[9]. Signs of beaver browsing (chewed branches) were also recorded on trees at the edge of the loch at this same location. The surveyor reported an incidental sighting of beaver entering the loch during the golden eagle watching brief surveys undertaken in February 2020. No signs of lodges were recorded on-site

[20] UK Government (1992) Protection of Badgers Act 1992 [online] Available at: https://www.legislation.gov.uk/ukpga/1992/51/contents [Accessed: July 2024]

therefore the development is not considered to have the potential to impact beavers. No further signs were noted during the 2023 re-survey.

Bats

6.4.22 Trees within the proposed development were examined for Potential Roost Features (PRF) following Bat Conservation Trust (BCT) guidance[21]. No trees with PRF were identified therefore are not considered further.

Bird Species

Breeding Birds

6.4.23 The results of the breeding bird surveys are shown on **Figure 6.8: Breeding Bird Survey** and detailed in **Table 6.8**. Of the 18 species recorded as possibly, probably, or definitely breeding within the field study area, one Schedule 1 species[22] was recorded (greenshank *Tringa nebularia*). Six red-listed species of high conservation concern (as listed in Birds of Conservation Concern (BoCC) 4[23]) and five amber-listed species of medium conservation concern were also recorded, as detailed in **Table 6.5**. Common gull *Larus canus*, Golden plover *Pluvialis apricaria*, Grey heron *Ardea cinerea* and Swallow *Hirundo rustica* were recorded on-site, but showing no breeding activity. Common gull is an amber-listed species of medium conservation concern. Details of all other species recorded are included in **Appendix 6.1: Ecology and Ornithology Methodology and Results**.

Table 6.6 Breeding Bird Territories

BTO (British Trust for Ornithology) Code	Species	Breeding Territories			Birds of Conservation Concern (BOCC) Status[24]
		Possible	Probable	Confirmed	
M.	Mistle Thrush *Turdus viscivorus*			1	Red
RZ	Ring Ouzel *Turdus torquatus*	1			Red
S.	Skylark *Alauda arvensis*		1		Red
TP	Tree Pipit *Anthus trivialis*	1	2		Red
TW	Twite *Linaria flavirostris*		1		Red
WC	Whinchat *Saxicola rubetra*	1			Red
CS	Common Sandpiper *Actitis hypoleucos*	2		1	Amber
GK	Greenshank			1	Amber

[21] Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed). The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1.
[22] Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) lists those species of bird protected from disturbance when breeding, in addition to the protection from nest damage/destruction afforded to all nesting birds: http://www.legislation.gov.uk/ukpga/1981/69/schedule/1
[23] Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) *Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man*. British Birds 108, 708–746.
[24] Ibid.

BTO (British Trust for Ornithology) Code	Species	Breeding Territories			Birds of Conservation Concern (BOCC) Status[24]
		Possible	Probable	Confirmed	
	Tringa nebularia				
MP	Meadow Pipit *Anthus pratensis*		2	3	Amber
T.	Teal *Anas crecca*	1			Amber
WW	Willow Warbler *Phylloscopus trochilus*	1		2	Amber

6.4.24 The most numerous bird species recorded were chaffinch *Fringilla coelebs*, meadow pipit *Anthus pratensis* and stonechat *Saxicola rubicola*. The species recorded during the breeding bird surveys are typical of woodland habitats of the Scottish Highlands and are common in the surrounding area.

Breeding Raptors

6.4.25 Golden eagle activity was monitored during vantage point (VP) surveys undertaken in April 2020, when activity by two sub adults was recorded over Deanie Crags.

6.4.26 Further information was acquired from the HRSG has established that two eagle territories overlap with the proposed development. These are referred to as Glen Strathfarrar East Territory and the Glen Strathfarrar West Territory. Further information is detailed in **Confidential Technical Appendix 6.3: HRA**; this contains information regarding nesting eagles and should not be made available to the public.

Glen Strathfarrar East Territory

6.4.27 This territory includes two nesting areas of which have included various eyries. During monitoring surveys in May and June 2022 (breeding season) one sub-adult and one adult golden eagle were recorded behaving territorially across both nesting areas. HRSG monitoring volunteers also report that Deanie Crags are often used by these eagles as winter roosts.

Glen Strathfarrar West Territory

6.4.28 This territory was identified in 2020 by the HRSG and is located approximately 3.5 km south-west of the proposed development. This territory is unlikely to be directly impacted; however, there is the possibility of eagles drifting between this and the Glen Strathfarrar East territory.

6.4.29 The HRA and information to inform an AA for eagles within the Glen Affric to Strathconon SPA is included in **Appendix 6.3**. This includes details of potential impacts and mitigation. NatureScot has reviewed and approved the HRA[25].

6.5 Potential Effects and Mitigation

6.5.1 Potential impacts during construction are detailed in **Table 6.6**, which also details the relevant ecological or ornithological feature and mitigation, or good practice control measures, where appropriate. The impacts associated with the construction phase should also be considered to be representative of worst-case decommissioning impacts, and therefore no separate appraisal of that phase has been completed.

[25] NatureScot were sent the HRA on the 3rd September 2020. NatureScot completed a review of the HRA and approved the assessment as satisfactory on 15th September 2020.

Construction

Table 6.6 Potential Impacts on Ecology and Ornithology during Construction and Relevant Mitigation / Good Practice Control Measures

Potential Impact	Feature	Mitigation / Good Practice Control Measures Proposed
Vegetation clearance, horizontal directional drilling, excavation and burying of UGC, removal of existing OHL and installation of OHL.	Designated sites (SAC, SSSI, SPA and ancient woodland). Habitats likely to be disturbed during construction by removal of OHL – wet dwarf shrub heath, wet modified bog, blanket sphagnum bog, broadleaved and mixed woodland, bracken, acid grassland, improved grassland and flush/spring habitat. Habitats likely to be disturbed by installation of UGC, OHL and CSE towers: wet dwarf shrub heath, wet modified bog, blanket sphagnum bog, broadleaved and mixed woodland, bracken, acid grassland, improved grassland and flush / spring habitat. GWDTE are considered separately below.	• Existing, or temporary, access tracks to be used as much as possible. • Habitats which occur within the SAC and SSSI and are likely to be directly impacted by removal of OHL includes - improved acid grassland, improved grassland, wet dwarf shrub heath, sphagnum blanket bog and spring / flush habitats. These habitats to be reinstated following construction activities, particularly in areas of temporary access, UGC trenching and removed tower locations. • Habitats which occur within the SAC and SSSI and are likely to be directly impacted by construction of Tower 13R CSE compound, access track, OHL and UGC include: acid grassland, improved grassland, wet dwarf shrub heath and flush / spring habitat. These habitats to need to be reinstated following construction activities, particularly in areas of temporary access, UGC trenching and removed tower locations. • HDD when installing UGC to avoid impacts on watercourses and the trees around them as no works would occur in or immediately around the watercourses. • The UGC crosses an area of broadleaved woodland south of existing Tower 12. There is a presumption against removing any woodland from the proposed development area. However, if this cannot be avoided by micro siting cable routes then felling should be as minimal as possible directly over the UGC route. All works should avoid damage to woodland when working within close proximity. • Avoidance of areas of wet modified bog, wet / dry dwarf shrub heath, sphagnum blanket bog and springs / flushes. Floated access tracks/bog mats and low ground-pressure vehicles to be used to cross these habitats if required for access. Disturbance of Annex 1 habitats is discussed below; and • Engagement with the SEPA to occur regarding any excavated peat reuse and disposal, where required. However, it is not anticipated that there would be a need for peat disposal as all excavated material to be reused.
Disturbance / loss of Annex 1 habitats[26] from excavation and burying of cable, removal of	Wet dwarf shrub heath, blanket bog (Annex 1 habitat, Highland BAP and UKBAP habitat).	• There is potential to impact an area of blanket bog during the construction and operation of the proposed CSE Compound Access Track. This feature would traverse a section of this habitat between the existing track and existing Tower 13. The track would cross approximately 117 m of blanket bog habitat and will measure 6 m wide. This habitat should be avoided where possible, if not feasible then floating access tracks / bog mats and low ground-

[26] http://archive.jncc.gov.uk/default.aspx?page=1379

Potential Impact	Feature	Mitigation / Good Practice Control Measures Proposed
existing OHL and installation of new OHL.		pressure vehicles to be used to cross this habitat. During construction of track, peat layers should be removed in turfs and stored on-site, to be reinstated post construction. • Avoidance of wet dwarf shrub heath is not possible when installing the UGC and removing the existing OHL. This is the most common habitat type associated with the proposed development. Floating access tracks / bog mats and low ground-pressure vehicles to be used to cross this habitat. Trench breakers installed when channelling through sloping ground (i.e. south-east of Deanie Substation) will be used to prevent damage to this habitat caused by water flow along cable trench. • Peat probing surveys will be undertaken to identify areas of deeper peat to be avoided, where possible. Disturbance of peat should be minimised to prevent habitat degradation and unnecessary release of carbon emissions. • Where peat is encountered during excavations (which is likely under wet dwarf shrub heath and blanket bog), the excavated peat materials to be temporarily stored prior to being reinstated. The temporary storage of such excavated peat shall seek to minimise disturbance of deposits by minimising haul distance between temporary peat storage sites and re-use areas. In general, it shall be a priority to avoid a single site dedicated temporary peat storage area. A progressive construction method which re-cycles peat through excavation and timely re-instatement in a continuous process shall be adopted for the excavation of the cable route. Excavated peat to be stored on geo-textile matting providing protective barrier to the underlying soils and vegetation. The geo-textile shall be designed to prevent ingress of groundwater and erosion and de-stabilisation of the base of the stored peat. Peat shall be stored to a maximum depth of 1m with the peat turfs stored separately from underlying peat. The peat turfs or vegetation layer shall be stored in a single layer and a system of watering the stored peat and turfs / vegetation shall be in place to ensure that the peat remains damp. • Immediate reinstatement of wet dwarf shrub heath and blanket bog turfs following construction activities, particularly in areas of temporary access, removed tower location sites and following excavation of the cable trench. • It is not anticipated that there would be a need for peat disposal as all excavated material to be reused.
Disturbance / loss of GWDTEs from removal of existing line, construction of UGC and new OHL.	GWDTEs The existing Towers occur over habitat identified as potentially moderately GWDTEs. The UGC route cross areas of potentially moderate GWDTEs and a small area of potentially highly GWDTEs.	• Avoidance of areas of wet modified bog, wet dwarf shrub heath and springs / flushes, where possible. If not possible, floated access tracks/bog mats and low ground-pressure vehicles to be used to cross these habitats. • Immediate reinstatement of habitats following construction activities. • Clean runoff (i.e. non-silty surface water flow, including that which has not passed over any disturbed construction areas) should be kept separate from potentially contaminated water as far as possible. Where required, interceptor ditches and other drainage measures could be installed to safeguard clean runoff from disturbed areas. • Inclusion of areas with moderate and high GWDTEs within the CEMP. A suitably qualified ECoW to input into the CEMP to ensure appropriate mitigation measures are in place, and to reduce any impacts. • Minimising the extent of construction work within wetland habitat.

Potential Impact	Feature	Mitigation / Good Practice Control Measures Proposed
Disturbance to ecological features from construction, lighting, noise, excavations and access.	Designated sites: • Disturbance to SPA, SAC and SSSI species or habitats. Protected species: • Badger – potential disturbance to active setts. • Otter – disturbance to otters utilising the water courses (East Deanie Burn) and to potential holts situated between 30-100m from the LOD. • Pine marten – disturbance to potential den situated within 100 m of the UGC. • Water vole – disturbance to water vole habitat and potential burrows ~6m from proposed CSE compound location.	• Impacts upon designated sites from construction activities are unlikely to be significant as they would be of a low magnitude, temporary and reversible. No works to occur in the River Farrar or East Deanie Burn. Impacts on SPA features considered in subsequent section of this table. • Undertake pre-construction surveys for protected species no more than eight months prior to construction and removal works. If the results indicate the presence of protected species additional to those recorded to date, an appraisal of the mitigation on the species to be completed and appropriate mitigation measures identified (if required), such as micro-siting of UGC route, access roads, laydown areas, infrastructure etc. Relevant SPPs to be included in the CEMP and be followed. • All infrastructure for the proposed development to be micro-sited a minimum of 30 m from any active badger sett, where possible, to avoid damaging or destroying the setts and disturbing the species. If this is not possible, and disturbance to setts is likely, then works to occur under a NatureScot licence and be monitored by an ECoW during construction. This would be detailed in the SPP included in the CEMP. For instance, the satellite badger sett located within 10 m of the proposed UGC (see Confidential Target Note 1, **Figure 6.6**: Confidential Results) would require a NatureScot licence to disturb the sett unless the UGC (including trench and adjacent working area) can be micro-sited to a minimum of 30 m from the sett. This is also the case for the sett entrance located near the CSE compound access track (see Confidential Target Note 4, **Figure 6.6: Confidential Results**), a 30 m buffer will need to be considered around this entrance when planning the access route. • The main badger sett (which consists of multiple sett entrances) is situated within proximity to existing Tower 13 and the proposed CSE compound. A 30 m buffer around these entrances would need to be considered when planning access routes, laydown areas and other associated infrastructure for construction of Tower 13R and the CSE compound (see Confidential Target Notes 2-22, **Confidential Figure 6.6: Confidential Target Notes**). A SPP should be followed during works within proximity to badger setts, included in the CEMP. • All infrastructure for the proposed development to be micro-sited a minimum of 30 m from any potential otter holts (see Confidential Target Notes 27-29, **Figure 6.6: Confidential Results**) where possible to avoid damaging or disturbing this species. If this is not possible then a disturbance licence will be required from NatureScot. A SPP should be followed while undertaking works (i.e tower dismantling) within proximity to watercourses (such as East Deanie Burn) or previously identified potential otter holts or lay-ups (see Confidential Target Notes 27-29 (Holts) and Target Notes 30-31 (lay-ups), **Confidential Figure 6.6: Confidential Target Note**). • All infrastructure for the proposed development to be micro-sited a minimum of 30 m from any potential pine marten den (see Target Note 2, **Figure 6.5: Target Notes**) avoiding woodland habitat, where possible to avoid damaging or disturbing the potential den. Any disturbance would have to be licenced by NatureScot and monitored by an ECoW. A SPP should be followed, detailed in the CEMP.

Potential Impact	Feature	Mitigation / Good Practice Control Measures Proposed
		• All infrastructure for the proposed development to be micro-sited a minimum of 30 m from any potential water vole habitat or burrows (see Target Note 3, **Figure 6.5: Target Notes**), where possible as to avoid damage and/or disturbance to this species and dwellings. A pre-construction survey to identify burrows and mark out a disturbance buffer to be maintained where appropriate (See Target Note 3, **Figure 6.5: Target Notes**). Any disturbance would have to be licenced by NatureScot and monitored by an ECoW. A SPP to be followed during works especially along water courses and appropriate habitat such as around Tower 13 and the proposed CSE Compound area, where potential water vole burrows were recorded and suitable habitat exists (see Target Note 3, **Figure 6.5: Target Notes**). • A suitably qualified ECoW to input into the CEMP to ensure appropriate mitigation measures are in place, ensure pre-construction surveys are undertaken and to reduce any disturbance impacts.
Destruction of bird nests.	Breeding birds.	• Ground or vegetation clearance works to be undertaken outside the main bird nesting season (March–September, inclusive), if possible. If this is not possible, a suitably experienced ecologist to check the proposed development prior to construction to determine if nesting birds are present. If nesting birds are found, a suitable buffer zone to be implemented around the nest, with no work in this zone until the young have fledged or the nest is no longer in use.
Disturbance to breeding golden eagle (from construction, lighting, noise, excavations and access).	Golden eagle – proposed development occurs within 1 km of a known eyries (nest sites): • Direct disturbance during breeding resulting in a failed breeding attempt. • Indirect disturbance from loss or disturbance to prey habitat.	• Mitigation measures for golden eagle are detailed in **Appendix 6.3**. • Works to take place outside the periods of breeding activity for golden eagle (February to October) to prevent disturbance during breeding and fledging, where the works are within 1 km of the eyrie. Works with the potential to cause significant disturbance would not occur before 9 am or after 4 pm as to prevent disturbing eagles which are roosting on the surrounding Crags. This applies throughout the year, within 1 km of the eyrie. • Monitoring of works to take place under the watching brief of a suitably qualified ECoW. Works to be carried out based on a PSRA.
Pollution (e.g. oil spill, siltation of watercourses or dust).	Designated sites (Strathglass Complex Special Area of Conservation SAC and Glen Strathfarrar SSSI). Habitats (particularly running water).	• HDD to avoid impacts on larger watercourses as no works would occur in or immediately around the watercourses. Good practice guidance[27] to be followed when working close to or crossing smaller watercourses. • The CEMP to include standard pollution prevention guidelines, such as silt fencing and traps, during the construction phase to ensure that no water or air borne pollutants reach ecological / hydrological features.

[27] SEPA (2009) Engineering in the Water Environment Good Practice Guide. Temporary Construction Methods [online] Available at: https://www.sepa.org.uk/media/150997/wat_sg_29.pdf [Accessed: July 2024]

Operation

Table 6.7 Potential Impacts on Ecology and Ornithology during Operation and Relevant Mitigation / Good Practice Control Measures

Potential Impact	Feature	Mitigation/Good Practice Control Measures Proposed
Disturbance and displacement due to maintenance activities and presence of site personnel.	Designated sites (golden eagle from Glen Affric to Strathconon SPA, Strathglass Complex Special Area of Conservation SAC, Glen Strathfarrar SSSI and ancient and semi-natural woodland) and habitats (if any portion of the cable needs to be excavated for maintenance). Protected species (badger, otter, pine marten and water vole) and breeding birds.	Unlikely to be required as disturbance would be at a very low level, with vehicles utilising existing access roads already used by similar low levels of vehicular traffic to that which would be required.
Pollution (e.g. oil spill from vehicles accessing proposed development for maintenance activities).	Designated sites (Strathglass Complex SAC and Glen Strathfarrar SSSI) and habitats including terrestrial and watercourses.	Operations staff would have their own RAMS that they would follow in order to manage environmental risks from their work, such as oil spills.

6.6 Habitats Regulations Appraisal

6.6.1 As the proposed development has the potential to impact the qualifying features of the Glen Affric to Strathconon SPA (breeding population of golden eagle), resulting in a potential significant effect, a detailed HRA is required to be undertaken by the competent authority (in this case, The Highland Council). This HRA informs an AA and is provided in **Appendix 6.3**. The appraisal considers the potential impacts in further detail with regards to the conservation objectives, golden eagle activity, population integrity and any likely significant effects on the SPA. Mitigation measures to minimise the disturbance to golden eagle have also been detailed as evidence.

6.6.2 The assessment undertaken to inform the HRA in **Appendix 6.3** concludes that there would be no significant effects on the SPA providing the mitigation is followed to prevent disturbance to breeding golden eagle. Mitigation, detailed fully in **Appendix 6.3**:

- Standard mitigation measures should be implemented during the construction and decommissioning of the proposed development to prevent disturbance to eagles during the breeding season. This includes timing of works and watching briefs.
- Works should take place outside of the periods of breeding activity for golden eagle (February to October) to prevent disturbance during breeding and fledging. Works should not occur before 9 am or after 4 pm as to prevent disturbing eagles which are roosting on the surrounding Crags.
- Monitoring of works would need to take place under the watching brief of a suitably qualified ECoW. Works would be carried out based on a PSRA.
- Consequently, there would be no significant adverse residual effects on the Glen Affric and Strathconon SPA or its qualifying species through the implementation of appropriate mitigation measures.

6.7 Residual Effects

6.7.1 Implementation of the proposed CEMP would avoid any likely adverse effects from disturbance on designated site features (golden eagles) and habitats, with no residual effects.

6.7.2 The majority of habitats would be reinstated following completion of construction of the proposed development, resulting in an adverse effect for the short to medium term, until the habitats have re-established. As a result, no significant long-term residual effects are predicted.

6.7.3 The recovery of habitats through natural regeneration and the end of vegetation clearance within what was the existing OHL corridor could lead to a beneficial residual effect but this is dependent on subsequent management of the reinstated, which would be under the control of the landowner.

6.7.4 Following the implementation of mitigation such as micro-siting, NatureScot licencing, and a pre-construction protected species survey, no residual effects are predicted on protected species.

6.8 Conclusion

6.8.1 The appraisal of the proposed development has identified potential impacts on designated sites (Strathglass Complex SAC, Glen Strathfarrar SSSI and Glen Affric to Strathconon SPA), habitats (particularly dry dwarf shrub heath, wet dwarf shrub heath, blanket bog, wet modified bog and watercourses), GWDTE, golden eagle (from the SPA), badger, otter, pine marten, water vole and breeding birds. Proposed mitigation includes habitat reinstatement, the avoidance of sensitive habitats and protected species, a CEMP to include measures to protect ecological and ornithological features (including SPPs) and a suitably qualified ECoW to input into the CEMP to ensure appropriate mitigation measures are in place. For golden eagles, construction activities and timings would be restricted within the disturbance buffer area and works undertaken under a watching brief by an ECoW according to a PSRA. Proposed mitigation also includes compulsory pre-construction surveys for other aforementioned protected species and surveys for breeding birds if work in the breeding bird season cannot be avoided.

7. CULTURAL HERITAGE

7.1 Executive Summary

7.1.1 A detailed desk-based assessment and a walkover field survey have been undertaken to inform the appraisal of the potential effects of the proposed development on cultural heritage.

7.1.2 Twenty non-designated heritage assets have been identified by the study, centred on the proposed UGC route and along the existing OHL that would be removed by the proposed development. These records mostly relate to medieval and later settlement and land use. There is one heritage asset of prehistoric date recorded in the Historic Environment Record (HER), and five assets recorded in the HER are of modern (20th Century) date and relate to the Deanie Hydro-electric Power Station.

7.1.3 There are no Scheduled Monuments, no Listed Buildings and no other designated heritage assets within this the study area. Effects on designated heritage assets have been scoped out of the appraisal, as was agreed during consultation with Historic Environment Scotland (HES).

7.1.4 Mitigation measures have been set out that would ensure, where appropriate, that known heritage assets that lie within the UGC construction easement, or within working areas around existing towers, or along the route of the existing OHL that is to be decommissioned and dismantled, would be avoided as far as practicable. The possibility that unexpected, buried remains may be encountered within the construction easement for the cable installation has been appraised, based on the recorded evidence within the study area for settlement in the prehistoric period (12) and 18th Century (4a-p), as being low to moderate. This is particularly the case where the proposed UGC passes through the former Bencharn farming township (4a-p) and a large probable stock enclosure (5), both of which occupy low-lying ground along the valley bottom, where the ground is more suitable for settlement and agricultural activities.

7.2 Introduction

7.2.1 This section identifies the likely effects of the proposed development on cultural heritage and archaeology (hereafter referred to as 'heritage assets'). It details the results of a desk-based assessment and field survey covering a study area centred on the route of the existing OHL, proposed for removal, and the route of the proposed UGC route. It provides an appraisal of the potential direct effects of the proposed development on non-designated heritage assets arising from installation of the proposed UGC (**Figure 7.1**; **Appendices 7.1** and **7.2**).

7.2.2 Through consultation with HES, it was agreed that effects on the settings of designated heritage assets within HES remit could be scoped out as there are no designated heritage assets along the part of Strathfarrar within which the proposed development work is to take place.

7.2.3 The appraisal was conducted in accordance with the Chartered Institute for Archaeologists' Code of Conduct' (2019) and Standard and Guidance for Historic Environment Desk-based Assessment (2017), using information provided by HES and The Highland Council Historic Environment Team (HET).

7.2.4 The objectives of the appraisal were to:

- Describe the cultural heritage baseline, including identifying archaeological potential, within the study area;
- Identify the potential construction (direct) effects of the proposed development on heritage assets;
- Identify any indirect effects (effects on the settings of designated heritage assets) resulting from the proposed development; and
- Identify any mitigation measures proposed to address likely effects.

7.2.5 The chapter is supported by:

- **Appendix 7.1: Gazetteer of Heritage Assets within the Study Area (OHL and Cable Route)**;

- **Appendix 7.2: Tables of Mitigation Measures**;
- **Appendix 7.3: Cultural Heritage Figure**; and
- **Figure 7.1: Cultural Heritage: Constraints Plan**.

7.3 Methodology

Study Area

7.3.1 The study area employed for the cultural heritage appraisal comprises the 120 m underground cable (UGC) easement and also includes the site boundary around T13-T15 and the proposed Deanie Substation, a 60 m wide corridor centred on the existing OHL, and the area in between. This was used to establish the archaeological baseline and to identify any potential direct impacts upon heritage assets resulting from construction of the proposed development, including access routes.

Consultations

7.3.2 Consultations were undertaken with HES and with HET. Summaries of the responses received, and actions taken are set out in **Table 7.1**.

Table 7.1 Consultation Responses

Consultee	Response	Action
HES consultation response (17/09/2020)	Confirmed that there are no designated heritage assets within HES remit within the proposed study areas. HES therefore had no comments to make on the proposal.	Noted. There are no designated heritage assets within this part of Strathfarrar. Appraisal of effects on the settings of heritage assets is scoped out of the appraisal.
HET consultation response (22/01/2021)	Recommended evaluative excavation for former buildings. Dependent upon the results, further excavation may be required to ensure a good record of the structure(s) and any associated features. A quadrant of each directly impacted cairn should be excavated to see if there is any structure to them.	Noted. The mitigation recommendations proposed by HET have been incorporated into the appraisal (**Section 7.6.1**).

Desk Study

7.3.3 The following information sources were consulted as part of the desk-based assessment:

- The Highland Council Historic Environment Record (HER)[28]: for the acquisition of data for all known assets within the study area;
- HES Spatial Data Warehouse[29]: provided up to date data on the locations and extents of designated heritage assets (Scheduled Monuments, Listed Buildings, Conservation Areas, Inventory status Garden and Designed Landscapes and Inventory status Historic Battlefields) within the study area;
- The HES database (Canmore)[30]: for any information additional to that contained in the HER;

[28] The Highland Council HER [onloine] Available at: https://her.highland.gov.uk/map [Accessed: July 2024].
[29] Historic Environment Scotland (2024) [online] Available at: http://portal.historic-scotland.gov.uk/spatialdownloads [Accessed: July 2024].
[30] Historic Environment Scotland database (2024) Canmore [online] Available at: http://pastmap.org.uk/ [Accessed: July 2024].

- Historic Land-Use Assessment Data for Scotland (HLAMap)[31]: for information on the historic land use character of the study area;
- Map Library of the National Library of Scotland [32]: for Ordnance Survey (OS) maps and other historical map resources; and
- Modern aerial photography (Google Earth[33]; Bing Maps[34]; and ESRI World Imagery[35]): for the identification of low relief earthwork remains potentially of archaeological origin.

Field Survey

7.3.4 Following on from the desk-based assessment work, walkover field surveys were carried out over the study area described above. An initial survey was carried out in September 2020 in good weather (dry and bright), and ground conditions were suitable for the identification of low relief features. An additional survey was carried out in May 2023, in similarly good conditions.

7.3.5 The aims of the field survey were to:

- Assess the baseline condition of the known heritage assets identified through the desk-based assessment;
- Identify any further features of cultural heritage interest not detected through the desk-based assessment; and
- Identify areas with the potential to contain currently unrecorded buried archaeological remains.

Appraisal of Effects

7.3.6 The effects of the proposed development on heritage assets have been appraised based on their type (direct effects and effects on setting) and nature (adverse or beneficial). The appraisal takes into account the value / sensitivity of the heritage asset and its setting and the magnitude of the predicted impact.

- Adverse effects are those that detract from or reduce cultural significance or special interest of heritage assets; and
- Beneficial effects are those that preserve, enhance or better reveal the cultural significance or special interest of heritage assets.

7.3.7 As it has been agreed through consultation with HES that there are no designated heritage assets within HES remit within the proposed study areas, operational effects on cultural heritage have been scoped out of further appraisal.

Assigning Sensitivity to Heritage Assets

7.3.8 Cultural heritage assets are given weight through the designation process. Designation ensures that sites and places are recognised by law through the planning system and other regulatory processes. The level of protection and how a site or place is managed varies depending on the type of designation and its laws and policies[36] .

7.3.9 **Table 7.2** summarises the relative sensitivity of those heritage assets relevant to the proposed development (excluding, in this instance, World Heritage Sites and Marine Resources).

[31] Historic Land-Use Assessment Data for Scotland (2024) (HLAMap). [online] Available at: http://hlamap.org.uk/ [Accessed: July 2024].
[32] National Library of Scotland (2024). [online] Available at: https://maps.nls.uk/ [Accessed: July 2024].
[33] Google Earth (2024) [online] Available at: https://www.google.com/earth/versions/#download-pro [Accessed: July 2024].
[34] Bing Aerial (2024) [online] Available at: https://www.bing.com/maps/aerial [Accessed: July 2024].
[35] ESRI Imagery [online] Available at: https://www.esri.com/en-us/arcgis/products/imagery-remote-sensing/capabilities/ [Accessed: July 2024].
[36] HES (2019) 'Designation Policy and Selection Guidance' Historic Environment Scotland, Edinburgh.

Table 7.2 Sensitivity of Cultural Heritage Assets

Sensitivity	Definition / Criteria
High	Assets valued at an international or national level, including: • Scheduled Monuments; • Category A Listed Buildings; • Inventory Gardens and Designed Landscapes; • Inventory Historic Battlefields; and • Non-designated assets that meet the relevant criteria for designation.
Medium	Assets valued at a regional level, including: • Archaeological sites and areas that have regional value (contributing to the aims of regional research frameworks) Archaeological Sensitive Areas (ASA) (where these are identified in Local Authority records); • Category B Listed Buildings; and • Conservation Areas.
Low	Assets valued at a local level, including: • Archaeological sites that have local heritage value; • Category C Listed Buildings; and • Unlisted buildings and townscapes with local (vernacular) characteristics.
Negligible	Assets of little or no intrinsic heritage value, including Artefact find-spots (where the artefacts are no longer in-situ and where their provenance is uncertain). Poorly preserved examples of particular types of minor historic landscape features (e.g. quarries and gravel pits, dilapidated sheepfolds etc.).

Appraising Magnitude of Impacts

7.3.10 Criteria for appraising the magnitude of impacts (adverse or beneficial), which measures the degree of change to the baseline condition of a feature that would result from the construction of one or more elements of the proposed development, are presented in **Table 7.3**.

Table 7.3: Magnitude of Impact

Magnitude of Impact	Definition	
	Adverse	Beneficial
High	Changes to the fabric or setting of a heritage asset resulting in the complete or near complete loss of the asset's cultural significance. Changes that substantially detract from how a heritage asset is understood, appreciated, and experienced.	Preservation of a heritage asset in situ where it would otherwise be completely or almost completely lost. Changes that appreciably enhance the cultural significance of a heritage asset and how it is understood, appreciated, and experienced.
Medium	Changes to those elements of the fabric or setting of a heritage asset that contribute to its cultural significance such that this quality is appreciably altered.	Changes to important elements of a heritage asset's fabric or setting, resulting in its cultural significance being preserved (where this would otherwise be lost) or restored.

Magnitude of Impact	Definition	
	Adverse	Beneficial
	Changes that appreciably detract from how a heritage asset is understood, appreciated, and experienced.	Changes that improve the way in which the heritage asset is understood, appreciated, and experienced.
Low	Changes to those elements of the fabric or setting of a heritage asset that contribute to its cultural significance such that this quality is slightly altered. Changes that slightly detract from how a heritage asset is understood, appreciated, and experienced.	Changes that result in elements of a heritage asset's fabric or setting detracting from its cultural significance being removed Changes that result in a slight improvement in the way a heritage asset is understood, appreciated, and experienced.
Negligible	Changes to fabric or setting of a heritage asset that leave its cultural significance unchanged and do not affect how it is understood, appreciated, and experienced.	

Appraisal of Level of Effect

7.3.13 The sensitivity of the asset (**Table 7.2**) and the magnitude of impact (**Table 7.3**) are used to inform the professional judgement of the potential significance of effects. **Table 7.4** summarises the criteria for assigning the level of an effect.

Table 7.4: Matrix for Determining Level of Effect

Magnitude of Impact	Sensitivity of Asset			
	High	Medium	Low	Negligible
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

7.3.14 The level of residual effect, taking into account the effectiveness of proposed mitigation, is classified as major, moderate, minor or negligible, as defined in **Table 7.5**.

Table 7.5: Definitions of Level of Effect Criteria

Level of Effect	Definition
Major	A change to the fabric or setting that leads to a substantial and material effect on the character, quality or context of a receptor.
Moderate	A change to the fabric or setting that leads to a partial and material effect on the character, quality or context of a receptor.
Minor	A change to the fabric or setting that leads to a detectable but non-material effect on the character, quality or context of a receptor.
Negligible	A change to the fabric or setting that leads to, at most, a negligible effect on the character, quality or context of a receptor.

Limitations to the Appraisal

7.3.15 The appraisal has used, as its primary source, data derived from The Highland Council HER, acquired via the online Pastmap portal[37] in 2020, 2023 and 2024, and cross checked with the HER online portal[38]. It is assumed that the data obtained is an accurate reflection of the known heritage assets within the study area and that the dataset was up to date at the time of its acquisition and that detailed field survey of the area will have recorded all upstanding cultural heritage assets within the Site Boundaries.

7.4 Baseline

7.4.1 A full list and description of the heritage assets discussed below are provided in **Technical Appendix 7.1: Gazetteer of Heritage Assets**.

Prehistoric Remains

7.4.2 A well-preserved hut-circle (12) occupies an elevated position in improved pastureland above, and on the east side of, the East Deanie Burn at the east end of Loch Beannacharan. The hut circle is the remains of a later prehistoric dwelling and is assessed as being of heritage value at the regional level and to be of medium sensitivity.

Medieval / Post-medieval Settlement and Farming

7.4.3 A large farm called 'Bencharn' (4a-p) with at least 18 structures is shown on May's Estate map (1758) along with 16 acres of arable (Wordsworth, J. undated report)[39]. Field survey found that there are remains of the farmstead in the improved pastureland around Lochanside Lodge (3), these include building remains (4a), (4b) and an enclosure (4c) together with numerous field clearance cairns (4f – 4p), fragmentary remains of an old field bank (4e) and remains of an enclosing head-dyke (4d). The arrangement of structures shown on May's map is not evident on the ground. The surviving remains are fragmentary and the two buildings (4a and 4b) and the enclosure (4c) identified are visible as only low relief features. As the fragmentary remains of a farmstead likely to be of 18th Century date, the farmstead remains are assessed as being of heritage value at the local level and to be of minor sensitivity.

7.4.4 A second farm, named as 'Deanie' (11), also appears on May's Estate map (1758). The farm had 29 acres of arable and six buildings (Wordsworth, J. undated report) but has been much modified in the 19th Century and now survives as an unoccupied farmhouse and L-shaped steading range with two additional buildings to the north-west and enclosed and fenced fields either side of the Deanie Burn. The farmland is now used as a deer park, incorporating banks (17a-b) of an earlier filed system within its fenced boundaries. As a farmstead likely to be of 18th Century date but much modified from its original layout, the farmstead is assessed as being of heritage value at the local level and to be of minor sensitivity.

7.4.5 Field survey identified the footings of a single rectangular building (9), not shown on any historic maps, lying in an elevated position in rough grazing moorland to the south-west of Deanie and 70 m east of tower 11. The remains are those of a building, measuring 11 m long east to west by 4 m wide, defined by wall footings 0.6 m wide and 0.3 m high. The footings of another structure (16) of similar dimensions were recorded within low-lying rough moorland to the east of Deanie, to the east of an area of north-south orientated rig and furrow cultivation (13) and several field banks (15a-d) linked to the Deanie field system (17a-b). The rig survives in good condition, up to 0.4 m in height, is situated between two small watercourses and bounded to the north by a head-dyke (15a). Given their location, close to the old farmstead at Deanie (11), it is possible that these are elements associated with the earlier, 18th Century, phase of occupation. As relict features of a farmstead, likely to be of 18th Century

[37] Historic Environment Scotland (2023) Online GIS Portal [online] Available at: http://portal.historic-scotland.gov.uk/spatialdownloads [Accessed: July 2024].
[38] The Highland Council HER (2024) Online Portal [online] Available at: https://her.highland.gov.uk/map [Accessed: July 2024].
[39] Wordsworth, J (undated) 'Glen Strathfarrar SSSI Survey' unpublished report.

date, the structural remains, field banks and cultivation furrows are assessed as being of heritage value at the local level and to be of minor sensitivity.

7.4.6 Field survey identified a probable clearance cairn (17c) situated within the deer farm and probably related to the earlier phase of farming. It measures 2.5 m in diameter and is heaped 0.6 m high atop an outcrop of bedrock. As a minor feature related to prior cultivation of the enclosed fields, it is assessed as being of little or no heritage value and is assessed as being of negligible sensitivity.

Modern

7.4.7 Deanie Power Station (1) and other associated remains (2 and 3) is a modern, 20th Century hydro-electric power station situated at the west end of Loch Beannacharan. It is still operational and the former staff housing, Lochanside Lodge (3), is now occupied as residential housing. As a component part of 20th Century hydro power development in the Highlands, the power station and associated remains are assessed as being of heritage value at the local level and to be of minor sensitivity.

7.4.8 Field survey identified two concrete platforms (19 and 20), situated to the north and south of the road, to the south-west of Deanie Power Station (1). The southernmost platform (19) measures 15 m by 10 m and is devoid of internal features. To the north (20), a level platform 21 m in length features eight narrow plinths or mounts, each set with metal pins for supporting machinery. These were presumably foundations for 20th Century construction buildings associated with the hydroelectric works. As such, the remains are assessed as being of heritage value at the local level and to be of minor sensitivity.

Miscellaneous

7.4.9 Field survey found that there are no appreciable remains of a large enclosure (5), shown on the OS 1st edition map (1876) and which was probably a stock enclosure or pasture field. Possible fragmentary remains are visible on modern aerial photography (Google Earth), but no definitive remains are visible on the ground and there is no evidence on aerial photography or on the ground for any signs of former cultivation. The enclosure has little or no heritage value in its own right and is assessed as being of negligible sensitivity.

7.4.10 Field survey identified a single small heap of stones (8) in heather moorland on a steep slope, 70 m to the west of Tower 9. The possible clearance cairn measures 3 m by 2 m and is 0.4 m high. There is no evidence of any settlement or field system nearby. The stone heap has little or no heritage value and is assessed as being of negligible sensitivity.

7.4.11 Field survey recorded four old quarries (6, 7, 10 and 18). Two of these (6 and 7) are located alongside the road through Strathfarrar, close to the old farmstead of 'Bencharn' (4a-p) and may have provided sources of building stone. A third (10) lies 40 m west of Tower 12 and close to the old farmstead at 'Deanie' (11). It may have provided sources of building stone or alternatively been used in the construction of Tower 12. The fourth quarry (18) contains modern refuse and lies at the end of a modern track to the north of the dam, east of Deanie Lodge. These old quarries are assessed as being of little or no heritage value and are assessed as being of negligible sensitivity.

7.4.12 Field survey observed that no remains survive of a structure (14) recorded to the north of the dam at the east end of Loch Beannacharan. A modern transformer compound has been constructed at the location recorded in the HER and the surrounding area has been resurfaced with asphalt. The site is assessed as being of little or no heritage value and is assessed as being of negligible sensitivity.

Archaeological Potential of the Inner Study Area

7.4.13 The evidence from the desk-based assessment and field survey indicates that there is some archaeological potential for buried archaeological remains in limited areas along this part of Strathfarrar. There is only one record relating to prehistoric settlement (12) and no features potentially of prehistoric date were found during the field survey. No artefacts of prehistoric date have been reported from this part of the Strath. The two recorded farmsteads (4 and 11) evidently have their origins in the 18th Century (possibly earlier), but these have been either

mostly destroyed (4) or appreciably altered (11) since the early to mid-19th Century. It remains possible that buried remains of settlement and farming activities survive as buried deposits within the now improved grassland fields at both locations: around Lochanside Lodge and Deanie Farm.

7.4.14 The ground traversed by the existing OHL is steep and mostly unsuitable for settlement. The only evidence of settlement on the hillside, the remains of an old building (9), was found on an elevated terrace on the otherwise steep sloping ground.

7.4.15 There is evidence in the records in the HER and on Roy's map (1747-55) showing that there was settlement along the length of Strathfarrar in the 18th Century, but the HER does not contain much evidence for settlement in the strath in earlier periods.

7.4.16 Based on the available evidence, it is assessed that there is a low to moderate potential of the presence of buried archaeological remains within the low-lying valley farmland along Strathfarrar. The archaeological potential of higher, steeper ground over which the existing OHL passes has a negligible or low potential for buried archaeological remains to be present.

7.5 Potential Effects

Construction

7.5.1 Direct (physical) effects on heritage assets are most likely to arise from ground-disturbing activities associated with the proposed development that could potentially damage, and possibly destroy, heritage assets, including buried archaeological remains. Direct effects may also occur as a result of above-ground disturbance, for example from vehicle movement over heritage assets or from storage of construction materials on or adjacent to them. Direct effects on heritage assets, arising from the proposed development work, are most likely to be adverse, permanent and irreversible.

7.5.2 The proposed development has the potential to directly (and adversely) affect heritage assets where construction work or other activities are to take place either within the known and demarcated extents of sites or in their immediate proximity. Potential effects could arise, for example, in the following circumstances:

- Where excavation is required for the installation of the UGC, including topsoil removal, within the working easement (120 m wide corridor (60 m either side of UGC alignment));
- Where there is a need to provide access to working areas (tower dismantlement/new pole erection sites) or where work is required to upgrade existing access tracks, either by replacing existing surfaces or expanding tracks (e.g. to create passing places);
- Where ground works are required at existing tower locations in order to remove existing foundations; and
- In any circumstances where ground-breaking work is required for any other purposes associated with the proposed development.

7.5.3 Excluding heritage assets 1 and 2, which are the existing Deanie substation and transformer site (recorded in the HER as components of the Deanie Hydro Power Station), there are 11 historic environment features that could be directly affected by the proposed development.

7.5.4 The old farm, or farming township of Bencharn (4a-p) which is of low sensitivity (**Figure 7.1** in **Appendix 7.1**) will be subject to direct impacts on 13 of its individual features (4b-c, 4e-m and 4o-p). These all lie within the cable working easement and are likely to be directly impacted by construction work. A linear head dyke (4d) runs parallel to the existing OHL and could be directly affected by works associated with dismantlement of Tower 3. The predicted impact on each individual feature is an adverse direct impact of high magnitude (moderate level effect), resulting in the likely loss of each of the features and adversely affecting the overall integrity of the fragmentary remains of the former farm.

7.5.5 A large enclosure (5), of which there are no appreciable remains and which is of negligible sensitivity, would be crossed by the UGC and is likely to be directly impacted by construction work. The predicted impact of the proposed development on the remains of the enclosure is an adverse direct impact of low magnitude (negligible level effect), resulting in partial alteration of the current character of the remains.

7.5.6 Three of the recorded features (6, 7 and 10) are old quarries of negligible sensitivity. Two of the quarries (6 and 7) lies within the cable working easement and is likely to be directly impacted by construction work. The third quarry (10) lies around 40 m west of Tower 12 and could be directly affected by works associated with dismantlement of the tower. The predicted impact of the proposed development on these quarries is an adverse direct impact of medium magnitude (minor level effect), resulting in partial alteration of the current character of the remains where they cannot be avoided.

7.5.7 A possible clearance cairn (8), of negligible sensitivity, lies on steep rocky ground, around 18 m to the north of the existing OHL between Towers 8 and 9, and could potentially be directly affected by any movement of vehicles between the two tower sites. Any potential direct impact could be of high magnitude (minor level effect), resulting in disturbance to the integrity of the character of the feature.

7.5.8 The well-preserved footings of an old building (9), of low sensitivity, lie around 13 m from the existing OHL between Towers 11 and 12, and could potentially be directly affected by any movement of vehicles between the two tower sites. Any potential direct impact could be of medium magnitude (minor level effect), resulting in disturbance to the integrity of the current character of the feature.

7.5.9 An area of rig and furrow (13), of low sensitivity, to the east of the deer farm lies along the proposed access track to Tower 13 and would be directly affected by the construction of the track along the southwest end of the cultivation marks. The predicted impact is an adverse direct impact of medium magnitude (minor level effect), resulting in disturbance to the integrity of the current character of the remains.

7.5.10 Of the field banks (15) of low sensitivity, two field banks (15a and 15d) would be crossed by the proposed access track to the CSE compound and would be directly affected by the construction of the track. A further two banks (15b and 15c) could potentially be directly impacted by any deviation in the route of the proposed access track. The predicted impact on the field banks is an adverse direct impact of medium magnitude (minor level effect), resulting in removal of sections of the banks and disturbance to the overall integrity of the fragmentary remains of the field system.

7.5.11 Two elements of the Deanie field system (17) the substantial turf and stone field boundary (17a) of low sensitivity and a clearance cairn (17c) of negligible sensitivity will be subject to direct impacts. The substantial turf and stone field boundary (17a), forming the eastern boundary of earlier settlement within the Deanie Lodge deer farm (11), lies within the proposed CSE compound and is intersected by the proposed access track to Tower 13. Construction of the compound and the access track would remove small sections of the bank. The predicted impact is a direct adverse impact of low magnitude (negligible level effect), resulting in the disturbance of a limited section of the extensive field boundary. The clearance cairn (17c), of negligible sensitivity, lies within the construction easement for the UGC and could be directly impacts by construction work. The predicted impact is a direct adverse impact of high magnitude (minor level effect), resulting in the likely loss of the feature.

7.5.12 Two concrete platforms (19 and 20) of low sensitivity, lie within the construction easement for the proposed UGC. Construction works for the proposed development could directly impact the platforms. The predicted impact on each platform is a direct adverse impact of high magnitude (moderate level effect), resulting in the likely loss of the features.

7.5.13 It is assessed (**Section 7.4: Baseline**) that there is a low to moderate potential of the presence of buried archaeological remains within the low-lying valley farmland along Strathfarrar, this is most likely the case in the vicinity of Lochanside Lodge (3), where remains of an old farm or farming township (4a-p) have been identified and where the proposed cable route passes through a large enclosure (5) that was probably an old stock enclosure or pasture field. This area is low-lying, generally level ground and would have been attractive for

settlement during any period, evident from the presence of an 18th Century farming settlement (4a-p) and its probable use as enclosed pasture grazing (5). Any potential direct impact on any buried remains of archaeological value that may be present in this area, between Lochanside Lodge (3) and Deanie substation (2) could potentially be of high magnitude (moderate level effect), resulting in disturbance to or the likely loss of any archaeological remains that may be present and the evidence for occupation and past human activity along the strath.

7.6 Mitigation

Construction Phase

7.6.1 NPF4 (2023) provides a mitigation hierarchy: avoid, minimise, restore and offset. Avoidance and minimisation measures can be achieved through design, whilst compensatory measures offset effects that have not been avoided or minimised.

7.6.2 Schedule 9 3(1) of the Electricity Act (1989)[40] - Preservation of amenity and fisheries: Scotland - requires that:

7.6.3 "In formulating any relevant proposals, a licence holder or a person authorised by an exemption to generate, distribute, supply or participate in the transmission of electricity -

a) shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and

a) shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects".

7.6.4 Furthermore, Schedule 9 3(2) requires that:

7.6.5 "In considering any relevant proposals for which his consent is required under section 36 or 37 of this Act, the Secretary of State shall have regard to:

a) the desirability of the matters mentioned in paragraph (a) of sub-paragraph (1) above; and

b) the extent to which the person by whom the proposals were formulated has complied with his duty under paragraph (b) of that sub-paragraph".

7.6.6 The mitigation measures presented below therefore take into account this legislation and planning guidance and provide various options for protection or recording and ensuring that, where practical, surviving assets are preserved intact to retain the present historic elements of the landscape.

7.6.7 All mitigation works presented in the following paragraphs would take place prior to, or, where appropriate, during, the progress of the proposed development. All works would be conducted by an appointed professional archaeological organisation (Archaeological Clerk of Works (ACoW)), and the scope of works would be detailed in one or more Written Scheme(s) of Investigation (WSI) developed in consultation with (and subject to the agreement of) HET on behalf of The Highland Council.

Preservation in situ (avoidance mitigation)

7.6.8 The circumstances in which positive action may be required to avoid potential effects on heritage assets are anticipated in the following circumstances:

- Where known heritage assets are within working areas around existing towers that are to be dismantled and removed;

[40] UK Government (1989) Electricity Act 1989 [online] Available at: https://www.legislation.gov.uk/ukpga/1989/29/contents [Accessed: July 2024]

- Where known heritage assets are intersected by or are within the construction easements for the proposed UGC route, or are intersected by access routes where there is presently no existing track or road;
- Where known heritage assets lie in close proximity to the proposed construction easements, where establishment of the working corridor could directly affect surviving and visible features; and
- Where known heritage assets are intersected by or are immediately beside existing tracks that would be used for access.

7.6.9 Relevant heritage assets that fall into these categories are set out in **Appendix 7.2**, **Table 7.2.1**.

7.6.10 Recommended avoidance mitigation includes the following standard best practice measures:

- Access tracks (existing or proposed). Vehicles and plant would keep to the existing track through Strathfarrar as far as possible. Creation of new temporary tracks (required to provide access to existing towers for dismantlement or to facilitate installation of the UGC) would avoid known heritage assets as far as practicable, and an appropriate mitigation response would be developed and implemented where avoidance is not possible.
- Underground cabling works. Vehicles and plant would keep within the demarcated extent of the construction easement wherever possible. Heritage assets close to the construction easement would be demarcated by a temporary barrier where necessary to protect them during the period of the underground cabling works. The retained ACoW would be consulted about any locations where the proposed works could not avoid a cultural heritage feature, and an appropriate mitigation response would be developed and implemented.
- Removal of the existing OHL. Vehicles and plant would keep within the demarcated extent of the working areas wherever possible. Heritage assets close to the working areas would be demarcated by a temporary barrier where necessary to protect them during the period of the underground cabling works. The retained archaeologist / ACoW would be consulted about any locations where the proposed works could not avoid a cultural heritage feature, and an appropriate mitigation response would be developed and implemented.

7.6.11 Eleven component parts of heritage assets along the proposed UGC route have been identified where preservation in situ is proposed were:

- Six clearance cairns (4f-g and 4l-p), that lie within the 120 m buffer of the UGC alignment, would be marked out for avoidance by the proposed development work. High visibility markers would be placed on the top of each cairn and retained throughout the construction period and only removed following completion of the cable installation work. If it is not possible to route the UGC to avoid the clearance cairns alternative mitigation would be applied.
- Remains of and old building (4b) and those of an old enclosure (4c) close to the UGC easement, would be marked out for avoidance by the proposed development work. High visibility markers would be placed around each feature and retained throughout the construction period and only removed following completion of the cable installation work.
- A concrete platform (19), that lies to the southwest of the existing Deanie substation, would be marked out for avoidance by the proposed development work. High visibility markers would be placed around the edge of the platform and retained throughout the construction period and only removed following completion of the cable installation work.

7.6.12 Three heritage assets along the existing OHL route have been identified where preservation in situ is required:

- The length of a 150 m long sinuous head dyke (4d), north of Lochanside Lodge (3), would be marked out for avoidance by the proposed development work. High visibility markers would be placed along the

top of the head dyke and retained throughout the construction period and only removed following the final dismantlement of the existing OHL.

- A small possible clearance cairn (8), upslope from and between Tower 8 and Tower 9, would be marked out for avoidance by the proposed development work. A high visibility marker would be placed beside the cairn and retained throughout the construction period and only removed following the final dismantlement of the existing OHL.
- The surviving footings of an old building (9), between Tower 11 and Tower 12, would be marked out for avoidance by the proposed development work. High visibility markers would be placed 5 m from the outermost visible parts of the building and retained throughout the construction period and only removed following the final dismantlement of the existing OHL.

7.6.13 One heritage asset along the working corridor for construction of the UGC has been identified where preservation in situ is required:

- A concrete platform for a machine base (20), to the southwest of existing Deanie substation, would be marked out for avoidance by the proposed development work. High visibility markers would be placed beside the platform and retained throughout the construction period and only removed following the completion of the OHL work.

7.6.14 Two heritage assets along the proposed access route to Tower 13 have been identified where preservation in situ is required:

- Two field banks (15b and 15c), that lie to the southeast of Tower 13, would be marked out for avoidance by the proposed development work, if it is possible to do so. High visibility markers would be placed along the top of each bank and retained throughout the construction period and only removed following completion of the CSE compound and access track. If it is not possible to avoid the banks, alternative mitigation agreed with the ACoW would be applied.

Preservation by Record (reduction/offset mitigation)

7.6.15 Where assets cannot be avoided by the proposed development, they would be subject to an appropriate level of archaeological investigation. Where excavation is required, the mitigation would include post-excavation processing and analysis to a standard satisfactory to the Council, and the subsequent reporting of the results of the works.

7.6.16 Relevant heritage assets that fall into these categories are set out in **Appendix 7.2**, **Table 7.2.2**.

7.6.17 Six heritage assets have been identified where archaeological investigation is required in order to secure preservation by record prior to the loss of the remains as a result of the proposed development:

- Five clearance cairns (4h-k and 17c) would be subject to archaeological investigation by quarter section sample excavation. The aim would be to record the character of the cairns, and to obtain any available evidence for the date of their construction, and to recover any artefacts encountered.
- An old field bank (4e) would be subject to archaeological investigation by excavation of a cross-section through the bank. The aim would be to record the character of the bank, to obtain any available evidence for the date of its construction, and to recover any artefacts encountered. It is proposed that the excavation of the field bank be carried out during a watching brief while excavating the access track.
- If it proves not possible, for engineering reasons, to avoid two old field banks (15b and 15c), they would be subject to archaeological investigation by excavation of a cross-section through the banks. The aim would be to record the character of the banks, to obtain any available evidence for the date of their construction, and to recover any artefacts encountered.

Archaeological Watching Briefs

7.6.18 Where the proposed UGC route passes through the remains of an old farm or farming township (4a-p) and the site of an old enclosure (5), a watching brief on all topsoil removal would be undertaken and any remains encountered subject to an appropriate level of investigation and recording to a strategy to be agreed in advance with HET on behalf of The Highland Council. The aim would be the recovery of archaeological information and ensuring the preservation by record of any remains or artefacts encountered.

7.6.19 Where the proposed CSE compound and access track passes an area of rig and furrow cultivation (13) and intersects three field banks (15a, 15d and 17a), a watching brief would be maintained and any features or remains encountered subject to an appropriate level of investigation and recording to a strategy to be agreed in advance with HET on behalf of The Highland Council. The aim would be to offset the impact of the construction works through the preservation by record of any remains or artefacts encountered.

No Mitigation

7.6.20 There is one individual features of low heritage value within the old farming township (4a-p) which lie outside the UGC easement, which would be avoided by the proposed development and where no mitigation is required:

- Remains of a small building (4a) lie alongside the existing road and abut a large boulder and would not be affected by construction work.

7.6.21 There are three assets of no intrinsic archaeological value where no mitigation is required:

- A large quarry (6) of negligible sensitivity lies within the 120m buffer of the UGC and may be removed by construction works.
- A large old quarry (7) of negligible sensitivity lies along the proposed route of the UGC and would be removed by construction works.
- A small old quarry (10) of negligible sensitivity lies within 40 m of Tower 12 which is to be dismantled and removed as part of the proposed development.

7.6.22 The quarries are of no intrinsic archaeological value and no mitigation is required in order to offset the direct effect identified (**Appendix 7.2**, **Table 7.2.3**).

Operational Phase

7.6.23 There are no designated heritage assets within the study area and, with the agreement of HES, operational effects on designated heritage assets have been scoped out.

7.6.24 No mitigation is required during the operation of the proposed development.

7.7 Residual Effects

Construction Phase

7.7.1 Completion of the programme of embedded archaeological mitigation set out above would avoid, reduce or offset any loss of archaeological resource that would occur as a result of the proposed development work. Implementation of the embedded mitigation would ensure that surviving elements of the historic landscape are preserved in situ where it appropriate to do so.

7.7.2 Implementation of the agreed mitigation would result in only minor or negligible adverse residual direct effects.

7.8 Conclusion

7.8.1 A detailed desk-based assessment and a walkover field survey have been undertaken to inform the appraisal of the potential effects of the proposed development on cultural heritage.

7.8.2 Twenty non-designated heritage assets have been identified by the study, centred on the proposed UGC route and along the existing OHL to be removed by the proposed development. These records mostly relate to

medieval and later settlement land use. There is one heritage asset of prehistoric date recorded in the HER, and five assets recorded in the HER are of modern (20th Century) date and relate to the Deanie Hydro-electric Power Station.

7.8.3 There are no Scheduled Monuments, no Listed Buildings and no other designated heritage assets within the study area or along this part of Strathfarrar. Effects on designated heritage assets was scoped out of the appraisal, with the agreement of HES.

7.8.4 Mitigation measures have been set out that would ensure, where appropriate, that known heritage assets that lie within the UGC construction easement, or within working areas around existing towers, or along the route of the existing OHL that is to be decommissioned and dismantled, would be avoided as far as practicable. The possibility that unexpected, buried remains may be encountered within the construction easement for the cable installation has been assessed as being low to moderate. This is particularly the case where the proposed UGC passes through the former Bencharn farming township (4) and a large probable stock enclosure (5), both of which occupy low-lying ground along the valley bottom, where the ground is more suitable for settlement and agricultural activities.

8. HYDROLOGY

8.1 Executive Summary

8.1.1 The likely effects on hydrology resulting from the proposed development have been appraised based upon the results of the desk study and field survey undertaken to inform the hydrological baseline.

8.1.2 The proposed development runs adjacent to Loch Beannacharan, the River Farrar and would cross the Beanachran Burn and East Deanie Burn, as well as a number of small tributaries of Beanachran Burn and East Deanie Burn. The watercourses flowing south and across the proposed development feed into feed into Loch Beannacharan and the River Farrar. The River Farrar is part of the Glen Strathfarrar SSSI and is a tributary of the River Beauly.

8.1.3 A watercourse crossing assessment was undertaken which has documented the properties (channel width, channel depth and channel substrate) of all watercourses which cross the existing OHL,proposed UGC alignment and the proposed access track to the CSE.

8.1.4 Mitigation measures have been set out that would ensure, where appropriate, that there would be no significant impacts on hydrological features. These include pollution prevention measures which would be set out in the CEMP and ensuring all watercourse crossings comply with the Water Environment (Controlled Activities) (Scotland) Regulations 2011 as amended (CAR)[41].

8.1.5 Taking into consideration the nature of the proposed development and the mitigation measures proposed, no significant residual impacts are predicted on hydrological features as a result of the proposed development.

8.2 Introduction

8.2.1 This chapter identifies and appraises the likely potential effects associated with the construction of the proposed development (as described in **Section 2: Description of Proposed Development**) on surface water and groundwater hydrology through a desk-based assessment supplemented by a field survey. Once completed, there are not considered to be any further potential affects to be considered on hydrology during the operational phase of the development.

8.2.2 The specific objectives of this section are to:

- Describe the hydrological and groundwater baseline;
- Identify the potential direct and indirect impacts on water features;
- Describe any mitigation or control measures proposed to address likely impacts; and
- Identify any significant residual effects on hydrological or groundwater features.

8.2.3 This section is supported by:

- **Appendix 8.1: Watercourse Crossing Assessment**; and
- **Appendix 8.2: Hydrology Figure**
- **Figure 8.1: Local Hydrology**.

8.3 Methodology

Study Extent

8.3.1 Hydrological issues are typically considered at a catchment scale therefore the study area includes all water resources in the immediate vicinity of the proposed development and watercourses with downstream hydraulic connectivity with the proposed development.

[41] SEPA (2024) The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) implemented by SEPA in 2021. [online] Available at: https://www.sepa.org.uk/regulations/water/ [Accessed: July 2024]

8.3.2 The appraisal was undertaken using opensource information including:

- SEPA Flood Maps[42];
- SEPA River Basin Management Plan (RBMP)[43];
- The Highland Council Private Water Supplies Register[44]; and
- OS 1:10,000 scale mapping.

Criteria for the Appraisal of Effects

8.3.3 Receptors of an international or national level of importance for example, SSSI, SPA, SAC are considered to be of High sensitivity. Smaller land drainage features not classified within the RBMP are considered to be of Low sensitivity.

8.3.4 The magnitude of an impact is determined as a predicted deviation from the baseline conditions during construction, operation and decommissioning, as described in **Table 8.1**.

Table 8.1: Magnitude of Impact on a Receptor

Magnitude of Impact	Criteria
High	Large alteration / change in the quality or quantity of and/or to the physical or biological characteristics of environmental resource.
Medium	Medium alteration / change in the quality or quantity of and/or to the physical or biological characteristics of environmental resource.
Low	Small alteration / change in the quality or quantity of and/or to the physical or biological characteristics of environmental resource.
Negligible	No alteration / change detectable in the quality or quantity of and/or to the physical or biological characteristics of environmental resource.

8.4 Baseline

Surface Hydrology

8.4.1 The proposed development is located within the River Beauly catchment and the proposed UGC and existing OHL crosses several watercourses that drain into Loch Beannacharan and the River Farrar (**Figure 8.1**). There are several habitats identified in **Chapter 6: Ecology** which lie adjacent to Loch Beannacharan that could be affected by any changes to the local hydrology.

8.4.2 A Watercourse Crossing Assessment was undertaken and is provided in **Appendix 8.1**, including a map of surveyed locations (**Appendix 8.1**, **Annex 1**) and photographs of the watercourses (**Appendix 8.1**, **Annex 2**). The watercourses all originate on the hillside to the north of the existing Glen Strathfarrar Road. The majority of the watercourses are narrow and in places the channel is poorly defined, flowing into or through areas of bog or surface water accumulation. The watercourses primarily contain pebble to cobble sized substrate with low flows at the time of the site visit. Many of the small watercourses converge north of the Glen Strathfarrar Road and are conveyed beneath it into single downstream channels. The Beanachran Burn, unnamed burns at WC24 and WC25 (**Appendix 8.1**, **Annex 1**) and the East Deanie Burn are comparatively wider, more defined watercourses with larger bed substrate along the alignment of the proposed development.

[42] SEPA (2024) Flood Maps [online] Available at: https://beta.sepa.scot/flooding/flood-maps/ [Accessed: October 2024].
[43] SEPA (2024) Water Environment Hub [online] Available at: https://www.sepa.org.uk/data-visualisation/water-environment-hub/ [Accessed: October 2024].
[44] The Highland Council (2024) Private Water Supplies [online] Available at: https://map-highland.opendata.arcgis.com/datasets/ded172bbade24650bb2c1baec5e0d318/explore [Accessed: October 2024]

Flood Risk

8.4.3 The UGC alignment west of Tower 10 lies outwith the 0.1 % Annual Exceedance Probability (AEP) flood extent of Loch Beannacharan but within 15 m, as indicated in SEPA flood mapping[3]. This represents land with a 1 in 1,000 probability of flooding occurrence in any year and is representative of a very low probability flood event. East of Tower 10, the UGC alignment lies within the 0.1 % AEP flood extent of the River Farrar. The UGC alignment between Tower 12 and Tower 13 would cross the Deanie Burn and are within the 0.1 % AEP flood extent of the East Deanie Burn. Watercourses with catchment areas <10 km^2 are not included in the SEPA Flood Maps, but this does not mean they are not at risk of flooding and could still affect the proposed development. Areas in the south of the LOD in proximity to Loch Beannacharan are within areas assessed to be at risk of flooding by SEPA, including areas at a High likelihood of flooding (1 in 10 (10%) AEP). Micrositing of the cable route within the LOD would allow the avoidance of areas at potential risk of flooding. There are no significant areas of Surface water flood risk identified on SEPA flood maps, that would be indicative of the exceedance of channel capacity of small watercourses within the study area.

Water Quality

8.4.4 Loch Beannacharan (WFD ID: 100153), the River Farrar (Beauly confluence to Loch Beannacharan, WFD ID: 20219) and East Deanie Burn (WFD ID: 20225) are all classified under SEPA's RBMP[43] as being in overall 'Good' condition. as being in overall 'Good' condition.

8.4.5 The River Farrar and lower reaches of the East Deanie Burn are part of the Glen Strathfarrar SSSI.

Groundwater Bodies

8.4.6 The proposed alignment is within the Northern Highlands groundwater body which is classified within the SEPA RBMP[43] as being in overall 'Good' condition.

8.4.7 A review of the Hydrogeological Map of Scotland[45] (1:625,000 scale) indicates that the site is underlain by a low productivity aquifer consisting of impermeable rocks, generally without groundwater except at shallow depth.

Water Resource

8.4.8 Highland Council mapping of Private Water Supplies (PWS) details three private water supplies (PWS)[46] within 250 m of the proposed development (**Figure 8.1: Local Hydrology**), as listed below:

- Existing Deanie substation – Type A1 Supply - supplies two properties; Benachran Lodge – Type A1 Supply - supplies two properties; and
- Deanie Lodge – Type B Supply - supplies one property.

8.4.9 The existing Deanie substation supply islocated 105 m west and upslope of the proposed 1325kv cable location. The northern boundary of the LOD is approximately 15m south of Deanie PWS. The Deanie PWS draws water from a hill loch upslope of the property and the Proposed Development is downslope of the PWS and therefore not in hydrological connectivity to the source supply for the Deanie PWS. The Benachran Lodge and Deanie Lodge PWSs are located 125 m and 260 m north and upstream of the proposed development respectively. It is therefore anticipated no PWSs would be adversely affected by the proposed development.

Groundwater Dependent Terrestrial Ecosystems

8.4.10 GWDTEs have been identified along the route of the proposed development. The proposed development avoids high GWDTE areas. Further details are provided in **Chapter 6: Ecology**.

[45] BGS (2024) Hydrogeological Map of Scotland [online] Available at: https://mapapps2.bgs.ac.uk/geoindex/home.html?layer=BGSHydroMap [Accessed: July 2024]
[46] The Highland Council (2024) Open Map Data [online] Available at: https://map-highland.opendata.arcgis.com/ [Accessed: July 2024]

8.5 Potential Effects

Construction Phase

8.5.1 During construction, there is the potential to alter in-channel or overland flow regimes through excavations, disruption to artificial drains, exposure of bare earth or rock, the construction of watercourse crossings, vegetation and soil stripping, excavations and dewatering activities.

8.5.2 There is also the potential to impact on receiving soils, groundwater and watercourse quality through the release of contaminated water, drilling fluids / muds and stored chemicals used on-site during construction works. Potential effects include direct effects on water quality and indirect effect on aquatic ecology.

8.5.3 These impacts could have detrimental effects on the downstream Glen Strathfarrar SSSI. Due to the connectivity with the SSSI, the watercourses within the site and those with potential to be impacted by the proposals are considered to be of High sensitivity. However, it is considered that any potential impacts on the watercourses would be of Low magnitude as there is likely to be only a small alteration or change in the physical or biological characteristics of thew watercourses and only a low potential for a small change in the quality or quantity of the water resource.

8.5.4 At one location, Tower 13R, the diversion of an unnamed drain is proposed over a length of approximately 85 m (detailed further in **Appendix 5.2**). Currently the channel of the minor drain flows from a channel which follows field boundaries and flows in a south easterly direction across the proposed CSE location. Field surveying shows this drain to comprise a very minor channel and in places to form a poorly defined surface water flow path. This drain would be diverted to the east of the CSE. There is the potential for engineering carried out on this drain to impact physical or biological characteristics of the watercourse or to lead to downstream quality of the water resource. As this feature forms a minor land drainage features not classified within the RBMP there is considered to be a low potential for a small change in watercourse quality.

8.5.5 Direct impacts on GWDTE are covered in **Chapter 6: Ecology**. The UGC would be designed and installed such that it would not present a significant impediment to groundwater flows, thereby minimising any impact in terms of hydrogeological regime.

Operational Phase

8.5.6 There is considered to be no potential for effects on hydrology during the operational phase of the proposed development as the development, once completed, would not alter the long term surface water runoff characteristics of the area and would not directly interact with surface water features.

8.6 Mitigation

8.6.1 Pollution prevention measures would be specified in a Construction Environmental Management Plan (CEMP) which would ensure compliance with SEPA Guidance for Pollution Prevention (GPP)[47], with all equipment, material and chemicals securely stored and bunded, where applicable, at least 50 m away from watercourses. All controlled activities would be carried out in compliance with the Water Environment (Controlled Activities) (Scotland) Regulations 2011 as amended[48] (hereafter referred to as the CAR). In addition, the CEMP would include method statements for watercourse crossings which accord with other relevant good practice guidance published by SEPA including WAT-SG-25[49] (River Crossings); and WAT-SG-29[50] (Temporary Construction Methods).

[47] SEPA (2018) Guidance for Pollution Prevention (GPP). Works and maintenance in or near water (GPP 5) February 2018 [online] Available at: https://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf?utm_source=website&utm_medium=social&utm_campaign=GPP5%2027112017 [Accessed: October 2024]
[48] SEPA (2023) The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended), Version 9.3 June 2023.
[49] SEPA (2010) Engineering in the water environment: good practice guide. River Crossings. Second edition [online] Available at: https://www.sepa.org.uk/media/151036/wat-sg-25.pdf [Accessed: October 2024]
[50] SEPA (2009) Engineering in the Water Environment Good Practice Guide. Temporary Construction Methods. First Edition [online] Available at: https://www.sepa.org.uk/media/150997/wat_sg_29.pdf [Accessed: October 2024]

8.6.2 The CEMP would include plans to minimise potential problems related to dewatering such as:

- Dewatering progressively in cells;
- Reducing the inflow of water by sealing worked surfaces;
- Managing temporary soil storage mounds and slope stability in line with industry best practice;
- Avoiding seepage of contaminated run-off through floor of excavations; and
- Ensuring inert fill is used for backfilling purposes.

8.6.3 All drainage from construction areas would be managed through a Sustainable Drainage System (SuDS) in order to attenuate flow rate, manage the volume of run-off and ensure that there is no effect on soil moisture regimes downstream of works.

8.6.4 All of the watercourse crossings identified for the proposed development would be designed in compliance with requirements of the CAR[48]. Where technically and economically feasible, work would progress under GBR7. Where it is preferable to install the cable using isolated open-cut or mole plough installation, the crossings would be subject to further detailed consideration and regulation by SEPA (either through a CAR registration or the Construction Runoff Permit). Detailed pollution prevention plans to ensure no pollution to the water environment would be developed. No direct open cut installation is proposed.

8.6.5 For the diversion of a minor watercourse at the T13 SER location (<3 m wide) a Simple Licence would be required under Controlled Activities Regulations (CAR)[48]. Proposals for diversion of the drain would be agreed with SEPA by the appointed contractor through application for a Simple Licence.

8.6.6 There is a general overarching requirement under CAR, whether operating under a Construction Runoff Permit or General Binding Rules, that there shall be no pollution to the water environment.

8.7 Residual Effects

8.7.1 Risks associated with the management of construction site drainage, stockpiles, chemicals used and wastes generated (including dewatering) during construction activities would all be mitigated through the implementation of good practice management measures during construction including the development of and adherence to an appropriate CEMP. Construction impacts would be temporary in nature and, although the watercourses are considered to be of High sensitivity, with mitigation measures in place, the magnitude of potential impacts would be low or negligible such that the potential effects are considered to be of low magnitude and of temporary nature.

8.7.2 Other land drainage assets, which could be crossed using isolated open-cut methods, have been determined to be of low sensitivity. The excavations would only be open for a short period and the channel would then be reinstated with appropriate material and with an appropriate channel cross section to ensure the reinstated channel has the same ecological and hydraulic properties as prior to cable laying such that impacts on the low sensitivity receptors, although of moderate magnitude, would be temporary in duration and therefore not significant.

8.7.3 Areas of the proposed cable alignment are located in high risk flood zones. The proposed timing of the construction works would seek, where feasible, to avoid works within such areas during periods of high fluvial flows within the watercourses or when high water levels are predicted. With the implementation of the mitigation measures outlined in the sections above, impacts on the flood risk status of the watercourses and associated catchments are considered to be of Low magnitude and temporary in duration and therefore not significant.

8.7.4 There are no planned activities that would impact on water resources during operation of the proposed cable alignment. The proposed UGC would be buried along its entire length and would not give rise to any change to existing ground levels or result in any permanent new structures within the floodplain.

8.8 Conclusion

8.8.1 There is potential for the proposed development to impact watercourses, including those which feed into the Glen Strathfarrar SSSI. Proposed mitigation includes pollution prevention measures which would be specified in the CEMP, suitable drainage management measures and all watercourse crossings conforming to CAR. All works are downstream of PWSs and therefore no impacts to PWSs are anticipated.

8.8.2 Following implementation of mitigation, no long-term residual effects are predicted.

9. SUMMARY

9.1 Summary of Residual Effects

Table 9.1: Summary of Residual Effects

Topic	Phase	Receptor	Effect	Significant
Landscape	Construction	LCT 226 Wooded Glen – Inverness	Minor adverse	No
		LCT 220 Rugged Massif – Inverness	Minor/None adverse	No
	Operation	LCT 226 Wooded Glen – Inverness	Moderate beneficial	No
		LCT 220 Rugged Massif – Inverness	Moderate/Minor beneficial	No
	Construction	Glen Strathfarrar NSA	Minor adverse	No
		Strathconon, Monar and Mullardoch SLA	Minor adverse	No
		Central Highlands WLA 24	Minor to None adverse	No
	Operation	Glen Strathfarrar NSA	Moderate beneficial	No
		Strathconon, Monar and Mullardoch SLA	Minor beneficial	No
		Central Highlands WLA 24	Minor to None beneficial	No
Visual	Construction	Local residents	Major/Moderate adverse	Yes
	Operation		Major/Moderate beneficial	Yes
	Construction	Access track	Major/Moderate adverse	Yes (over a localised part)
	Operation		Moderate beneficial	No
	Construction	Core Path IN26.01	Major/Moderate adverse	Yes (over a localised part)
	Operation		Moderate beneficial	No
	Construction	Viewpoint 1	Major/Moderate adverse	Yes
	Operation		Moderate/Minor beneficial	Yes
	Construction	Viewpoint 2	Major/Moderate adverse	Yes
	Operation		Moderate beneficial	No
	Construction	Viewpoint 3	Moderate beneficial	No
	Operation		Major/Moderate adverse	Yes

Ecology and Ornithology

9.1.1 The appraisal of the proposed development has identified potential impacts on designated sites (Strathglass Complex SAC, Glen Strathfarrar SSSI and Glen Affric to Strathconon SPA), habitats (particularly dry dwarf shrub heath, wet dwarf shrub heath, blanket bog, wet modified bog and watercourses), GWDTEs, golden eagle (from the SPA), badger, otter, pine marten, water vole and breeding birds. Proposed mitigation includes habitat reinstatement, horizontal drilling near watercourses and woodland, the avoidance of sensitive habitats and protected species, a CEMP to include measures to protect ecological and ornithological features (including SPPs) and a suitably qualified ECoW to input into the CEMP to ensure appropriate mitigation measures are in place. For golden eagles, construction activities and timings would be restricted within the disturbance buffer area and works undertaken under a watching brief by an ECoW according to a PSRA. Proposed mitigation also includes a pre-construction surveys for other aforementioned protected species and surveys for breeding birds if work in the breeding bird season cannot be avoided.

9.1.2 Following the implementation of mitigation, no long-term residual effects are predicted.

Cultural Heritage

9.1.3 Twenty non-designated heritage assets have been identified by the study, centred on the proposed UGC route and along the existing OHL to be removed by the proposed development.

9.1.4 There are no Scheduled Monuments, no Listed Buildings and no other designated heritage assets within the study area or along this part of Strathfarrar. Effects on designated heritage assets was scoped out of the appraisal, with the agreement of HES.

9.1.5 Mitigation measures have been set out that would ensure, where appropriate, that known heritage assets that lie within the UGC construction easement, or within working areas around existing towers, or along the route of the existing OHL that is to be decommissioned and dismantled, would be avoided as far as practicable. The possibility that unexpected, buried remains may be encountered within the construction easement for the cable installation has been assessed as being low to moderate.

9.1.6 Implementation of the agreed mitigation (**Section 7.6**) would result in only negligible or minor adverse residual direct effects. There would be no adverse and no beneficial residual effects on any designated heritage assets resulting from the proposed development.

Hydrology

9.1.7 There is potential for the proposed development to impact watercourses, including those which feed into the Glen Strathfarrar SSSI. Some of the works would potentially involve instream construction and work within a flood risk zone. Compliance would be required with the general overarching requirement under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended), whether operating under a Construction Runoff Permit or General Binding Rules, that there shall be no pollution to the water environment. Pollution prevention measures would be specified in the CEMP. Following implementation of mitigation, no long-term, adverse residual effects on the water environment are predicted.

9.2 Commitments Register

9.2.1 **Table 9.1** collates the commitments made throughout this EA Report and indicates the project phase that they apply to and which party is responsible for implementation of the commitment. This commitments register would be incorporated into the CEMP when it is developed by the construction contractor and would be updated if required to incorporate any additional mitigation identified as being required.

Scottish & Southern Electricity Networks
TRANSMISSION

Table 9.1 Commitments Register

Commitment Reference	Topic and EAR Reference	Project Phase	Commitment	Responsibility
Project Description				
PD1	**Table 2.1**	Construction	Construction would be during daytime only. Construction working hours would be limited to a maximum of 08.00 – 19.00 Monday - Friday and 08.00 – 13.00 Saturday with no working on Sunday. Any out of hours working would be agreed in advance with the relevant competent authority. Note commitment reference PD43 regarding working hours within the vicinity of Golden Eagle.	Construction Contractor
PD2	**Section 2**	Construction	Any other out of hours working would be agreed in advance with the relevant competent authority. Weekend working shall be planned to minimise construction traffic and areas of work shall be restricted to those which have the least impact on the local community and general public.	Construction Contractor
PD3	**Section 2.4.3**	Construction	No borrow pits are proposed.	Construction Contractor
PD4	**Section 2.4.4**	Construction and Operation	The area which would be temporarily disturbed during construction would be backfilled with the excavated subsoil and topsoil, seeded with either a grass mix or other seed mix requested by the landowner (e.g. on agricultural land) or another appropriate seed mix recommended by a landscape architect in consultation with an ECoW and a width of 10 m maintained clear of trees to allow for future access for fault finding and to prevent root damage to the cable.	Construction Contractor
PD5	**Section 2.4.5**	Construction	Smaller watercourses would be crossed during the construction phase using culverts to allow the temporary construction haul road to pass over the watercourse. For the cable trench, smaller watercourses and field drains would be crossed by excavating a trench whilst the channel is dry using cofferdams with bypass pumps.	Construction Contractor
PD6	**Section 2.4.7**	Construction	Once the existing OHL had been removed, the land formerly covered by the OHL operational corridor would be returned to the landowner and the land would be left for them to manage as they choose (subject to restrictions related to the proposed UGC and CSE tower/ CSE structure).	Construction Contractor
PD7	**Section 2.5**	Decommissioning	At the end of the design life of the proposed development, a decision would be made by the network operator to either replace or decommission the cable. Any replacement infrastructure would be subject to	Construction Contractor

Commitment Reference	Topic and EAR Reference	Project Phase	Commitment	Responsibility
			the consents and associated EAs required at that time. If the decision is taken to decommission the cable, then an appraisal would be made as to whether to leave the cable and CSE tower infrastructure in situ or to remove it.	
PD8	**Section 2.6.1**	Construction	Stone for the construction of haul roads and crane pads, ready mixed concrete and tarmac would be locally sourced	Construction Contractor
PD9	**Section 2.5.2**	Construction	Where possible, arrangements would be made for car sharing for staff journeys to site.	Construction Contractor
PD10	**Section 2.6.2**	Pre-Construction	A CTMP would be prepared by the appointed construction contractor in order to manage the potential impacts of construction related vehicle movements on the local road network, including identifying construction compound locations; road crossings for the UGC construction works; and potential requirements for public road improvements (e.g. bell mouth widening) and/or temporary traffic management	Construction Contractor
PD11	**Section 2.6.2**	Construction	All vehicles directly owned by the SSEN Transmission or main contractor would have a communications system installed that would be legal to use while the vehicle is in motion.	Construction Contractor
PD12	**Section 2.6.2**	Pre-Construction	If required, passing places would be constructed along the local roads in advance of the works commencing. The location and size of each passing places would be determined and agreed with Highland Council roads department and landowners and would be subject to gaining necessary consents.	SSEN Transmission
PD13	**Section 2.6.2**	Construction	Passing places would not be used by drivers of construction vehicles as a place to wait or as a place to park. Local residents would be able to report any instances of inappropriate driving or use of passing places to the project community liaison officer.	Construction Contractor
PD14	**Section 2.6.2**	Construction	Passing places would not be used by drivers of construction vehicles as a place to wait or as a place to park.	Construction Contractor
PD15	**Section 2.6.2**	Pre-Construction	Existing and new accesses would be improved to double gate access bell mouth layouts. Where required visibility would be improved or provided at the access points, appropriate for the nature and speed of the	Construction Contractor

Commitment Reference	Topic and EAR Reference	Project Phase	Commitment	Responsibility
			road. All public road improvement works would be subject to the approval of the relevant planning and roads authority and individual traffic management plans agreed before works commence.	
PD16	**Section 2.6.2**	Construction	In order to reduce mud and debris being deposited onto the road network, wheel washing facilities would be provided at all accesses where vehicles can exit onto the public road. The minimum provision would be a brush and a water supply. Where considered necessary the public roads, adjacent to the site access points shall be kept clean by utilising a mechanical road sweeper. Local residents would be able to report any instances of mud being carried onto the public highway to the project community liaison officer.	Construction Contractor
PD17	**Section 2.6.2**	Construction	A maximum 15 mph speed limit would be imposed for all construction traffic on private roads and tracks, which would be reinforced through temporary construction traffic speed limit signs. Along public roads national speed limits or signed speed limits (whichever is lower) would apply. Local residents would be able to report any instances of speeding on the public highways to the project community liaison officer.	Construction Contractor
PD18	**Section 2.6.2**	Pre-Construction and Construction	Temporary construction site signage would be erected on the local road network in the vicinity of each of the proposed construction accesses, and at other locations as considered necessary, to warn people of construction activities and associated construction vehicles.	Construction Contractor
PD19	**Section 2.6.2**	Construction	Information on the project would be distributed using a variety of methods including the project website, local newsletters, public notices and public meetings by the project community liaison officer. A construction liaison committee comprising of the project community liaison officer would meet periodically to provide updates on the construction programme, vehicle movements and public road improvements. Representatives from SSEN Transmission and the construction contractor would attend. Contact details for key project staff would be provided to the community in order for any complaints or information requests to be actioned.	Construction Contractor
PD20	**Section 2.6.2**	Construction	Public access safety advice signage would be installed at all access points from the public road network. All excavations shall be surrounded by barriers. All construction works would be undertaken with strict adherence to the current CDM regulations.	Construction Contractor

Commitment Reference	Topic and EAR Reference	Project Phase	Commitment	Responsibility
PD21	**Section 2.6.2**	Pre-Construction and Construction	A CTMP would be developed by the contractor to include details of access design in order to appraise and demonstrate the adequacy of construction access arrangements; describe how it would be ensured that there is no parking of construction vehicles or loading and unloading of materials on the local public roads; steps taken to limit and where possible avoid restrictive traffic management measures; and how conflicts with school opening and closing times would be avoided	Construction Contractor
PD22	**Section 2.6.2**	Pre-Construction	The developer would undertake a road condition survey in conjunction with the roads authority prior to commencing works on-site; this survey would identify any visually apparent defects with the road pavement and would be used as a baseline for any future surveys	Construction Contractor
PD23	**Section 2.6.2**	Post-Construction	Upon completion of the works in any area, a final road condition survey would be undertaken in conjunction with the roads authority. Defects would be recorded for comparison with the initial survey. Where deterioration of the road pavement can be agreed as a result of the construction works, the developer would arrange for a repair to be undertaken.	Construction Contractor SSEN Transmission
PD24	**Section 2.9**	Pre-Construction	The draft outline CEMP would be updated with detailed information and finalised prior to commencement of construction, in consultation with the relevant authorities and, where applicable, taking account of the approved plans and planning conditions. The contractor(s) appointed to construct the project would prepare detailed method statements which would be incorporated into the final CEMP.	Construction Contractor
PD25	**Section 2.9**	Construction	An appropriately qualified ECoW / Site Environment Manager would be appointed with the responsibility of monitoring compliance the CEMP.	Construction Contractor
PD26	**Section 2.9**	Pre-Construction	The CEMP would provide a schedule of mitigation commitments made in the EA Report. The CEMP would also maintain a schedule of any commitments required by specific planning conditions.	Construction Contractor
PD27	**Section 2.9**	Pre-Construction	The CEMP would confirm the roles, responsibilities and communication routes for environmental management during the works. The plan would make reference to or incorporate communication protocols for use during an environmental emergency or incident.	Construction Contractor
PD28	**Section 2.9**	Pre-Construction	The CEMP would set out the requirements for recording and reporting all aspects of environmental management.	Construction Contractor

Commitment Reference	Topic and EAR Reference	Project Phase	Commitment	Responsibility
PD29	**Section 2.9**	Pre-Construction and Construction	The CEMP would set out the programme of environmental audits, including audits of sub-contractors to be undertaken by the contractor, on a quarterly basis (as a minimum) and provides an audit report within two weeks of the audit being undertaken. The contractor would develop a template for completing and reporting audits for the agreement of the employer prior to the commencement of site works	Construction Contractor
PD30	**Section 2.9**	Pre-Construction and Construction	The CEMP would provide an EMP, agreed with the planning authority, to include all measures required to protect ecology at the site and ensure compliance with relevant nature conservation and wildlife protection legislation.	Construction Contractor
PD31	**Section 2.9**	Construction	Specify requirement for visual inspection of surface water courses to be undertaken on discharge waters during the construction phase to appraise and manage the performance of the drainage system.	Construction Contractor
PD32	**Section 2.9**	Pre-Construction	The CEMP would be developed in accordance with SSEN Transmission's SPPs.	Construction Contractor
PD33	**Section 2.8**	Construction	Keep local residents informed of the proposed working schedule, where appropriate, including the times and duration of any abnormally noisy activity.	Construction Contractor
PD34	**Section 2.8**	Construction	Ensure site work continuing throughout 24 hours of a day shall be programmed, when appropriate, so that haulage vehicles would not arrive at or leave the site between 19.00 and 07.00 hours, with the exception of abnormal loads that would be scheduled to avoid significant traffic flows.	Construction Contractor
PD35	**Section 2.8**	Construction	Ensure all vehicles and mechanical plant would be fitted with effective exhaust silencers and 'smart' reversing alarms and be subject to programmed maintenance.	Construction Contractor
PD36	**Section 2.8**	Construction	Select inherently quiet plant where appropriate - all major compressors would be 'sound reduced' models fitted with properly lined and sealed acoustic covers, which would be kept closed whenever the machines are in use.	Construction Contractor
PD37	**Section 2.8**	Construction	Review the options to utilise close boarded fencing as acoustic screens whenever works are in close proximity to dwellings.	Construction Contractor

Commitment Reference	Topic and EAR Reference	Project Phase	Commitment	Responsibility
PD38	**Section 2.8**	Construction	Ensure all ancillary pneumatic percussive tools would be fitted with mufflers or silencers of the type recommended by the manufacturers	Construction Contractor
PD39	**Section 2.8**	Construction	Instruct that machines would be shut down between work periods or throttled down to a minimum.	Construction Contractor
PD40	**Section 2.8**	Construction	Ensure regular maintenance of all equipment used on-site, including maintenance related to noise emissions.	Construction Contractor
PD41	**Section 2.8**	Construction	Ensure that vehicles are loaded carefully to ensure minimal drop heights so as to minimise noise during this operation.	Construction Contractor
PD42	**Section 2.8**	Construction	Ensure all ancillary plant such as generators and pumps would be positioned so as to cause minimum noise disturbance and if necessary, temporary acoustic screens or enclosures should be provided.	Construction Contractor
PD43	**Section 2.8**	Construction	Follow additional work hour restrictions to prevent disturbance to golden eagles as detailed in **Chapter 6.5**. Works would take place outside the periods of breeding activity for golden eagle (February to October) to prevent disturbance during breeding and fledging, where the works are within 1 km of the eyrie (eagle nest site). Works with the potential to cause significant disturbance would not occur before 9:00 or after 16:00 to prevent disturbing eagles which are roosting nearby. This applies throughout the year, within 1 km of the eyrie.	Construction Contractor
Ecology and Ornithology				
EO1	**Table 6.7**	Post-Construction	Immediate reinstatement of habitats would be undertaken following construction activities, particularly in areas of temporary access, removed tower locations, following excavation of the cable trench and following installation of the new OHL and CSE tower.	Construction Contractor
EO2	**Table 6.6**	Construction	Horizontal directional drilling would avoid impacts on watercourses and the trees around them as no works would occur in or immediately around the watercourses.	Construction Contractor
EO3	**Table 6.6**	Construction	It is not expected that any trees would need to be felled to facilitate the construction of the proposed development however, the UGC traverses a stand of broadleaved woodland on the banks of the Loch,	Construction Contractor

Commitment Reference	Topic and EAR Reference	Project Phase	Commitment	Responsibility
			there is not expected to be any requirement to fell any part of this woodland to allow for the cable trenching. All works should avoid damage to woodland when working within close proximity.	
EO4	**Table 6.6**	Construction	During installation of UGC and removal of existing OHL, floated access tracks / bog mats and low ground-pressure vehicles would be used to cross the GWDTEs, the wet modified bog and wet / dry dwarf shrub heath where possible to minimise disturbance of these habitats. Trench breakers would also be used when channelling through sloping ground (i.e. south east of Deanie Substation) to prevent degradation of these habitats (caused by water flow along cable trench).	Construction Contractor
EO5	**Table 6.6**	Construction	Engagement with the SEPA would occur regarding any excavated peat reuse and disposal, where required.	Construction Contractor
EO6	**Table 6.6**	Pre-Construction	Peat probing surveys to identify areas of deeper peat to be avoided, where possible.	Construction Contractor
EO7	**Table 6.6**	Construction	Clean runoff (i.e. non-silty surface water flow, including that which has not passed over any disturbed construction areas) should be kept separate from potentially contaminated water as far as possible. Where required, interceptor ditches and other drainage measures could be installed to safeguard clean runoff from disturbed areas.	Construction Contractor
EO8	**Table 6.6**	Construction	A suitably qualified ECoW would input into the CEMP to ensure appropriate mitigation measures are in place, and to reduce any impacts.	Construction Contractor
EO9	**Table 6.6**	Construction	Engagement with SEPA would occur regarding any excavated peat reuse and disposal, where required. However, it is not anticipated that there would be a need for peat disposal as all excavated material would be backfilled.	Construction Contractor
EO10	**Table 6.6**	Construction	Minimising the extent of construction work within wetland habitat (i.e. wet dwarf shrub heath), with cable trenches or cuttings open for as short a time as possible. Inclusion of GWDTEs wetland habitats within the CEMP.	Construction Contractor
EO11	**Table 6.6**	Construction	Pre-construction surveys for protected species would be undertaken no more than eight months prior to construction and removal works. If the results indicate the presence of protected species additional to	Construction Contractor

Commitment Reference	Topic and EAR Reference	Project Phase	Commitment	Responsibility
			those recorded to date, an appraisal of the mitigation on the species would be completed and appropriate mitigation measures identified (if required), such as micro-siting of access roads. Species protection plans would be included in the CEMP.	
EO12	**Table 6.6**	Construction	All infrastructure for the proposed development would be micro-sited a minimum of 30 m from any active badger sett, where possible, to avoid damaging or destroying the setts. Any disturbance of setts would have to occur under a NatureScot licence and would be monitored by the ECoW. A satellite sett located within 10 m of the proposed UGC (see Confidential Target Note 1, **Figure 6.6: Confidential Results**) would require a NatureScot licence to disturb the sett unless the cable can be micro-sited to a minimum of 30 m from the sett. All digging and excavation works occurring within 30 m of the sett would have to be done by hand and supervised by an ECoW. SPP to be followed during works near badger setts.	Construction Contractor
EO13	**Table 6.6**	Construction	Existing, or temporary, access tracks would be used as much as possible.	Construction Contractor
EO14	**Table 6.6**	Construction	Ground or vegetation clearance works would be undertaken outwith the main bird nesting season (March–September, inclusive), if possible. If this is not possible, a suitably experienced ecologist would check the proposed development prior to construction to determine if nesting birds are present. If nesting birds are found, particularly crossbill (which are also protected from disturbance while nesting), a suitable buffer zone would be implemented around the nest, with no work in this zone until the young have fledged or the nest is no longer in use.	Construction Contractor
EO15	**Table 6.6**	Construction	The CEMP would include standard pollution prevention guidelines, such as silt fencing and traps, during the construction phase to ensure that no water or air borne pollutants reach ecological features.	Construction Contractor
EO16	**Table 6.6**	Construction	If peat is encountered during excavations, the excavated peat materials would be temporarily stored prior to being reinstated. The temporary storage of such excavated peat shall seek to minimise disturbance of deposits by minimising haul distance between temporary peat storage sites and re-use areas. In general, it shall be a priority to avoid a single site dedicated temporary peat storage area. A progressive construction method that re-cycles peat through excavation and timely re-instatement in a continuous process shall be adopted for the excavation of the cable alignment. Excavated peat would be stored on geo-textile matting, which acts as a protective barrier to the underlying soils and vegetation. The geo-	Construction Contractor

Commitment Reference	Topic and EAR Reference	Project Phase	Commitment	Responsibility
			textile shall be designed to prevent ingress of groundwater and erosion and de-stabilisation of the base of the stored peat. Peat shall be stored to a maximum depth of 1 m with the peat turves stored separately from underlying peat. The peat turves or vegetation layer shall be stored in a single layer and a system of watering the stored peat and turves / vegetation shall be in place to ensure that the peat remains damp.	
EO17	**Table 6.6**	Construction Decommissioning	Mitigation measures for golden eagle are detailed in **Appendix 6.3: HRA**. Works occurring within 1 km of the Deanie crag nesting/roosting area should be strictly controlled to prevent disturbance to breeding eagle activity (between February to October) and roosting eagles over winter. As such works with the potential to cause significant disturbance would not occur before 9:00 or after 16:00 as to prevent disturbing eagles which are breeding or roosting on the surrounding Crags. Monitoring of works within 1 km would take place under the watching brief of a suitably qualified ECoW. Works would be carried out based on a Protected Species Risk Assessment. This applies throughout the year, within 1 km of the eyrie	Construction Contractor
EO18	**Appendix 6.3 - HRA**	Construction Decommissioning	Monitoring of works would take place under the watching brief of a suitably qualified ECoW within 1 km of the eyrie at Deanie Crags. Works would be carried out based on a PSRA - toolbox talks would be provided by the ECoW for contractors on-site.	Construction Contractor
Cultural Heritage				
CH1	**Section 7.6.1**; **Appendix 7.2**	Construction	Appointment of a retained a professional archaeological organisation (ACoW) to prepare a WSI and to oversee the mitigation works.	Construction Contractor / SSEN Transmission
CH2	**Section 7.6.1**; **Appendix 7.2**	Construction	Preparation of WSIs developed in consultation with (and subject to the agreement of) HET on behalf of The Highland Council.	Construction Contractor / ACoW
CH3	**Section 7.6.1**; **Appendix 7.2**	Construction	Marking out of heritage assets for avoidance during the construction phase. Assets to be marked out are: three clearance cairns (4g-h and 4k), a head dyke (4d), three field banks (4e and 15b-c), a clearance cairn (8), footings of an old building (9) and two concrete platforms (19 and 20).	Construction Contractor / ACoW

Commitment Reference	Topic and EAR Reference	Project Phase	Commitment	Responsibility
CH4	**Section 7.6.1**; **Appendix 7.2**	Construction	Archaeological investigations of heritage assets within the cable construction easement. Assets to be subject to investigation and recording are: three clearance cairns (4i-j and 17c). In the event that marking off for avoidance is not possible, additional assets to be recorded are: three field banks (4e, 15b and 15c).	Construction Contractor / ACoW
CH5	**Section 7.6.1**; **Appendix 7.2**	Construction	Archaeological watching briefs: Where the UGC route passes through the remains of an old farm or farming township (4), the site of an old enclosure (5), where there is a low-moderate archaeological potential. Where the proposed CSE access track passes an area of rig and furrow cultivation (13) and intersects three field banks (15a, 15d and 17a), in addition to the area for construction of theCSE compound.	Construction Contractor / ACoW
CH6	**Section 7.6.1**; **Appendix 7.2**	Construction	Post-excavation processing, analysis and recording to the standards required by the Council.	SSEN Transmission / ACoW
Hydrology				
H1	**Section 8.5**	Construction	Pollution prevention measures would be specified in CEMP which would ensure compliance with SEPA GPP, with all equipment, material and chemicals securely stored and bunded, where applicable, at least 50 m away from watercourses.	Construction Contractor
H2	**Section 8.5**	Construction	The CEMP would include plans to minimise potential problems related to dewatering such as: Dewatering progressively in cells; Reducing the inflow of water by sealing worked surfaces; Managing temporary soil storage mounds and slope stability in line with industry best practice; Avoiding seepage of contaminated run-off through floor of excavations; and Ensuring inert fill is used for backfilling purposes.	Construction Contractor
H3	**Section 8.5**	Construction	All drainage from construction areas would be managed through a SuDS in order to attenuate flow rate, manage the volume of run-off and ensure that there is no effect on soil moisture regimes downstream of works.	Construction Contractor

Commitment Reference	Topic and EAR Reference	Project Phase	Commitment	Responsibility
H4	**Section 8.5**	Construction	All of the watercourse crossings identified for the proposed development would be designed in compliance with requirements of the CAR.	Construction Contractor
H6	**Section 8.6**	Construction	Isolated open cut crossings are proposed for the smaller watercourses encountered along the cable alignment. After cable installation the channel would then be reinstated with appropriate material and with an appropriate channel cross section to ensure the reinstated channel has the same ecological and hydraulic properties as prior to cable laying.	Construction Contractor
H7	**Section 8.6**	Construction	Where construction is proposed within floodplains works would be undertaken, where feasible, during the driest (summer) months to minimize the impact of potential storms. Trenches would be dug and left open for the minimum of time to allow the installation of cables, then immediately back-filled.	Construction Contractor