

EXECUTIVE SUMMARY

Introduction

This Environmental Appraisal Report is submitted to accompany an application for consent under section 37 of the Electricity Act 1989, to construct and operate a Tie-in connection to the proposed Creag Dhubh Substation from the existing 132 kV Inveraray to Taynuilt Overhead Line (OHL), hereafter referred to as 'the Proposed Development'. The Proposed Development would be located in Argyll and Bute, positioned approximately 2.5 km southwest of Cladich, as illustrated in **Figure 1.1 (Volume 3a)**.

The application is being submitted by Scottish Hydro Electric Transmission plc (hereafter referred to as 'the Applicant') who, operating and known as Scottish and Southern Electricity Networks Transmission (SSEN Transmission), own, operate and develop the high voltage electricity transmission system in the north of Scotland and remote islands.

An application for consent for the Proposed Development will be made to the Scottish Ministers under section 37 of the Electricity Act 1989, along with a request for a direction that planning permission be deemed to be granted under section 57 (2) of the Town and Country Planning (Scotland) Act 1997.

The Proposed Development is not considered an 'EIA Development' under the Town and Country Planning (Scotland) (Environmental Impact Assessment) Regulations 2017 (hereafter referred to as the 'EIA Regulations'). Accordingly, there is no requirement to produce an Environmental Impact Assessment Report under the EIA Regulations. However, an Environmental Appraisal (EA) has been carried out as a non-statutory assessment to allow appropriate environmental management and mitigation measures to be identified based on the Proposed Development Description outlined in **Chapter 3: Proposed Development and Alternatives**.

This EA Report provides information gathered as a result of the EA and explains and supports performance of the Applicant's obligations under Schedule 9 of the Electricity Act 1989 to preserve amenity and mitigate environmental effects (see **Chapters 4 to 8**).

Proposed Development

The Proposed Development consists of the removal of a section of the existing 132 kV Inveraray to Taynuilt OHL, between Tower 35A and Tower 36B, construction of a single circuit temporary diversion for the existing 132 kV Inveraray to Taynuilt OHL, construction of two new Terminal Towers (35B and 36B) the replacement of two existing Towers with two angle towers (35A and 36A); and the creation of approximately 700 m new permanent access track and upgrade works to approximately 495 m of existing access track. Tree felling would be required to clear the site for construction, as well as for ongoing management of the operational corridor.

The Applicant would also undertake certain works in connection with the Proposed Development. Whilst these works would be undertaken under alternative consenting mechanisms, they have been considered for the purpose of the EA.

Summary of Environmental Effects

Taking account of the key points from the Screening Opinion, the following environmental issues associated with the Proposed Development have been identified as material to the determination of the application and these are addressed in the following technical chapters:

- Effects on Ecology and Ornithology (Chapter 4);
- Effects on Landscape and Visual Amenity (Chapter 5);
- Effects on Cultural Heritage (Chapter 6); and
- Effects on Hydrology and Hydrogeology (Chapter 7);

Each technical chapter has identified the potential impacts and effects on the environment that may arise as a result of the construction and operation of the Proposed Development, as well as the mitigation measures to avoid, reduce, or if appropriate, offset adverse effects on the environment. The findings of each technical chapter are summarised below, with the full list of mitigation measures set out in **Chapter 8: Schedule of Mitigation (Volume 1)**.

Consideration has been given to inter-project cumulative effects resulting from in-combination effects of the Proposed Development with cumulative schemes within the 10 km Study Area.

Intra-project cumulative effects (i.e. the combined or synergistic effects caused by the combination of a number of effects from the Proposed Development on a particular receptor) have also been considered.

Ecology and Ornithology

The likely impacts on important ecology and ornithology features resulting from the construction and operation of the Proposed Development have been appraised based on the results of a desk-based study, an extended Phase 1 habitat survey and protected species surveys, undertaken by ecologists in March 2022. Ornithology surveys were completed between 2016 and April 2022. One statutory designated nature conservation site for ornithological features occurs within the ornithology field survey area: Glen Etive and Glen Fyne Special Protection Area (SPA), classified for breeding golden eagle *Aquila chrysaetos*, lies 1 km west of the Proposed Development at its closest point.

Potential impacts on the SPA from the Proposed Development are assessed in **Technical Annex 4.2: Habitat Regulations' Appraisal (HRA) (Confidential Volume 4)**, which concludes that, following the screening stage of the HRA, there is not considered to be Likely Significant Effects on the SPA as a result of the Proposed Development alone or in combination with cumulative schemes, therefore an Appropriate Assessment is not considered to be required. There are no other statutory or non-statutory designated nature conservation sites within the ecology and ornithology Study Areas.

The Site is located in the Argyll and Bute Local Biodiversity Action Plan (BAP) area. The assessment has considered those priority habitats and species present in Argyll and Bute and included in the BAP which are recorded in the field survey area and relevant to the Proposed Development.

Field surveys identified potential impacts on marshy grassland, habitat suitable to support water vole, disturbance and/or destruction of bird habitats or nests, as well as indirect impacts from pollution, light or noise. These impacts would be mitigated through the timing of works to avoid ecologically sensitive seasons, where possible, employing a project ECoW, following measure within the Construction Environmental Management Plan (CEMP). Following the successful implementation of this mitigation, no residual impacts are considered likely.

Landscape and Visual

The likely impacts on important landscape and visual receptors resulting from the construction and operation of the Proposed Development have been appraised based on the results of a desk-based study (including visibility mapping), site visits and site photography.

Landscape Fabric

Construction

Direct impacts on landscape fabric would occur due to the removal of soil, vegetation, with felling of forestry plantation (proportion due for felling in the next three years soil and excavation for construction of a temporary diversion and Tie-In connection to the proposed Creag Dhubh substation. Removed vegetation and felled trees would be restored and revegetated where not used for the Operational Corridor for the Tie-In to the Substation. Temporary tracks and compound areas would be removed, and appropriate ground cover reinstated. There would be a Moderate effect on landscape fabric within the Site during this phase.

Operation

The introduction of two replacement angle towers and two new tower structures would increase the area used for electricity within the landscape at this location, reducing the area used for forestry and permanently changing to low vegetation suitable for the operational corridor. Vegetation would also be permanently lost in areas used for permanent access tracks and tower foundations. The effect would be Moderate on landscape fabric within the Site.

Landscape Character

Construction

Landscape character would be impacted by construction activity (as set out in landscape fabric above) including the presence of plant (excavator and crane), increased HGV movement, associated noise and vehicle activity. During construction, the existing 132kV OHL diversion would require eight wood poles positioned south of the existing line, although with a similar ZTV to the existing OHL poles.

The embedded mitigation in the CEMP would help to limit the impact of construction activities. In addition, construction impacts would be short-term in nature with the more visually intrusive activity of erecting towers taking approximately 20 days. Overall the construction would be short-term taking up to 18 months. There would be Moderate effects to landscape character at closer proximity with direct impacts in the North Loch Awe Craggy Upland LCT (7a). Impacts would dissipate to None with distance.

Operation

Effects of the Proposed Development during operation would be Moderate localised direct impacts within the North Loch Awe Craggy Upland LCT with changes in land use and cover within a small area.

Surrounding areas would experience a perceptual increase of electricity infrastructure within their surrounds. Moderate to Minor effects are expected in proximity and at higher elevations where the Proposed Development would be visible backclothed against rising topography. Effects would dissipate to None with distance or where there is no visibility due to topography and/or forestry screening.

Landscape Designations

The Proposed Development is situated within the North Argyll APQ, located at a mid-elevation with a back cloth of rising topography within the context of the existing Taynuilt to Inveraray 132kV OHL within an area of commercial forestry plantation.

Construction

Effects on the APQ be direct and indirect where activity impacts on views at higher elevations. Partial views of activity and new temporary diversion from the loch base around the sensitive North of Loch Awe seen against a back clothing of rising topography. Effects would be moderate in proximity and at higher elevations.

Operation

Direct effects from a change of land use within the APQ, indirect effects at proximity and at elevations. Majority of Proposed Development would be screened from the sensitive area around the head of Loch Awe. Effects would be Moderate and dissipate with distance.

The Proposed Development would not be expected to compromise the APQ's scenic value or undermine the integrity of the designation.

A partial element of a replacement tower would be visible from the Ardanaiseig House GDL shoreline due to the screening by topography. Effects would be Minor and the features identified for classification would not be compromised

Visual Receptors

The 10 km study encompasses a range of receptors. Zone of Theoretical Visibility analysis demonstrates that settlements would not be impacted by the Proposed Development and no scattered residences are located within 1km of the Site. Therefore residential receptors have been scoped out of the assessment.

Construction

Transport receptors are expected to have partial, glimpsed views of any construction activity that would be short term and reversible with Minor to Minor/Negligible effects. Recreational receptors are expected to experience the greatest impact at closest proximity (represented by VP1) where noise and tree felling may be a minor alteration to the existing view, although impacts are short-term and consistent with the baseline of an actively managed forestry area. Impacts are expected to range from Moderate in proximity to None at distance.

At the elevated locations of Cruach Mhor, Beinn a Bhuidh, Ben Ghlas and Cnoc Lomain the Proposed Development would be seen against rising topography and would compose a very small element of the view. Full views are expected to be possible by Hill Walkers due to the elevation with impacts would be mitigated by distance and backclothing by rising topography. Impacts are judged as Negligible with the underlying composition of the view essentially unimpacted. The effect would be Minor.

Operation

Impacts would be greatest at locations closest to the Proposed Development. The locally recognised Neil Munro monument is located 1.1km east of the Proposed Development with expected High sensitivity receptors at this location. Effects would be Moderate as a partial change to the view.

At higher elevations to the north and east, as represented by VPs 3, 4, 5 and 7 the Proposed Development would be visible within a small area of the view and back clothed against rising topography within an area of commercial forestry plantation. Due to distance and the expansive views at these locations, the impacts are judged to be a barely discernible alteration to an existing 132kV OHL feature with a Negligible impact on visual amenity and landscape character. Effects would be Minor at these locations.

Along the shores of Loch Awe and areas to the west and south west the majority of Proposed Development would be screened by topography. Where visible effects would be Moderate. Receptors using the Core Paths C300; C171 (b) and C523 would have partial glimpses of T35A if not screened by intervening vegetation with Minor to None effects.

Cumulative

Landscape

Overall, in addition effects of the Proposed Development during construction would be Minor due to the small scale of the activity and short duration of construction (18 month period). In combination, effects would increase to Moderate due to the concentration of activities (Substation; Creag Dhubh to Dalmally 275 kV and Creag Dhubh to Inveraray 275 kV OHL Connection Projects) within the location of the Proposed Development. Effects are expected to dissipate to None with distance and/or screening by topography.

During operation, the Proposed Development's in addition effect would be Minor, increasing to Moderate when considered in combination with projects in planning/approved. Due to the two additional windfarms in scoping effects could increase to Major/Moderate due to the prominence of the turbines in the landscape increasing the influence of electricity infrastructure on character.

Visual

During construction in addition cumulative effects are assessed as Minor on transport and recreational receptors, as demonstrated across all viewpoints. When considered in combination with those projects that are approved and in planning, the effects would be Moderate at VP1 where activity is concentrated with the convergence of projects, but quickly dissipating to Minor with distance.

During operation, in addition effects would be Minor reflecting the small scale of Proposed Development. In combination with the projects considered approved and in planning. Effects increase to Moderate across receptors and viewpoints when considered in combination due to the area of the views potentially impacted due to the dispersed nature of the projects considered. When scoping projects are also considered in combination,

effects can increase to Major/Moderate due to the Ladyfield are seen against the skyline and at high elevations where windfarms would be located across the mid-ground view.

Cultural Heritage and Archaeology

The likely impacts on cultural heritage and archaeology resulting from the construction and operation of the Proposed Development have been appraised based upon the results of a desk-based study and a field survey carried out in April 2021.

Five heritage assets have been identified within the Inner Study Area. There are no statutory designated sites (Scheduled Monuments, Listed Buildings, Inventory Gardens and Designed Landscapes, Inventory Historic Battlefields, or Conservation Areas) within the Inner Study Area. Most of the records are for medieval or later settlement and activity, including a group of shieling huts and the route of a former drove road/military road, although one of the identified features is a 20th century commemorative monument. There are no features or find-spots relating to prehistoric activity or settlement within the Inner Study Area.

The Inner Study Area is currently in use as commercial forestry and this current land use suggests that the potential for hitherto undiscovered buried archaeological remains to survive in the Inner Study Area is low to negligible except in discrete areas around the shieling huts (2) and along the tributary of the River Aray. In afforested areas, pre-afforestation ploughing and drainage works, as well as planting and subsequent tree root growth and the effect of wind-throw, is likely to have disturbed or destroyed the integrity of any surviving buried archaeological deposits that might formerly have been, or may still be, present.

Five heritage assets in the Outer Study Area are predicted to have some degree of visibility of the Proposed Development. It is assessed that there would be negligible magnitude effects on the settings of three Scheduled Monuments and one NSR Site, all of heritage value at the national level and of high sensitivity. There would also be a negligible magnitude effect on the setting of one non-designated heritage asset (Neil Munro Commemorative Monument) of heritage value at the local level and of low sensitivity.

Indirect impacts in-combination with five cumulative schemes may also arise. The Proposed Development in combination with the cumulative schemes considered by the assessment would not detract from the character or cultural significance of the heritage assets within the Outer Study Area and it is assessed that the cumulative impacts would be of no more than negligible magnitude.

Hydrology and Geology

The likely effects on hydrology, hydrogeology and geology and soils resulting from the Proposed Development have been appraised based upon the results of the desk study, and field survey, undertaken to inform the baseline.

The Site is located within the River Aray catchment and sits adjacent to the headwaters of the River Aray. The Site, and the watercourses within it, do not fall within any Internationally or nationally designated areas such as Sites of Special Scientific Interest, SPAs or Special Areas of Conservation (SACs).

Potential impacts to the water environment include changes to water quality and quantity, increased sedimentation, impacts to morphology, and increased flood risk. No impacts to the water environment during the construction and operation of the Proposed Development are anticipated following the implementation of standard mitigation measures through the CEMP, including pollution prevention measures, environmental management plans, use of SuDS, and detailed design of all watercourse crossings to meet CIRIA and CAR guidelines. Impacts on peat can be mitigated through measures included within an **Outline Peat Management Plan (PMP) (TA 7.2, Volume 2)**, including measures to re-use peat generated through construction of the Proposed Development.

Mitigation measures have been set out that would ensure, where appropriate, that there would be no impacts on hydrological or hydrogeological features during the construction and operation of the Proposed Development. These include pollution prevention measures, environmental management plans and the use of SuDS which

would be set out by the Principal Contractor in the CEMP. Additionally, all watercourse crossings would be designed to comply with the Water Environment (Controlled Activities) (Scotland) Regulations 2011 as amended.

1. INTRODUCTION

1.1 Introduction

This Environmental Appraisal Report is submitted to accompany an application for consent under section 37 of the Electricity Act 1989, to construct and operate a Tie-in connection to the proposed Creag Dhubb Substation from the existing 132 kV Inveraray to Taynuilt Overhead Line (OHL), hereafter referred to as 'the Proposed Development'. The Proposed Development would be located in Argyll and Bute, positioned approximately 2.5 km southwest of Cladich, as illustrated in **Figure 1.1 (Volume 3a)**.

The application is being submitted by Scottish Hydro Electric Transmission plc (hereafter referred to as 'the Applicant') who, operating and known as Scottish and Southern Electricity Networks Transmission (SSEN Transmission), own, operate and develop the high voltage electricity transmission system in the north of Scotland and remote islands. The Applicant holds a licence under the Electricity Act 1989¹ to develop and maintain an efficient, coordinated and economical system of electricity transmission. An application for consent for the Proposed Development will be made to the Scottish Ministers under section 37 of the Electricity Act 1989, along with a request for a direction that planning permission be deemed to be granted under section 57 (2) of the Town and Country Planning (Scotland) Act 1997².

The Proposed Development is not considered an 'EIA Development' under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017³ (hereafter referred to as the 'EIA Regulations'). Accordingly, there is no requirement to produce an Environmental Impact Assessment Report (EIAR) under the EIA Regulations. However, an Environmental Appraisal (EA) has been carried out as a non-statutory assessment to allow appropriate environmental management and mitigation measures to be identified based on the Proposed Development Description outlined in **Chapter 3: Proposed Development and Alternatives**. This EA Report provides information gathered as a result of the EA and explains and supports performance of the Applicant's obligations under Schedule 9 of the Electricity Act 1989 to preserve amenity and mitigate environmental effects (see **Chapters 4 to 8**).

This EA Report has been prepared in accordance with the recently adopted (13th February 2023) National Planning Framework 4 (NPF4)⁴ with cognisance given to the policies within the relevant chapters.

1.1.1 Biodiversity Net Gain

Biodiversity Net Gain (BNG) is a process which leaves nature in a better state than it started. Although it is an internationally recognised process and tool within the development industry, it is not a term that is widely used or implemented in Scotland. A small handful of businesses are making voluntary commitments to incorporating BNG into their projects, including the Applicant.

The Applicant has developed a BNG toolkit based upon the Natural England metric, which aims to quantify biodiversity based upon the value of habitats for nature. It is an efficient and effective method for demonstrating whether development projects have been able to maintain or increase the biodiversity value of a development site after construction works.

For BNG to be used appropriately and to generate long-term gains for nature, the good practice principles established by the Business and Biodiversity Offset Programme (BBOP) should be followed. These principles have been established in the context of UK development by the Construction Industry Research and Information Association (CIRIA), the Chartered Institute for Ecology and Environmental Management (CIEEM) and the

¹ <https://www.legislation.gov.uk/ukpga/1989/29/contents>

² <https://www.legislation.gov.uk/ukpga/1997/8/section/57>

³ <https://www.legislation.gov.uk/ssi/2017/101/contents/made>

⁴ National Planning Framework 4. Available here: <https://www.gov.scot/publications/national-planning-framework-4/>

Institute of Environmental Management and Assessment (IEMA)⁵. BNG does not apply to Statutory designated sites or irreplaceable habitats (e.g. Ancient Woodland, blanket bog)⁶.

Through completion of the BNG assessment process, the Proposed Development will also satisfy Policy 3 of the recently adopted NPF4⁷, which plays a key role in ensuring that development will secure positive effects for biodiversity.

In line with the Applicant's Sustainability Strategy⁷ and NPF4, a BNG assessment will be completed following submission⁸ of the s37 Application.

1.2 Overview of Proposed Development

The characteristics of the Proposed Development, as shown on **Figure 3.1a and 3.1b (Volume 3a)** are provided below:

- Removal of existing section of the 132 kV Inveraray to Taynuilt OHL, between Tower 35A and Tower 36A (approximately 215 m);
- construction, operation and decommissioning of a temporary diversion route and wood pole tower locations (approximately 743 m);
- construction and operation of new angle towers at Towers 35A⁹ and 36A to replace existing towers;
- construction and operation of new terminal towers 35B and 36B;
- construction and operation of a new section of overhead line (approximately 170 m) between angle tower 35A to terminal tower 35B and downloads to substation gantry structures;
- construction and operation of a new section of overhead line between angle tower 36A to terminal 36B (approximately 137 m) and downloads to substation gantry structures;
- land take to accommodate ancillary works, including the construction of proposed new permanent and temporary access tracks and upgrades to existing access tracks.

The following elements do not require consent but have been considered for the purpose of the EA. The associated works include the following:

1. The Proposed Development will use the temporary laydown area¹⁰ (approximately 1.5 ha) which is to be constructed for the proposed Creag Dhubh Substation (Planning Ref: 22/00782/PP)
2. Works associated with the construction of the proposed Creag Dhubh Substation, including upgrading the existing culverted watercourse crossing (River Aray), widening of the existing forestry track, would also be required for the Proposed Development. These works have been considered as part of the Creag Dhubh Substation (Planning Ref: 22/00782/PP).
3. The gantries will be considered as part of the proposed Creag Dhubh Substation (Planning Ref: 22/00782/PP).

⁵ 10 CIRIA, CIEEM and IEMA, 2016. Biodiversity Net Gain: Good Practice Principles for Development. Available at: <https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf>

⁶ Any irreplaceable habitats identified, including ancient woodland and good/moderate condition blanket bog, are entered into the assessment toolkit. This is a requirement of the BNG process as it is not possible to compensate for losses to irreplaceable habitat and they are therefore not quantified. This follows UK best practice and the SSEN Transmission BNG guidance.

⁷ <https://www.ssen-transmission.co.uk/sustainability-and-environment/sustainability-strategy/>

⁸ As a BNG assessment is not a planning requirement, it will be completed post application. As BNG is based on definitive numbers, this allows the BNG assessment to be undertaken based on final designs, resulting in a more accurate output.

⁹ The proposed height of the replacement tower would result in an increase of more than 20% when compared to the existing tower, and therefore falls above the limit set out under Section 4(d) of The Overhead Lines (Exemption)(Scotland) Regulations 2013.

¹⁰ Subject of Permitted Development, under The Town and Country Planning (General Permitted Development)(Scotland)Amendment Order 1992.

4. The existing Tower 35A would be replaced with an angle tower under The Overhead Lines (Exemption) (Scotland) Regulations 2013.

1.3 Background and Project Need

Infrastructure for the transportation of low carbon electricity is essential to delivering the Scottish Government target for the equivalent of 50% of Scotland's heat, transport, and electricity consumption to be supplied from renewable sources. There is a requirement¹¹ for the Applicant to increase its network capability in Argyll and Kintyre, beyond that already under current construction and public development, to enable the connection of further renewable generation and to export to the wider GB network.

This group of works designed to deliver the required increase in network capacity has been named the 'Argyll and Kintyre 275 kV Strategy'. The Proposed Development forms part of wider 'Argyll and Kintyre 275 kV Strategy':

<https://www.ssen-transmission.co.uk/projects/argyll-and-kintyre-275kv-strategy/>

These associated developments are listed below and shown on **Figure 1.2 (Volume 3a)**:

- Creag Dhubh Substation (Planning ref: 22/00782/PP) - a new 132/ 275 kilovolt (kV) substation and associated infrastructure, located approximately 2.5 km southwest of Cladich, Argyll and Bute.
- Creag Dhubh to Dalmally 275 kV OHL Connection (Planning ref: ECU00002199) – proposed new OHL that would operate at 275 kV between the Proposed Development and a Tie-In on the Scottish Power Energy Networks (SPEN) line at Glen Lochy (Succoth Glen), connecting Dalmally and Inverarnan.
- Inveraray to Creag Dhubh 275 kV OHL (Planning ref: ECU00003442) – proposed new OHL that would operate at 275 kV between the proposed Creag Dhubh Substation, and a connection point on the in-construction Inveraray to Crossaig OHL.

1.4 Application for Section 37 Consent

Consent for construction of the Proposed Development is being sought with an application to the Scottish Ministers, under Section 37 of the Electricity Act 1989.

1.4.1 EIA Screening

The Proposed Development is not covered under the developments listed within Schedule 1¹² of the EIA Regulations. The Proposed Development involves the change or extension of the existing 132 kV Inveraray to Taynuilt OHL, a Schedule 2 development under The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 and is therefore considered a Schedule 2¹³ development.

Schedule 3¹⁴ sets out the criteria that must be considered during EIA Screening of Schedule 2 developments. These are:

- Characteristics of the development;
- Location of the development; and
- Characteristics of the potential impact.

¹¹ Section 9 of the Electricity Act 1989.

¹² <https://www.legislation.gov.uk/ssi/2017/101/schedule/1/made>

¹³ <https://www.legislation.gov.uk/ssi/2017/101/schedule/2/made>

¹⁴ <https://www.legislation.gov.uk/ssi/2017/101/schedule/3/made>

The Applicant submitted an EIA Screening request (Planning ref: ECU 00004606) on 6th September 2022 for the proposed Inveraray to Taynuilt (ITE/ITW¹⁵) Tie-in Connection and it was determined by the Scottish Ministers that the proposal does not constitute 'EIA development'.

A formal Screening Opinion was received from the Scottish Ministers on 26 November 2022 (**Technical Annex 1.2, Volume 2**), which confirmed that the Proposed Development does not fall within Schedule 1 or Schedule 2 of the EIA Regulations and does not constitute 'EIA development'.

Notwithstanding this, the Applicant's statutory obligations as transmission licence holder under the Electricity Act 1989 requires the Applicant to take forward all development proposals in a responsible manner with due regard for the environment¹⁶. As such, the Applicant has undertaken a non-statutory EA as part of a package of supporting information to accompany the application for planning permission to identify, assess and have due regard to environmental impacts resulting from the Proposed Development in the context of duties under schedule 9 of the Electricity Act 1989. The requirement for an EA was confirmed by the Scottish Ministers in their Screening Opinion, where, given the scale and nature of the development, and the quality and sensitivity of its landscape setting, an EA should be submitted which addresses the environmental matters listed within the Screening Opinion and responded to in **Table 1.1** below.

One statutory designated nature conservation site for ornithological features occurs within the desk Study Area, as shown on **Figure 4.1 (Volume 3a)**. Glen Etive and Glen Fyne Special Protection Area (SPA), classified for breeding golden eagle *Aquila chrysaetos*, lies 1 km west of the Proposed Development at its closest point. This is close enough to have potential connectivity between the Proposed Development and the SPA. Therefore, a Stage 1 Habitat Regulations Screening assessment has been completed to assess the potential for Likely Significant Effects (LSEs) upon the Glen Etive and Glen Fyne SPA from the construction and operation of the Proposed Development, either alone or in combination with other plans or projects and in the absence of any mitigation. Details of this assessment are located in **Technical Annex 4.2 (Confidential Volume 4)**.

1.5 Consultation

The Proposed Development is restricted in its nature as it relates to alterations required to the existing Inveraray to Taynuilt 132kV OHL to facilitate it to connect into the proposed Creag Dhubh Substation to ensure security of electricity supply. The nature of the works and limited engineering solutions available means there is limited opportunity to amend the design based on consultation feedback therefore, no formal consultation has been undertaken for the Proposed Development. The Applicant also notes that there is no statutory obligation to undertake consultation for s37 applications which have been screened as non EIA.

Extensive consultation has already undertaken for the adjacent schemes outlined in Section 1.3, and that process has resulted in stakeholder feedback to shape mitigation measures that would be expected. Due to the proximity of these schemes, the Applicant is committed to ensure that feedback from these consultations is considered and appropriate best practice mitigation measures are presented within this EA. **Table 1.1** sets out the key points raised by statutory and non-statutory consultees within the Screening Opinion and from the previous public consultations for the associated developments (Section 1.3). **Table 1.1** confirms how these have been addressed in the EA and/ or within the other supporting documents lodged with the application.

¹⁵ Inveraray to Taynuilt East and Inveraray to Taynuilt West

¹⁶ Specifically to: '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 to do what he[sic] reasonably can 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.

Following the s37 submission, the Applicant would commit to informing local residents once the application is submitted to reiterate how people can respond as well as providing regular updates to key stakeholders, including community councils.

Table 1.1: Summary of Key Environmental Issues

Stakeholder	Consultation Feedback	Applicants Response	EA Chapter Reference
Screening Opinion 2022			
The Scottish Ministers (Screening Opinion 26/22/2022)	As noted within this chapter, the Proposed Development is not considered to constitute EIA Development; however, due to the scale and nature of the development, and the quality and sensitivity of its landscape setting an EA has been undertaken, as presented herewithin. The EA has addressed all the matters requested by the Scottish Ministers, noting the following:		
	<ul style="list-style-type: none"> • Landscape and Visual Amenity' • Bare Land ZTV; • Land Use designations material to the proposal; • Recreation and Tourism; (footpaths and access for recreation users of the woodland) 	Matters relating to landscape and visual amenity have been captured within the EA.	Details on the potential Landscape and visual impacts, as well as any mitigation requirements is located in Chapter 5: Landscape and Visual Impact (Volume 1)
	<ul style="list-style-type: none"> • Ecology and Nature Conservation Surveys; • Ornithology surveys; 	Matters relating to ecology and ornithology have been captured within the EA.	Details on the potential ecology and ornithology impacts, as well as any mitigation requirements is located in Chapter 4: Ecology and Ornithology Appraisal (Volume 1)
	<ul style="list-style-type: none"> • Cultural Heritage 	Matters relating to cultural heritage have been captured within the EA.	Details on the potential cultural heritage impacts, as well as any mitigation requirements is located in Chapter 6: Cultural Heritage and Archaeology (Volume 1)
	<ul style="list-style-type: none"> • Forestry;(updated felling/planting schedules and implications for ZTV) 	The Proposed Development would result in a small loss of commercial plantation; therefore, a detailed forestry assessment	Details on the potential forestry impacts, as well as any mitigation requirements is located in Technical Appendix 2.1: Woodland Report (Volume 2).

Table 1.1: Summary of Key Environmental Issues

		<p>was scoped out (Refer to Section 2.2) of the EA.</p> <p>However, as good practice a woodland report has been produced to ensure relevant mitigation measures are in place and there is no net loss of woodland.</p>	<p>ZTV analysis has been based on a bare ground terrain model that does not take account of the screening impact of vegetation, micro-topographical forms or built forms, presenting a worst case scenario. The Proposed Development as a significant portion of the Study Area contains commercial forestry, deciduous tree cover, hedges and riparian vegetation. Consequently, visibility would be considerably less than indicated in the ZTVs (Figures 5.2 a-b, Volume 3a).</p>
	<ul style="list-style-type: none"> Traffic and Transport; (A Transportation Plan will be required for routing of traffic associated with transporting any large plant and construction materials) 	<p>A detailed traffic assessment was scoped out of the EA as the increase in traffic movements from construction traffic would be relatively minimal, temporary and local in scale. However, as good practice, a Traffic Management Plan (TMP) will be produced as part of the CEMP.</p>	<p>Further details on why this topic was scoped out are provided in Section 2.2. Further details of construction traffic numbers are located in Technical Annex 2.2 (Volume 2).</p> <p>The Outline CEMP is located in TA 3.2 (Volume 2).</p>
	<ul style="list-style-type: none"> Amenity and Health (Noise and Vibration and Electromagnetic Fields); 	<p>Matters relating to amenity and health have been scoped out of the EA.</p>	<p>Further details on why EMF and noise were scoped out are provided in Section 2.2.</p>
	<ul style="list-style-type: none"> Hydrology, Hydrogeology and Soils: (A detailed Peat survey should be submitted with any necessary mitigation/management proposals associated with the development in its entirety). 	<p>Matters relating to hydrology, hydrogeology and soils have been captured within the EA.</p>	<p>Details on potential hydrology and geology impacts, as well as any mitigation requirements is had been captured in Chapter 7 Hydrology and Geology (Volume 1). Details of peat surveys and management of peat are provided in TAs 7.1- 7.3 (Volume 2).</p>
	<ul style="list-style-type: none"> Construction methodology and waste plan to include noise assessment in respect of construction methodology should any protected species or sensitive receptors be identified within the locality of 	<p>Matters relating to construction methodology have been captured within the Outline CEMP to be presented alongside the EA.</p>	<p>The Outline CEMP is located in TA 3.2 (Volume 2).</p>

Table 1.1: Summary of Key Environmental Issues

	the proposal that could be adversely impacted by construction noise.		
<p>Creag Dhuhb to Dalmally 275kV Connection – Public Consultation (Summer 2021)</p> <p>This public consultation feedback was received in response to the Creag Dhuhb to Dalmally OHL (Planning ref: ECU00002199), the Applicant reviewed this feedback in the context of the proposed development and has provided a response and included further details in the EA.</p>			
NatureScot	NatureScot requested that the transmission line not to be on the skyline along the southeast side of Loch Awe at its northern end and for the inevitable skyline of the line crossing southeast to Creag Dhuhb substation to be minimised.	Along the shores of Loch Awe and areas to the west and south west the majority of Proposed Development would be screened by topography with only a small element of one tower visible at areas to the north of Loch Awe as shown in Viewpoint (VP) 2, VP6 and VP8. No elements of the Proposed Development would be skylined.	Further details on the potential Landscape and visual impacts, as well as any mitigation requirements is located in Chapter 5: Landscape and Visual Impact (Volume 1) . All photomontages and wirelines for the agreed VPs are located in Volume 3b .
NatureScot	Potential impacts on Glen Etive and Glen Fyne Special Protection Area (SPA). The SPA is classified for breeding golden eagle <i>Aquila chrysaetos</i> .	The Applicant ensured that a Habitat Regulations Appraisal was undertaken (in consultation with NatureScot), to inform an Appropriate Assessment if deemed necessary.	Potential disturbance of golden eagle territories within the Glen Etive and Glen Fyne SPA is assessed in more detail in Technical Appendix 4.2: Habitat Regulations' Appraisal (Confidential Volume 4) .
Scottish Forestry	Scottish Forestry advised that both the UK Forestry Standard - 4 th Edition – 2017 (UKFS) and Scottish Governments Control of Woodland Policy 2009 (CoWRP) are relevant to the OHL project. As with previous projects, forest design and wider felling need to be taken into account, with similar landscape work being completed as per Inveraray Crossaig. In addition, the hydrology of development felling in context	Guidance provided in the UK Forestry Standard - 4 th Edition – 2017 (UKFS) and Scottish Governments Control of Woodland Policy 2009 (CoWRP) has been and will be adhered to in the development of the proposed design. It is also confirmed that the hydrology of development felling will be considered in the	Further details on felling proposals can be found in Technical Annex 2.1: Woodland Report (Volume 2) . Further details on Hydrology are located in Chapter 7: Hydrology and Geology (Volume 1) .

Table 1.1: Summary of Key Environmental Issues

	with the normal forest activity needs to be considered in relation to any sensitive waters, including Loch Awe.	environmental assessments in relation to any sensitive areas.	
Local community	Concerns from local residents regarding visual amenity.	Visualisations were prepared to provide the project team with understanding of the visual impacts from the agreed viewpoints (VPs).	Further details on the potential Landscape and visual impacts, as well as any mitigation requirements is located in Chapter 5: Landscape and Visual (Volume 1) . All photomontages and wirelines for the agreed VPs are located in Volume 3b .

1.6 The Project Team

The Applicant has appointed a project team to assist in the development of the application. The members of the project team and their respective roles are presented in **Table 1.2**. Each technical chapter (**Chapters 4 to 7**) presents a statement from the Applicant outlining the relevant expertise or qualifications of the component experts that have undertaken and prepared the EA.

Table 1.2: Project Team	
Company	Team
SSEN Transmission	The Applicant
SSEN Transmission	ITE/ ITW Connection Design
Ramboll UK Limited (Ramboll)	Lead Environmental Consultant Technical Assessments: <ul style="list-style-type: none"> • Ecology and Ornithology Appraisal; • Hydrology and Geology Appraisal; and • Landscape and Visual Appraisal.
CFA Archaeology	Cultural Heritage and Archaeology Appraisal

1.7 Structure of EA

The structure of the EA is as follows:

- Volume 1: Main Environmental Appraisal
 - Chapter 1: Introduction
 - Chapter 2: Environmental Appraisal Methodology and Scope
 - Chapter 3: Proposed Development and Alternatives
 - Chapter 4: Ecology and Ornithology Appraisal
 - Chapter 5: Landscape and Visual
 - Chapter 6: Cultural Heritage and Archaeology
 - Chapter 7: Hydrology and Geology
 - Chapter 8: Schedule of Mitigation
- Volume 2: Technical Annexes
- Volume 3a: Figures
- Volume 3b: Visualisations
- Volume 4: Confidential

1.8 Further Information

Further information on the project is available from the Applicant's website at [Creag Dhubh - Dalmally 275kV Connection - SSEN Transmission \(ssen-transmission.co.uk\)](https://www.ssen-transmission.co.uk). Queries regarding the Proposed Development should be directed to:

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Scottish & Southern Electricity Networks (SSEN) Transmission PLC

Inveralmond House, 200 Dunkeld Road,

Perth

PH1 3AQ

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2. ENVIRONMENTAL APPRAISAL METHODOLOGY AND SCOPE

2.1 Introduction

Consultation with key stakeholders including SEPA, NatureScot (NS), Historic Environment Scotland (HES) and West of Scotland Archaeology Service (WoSAS), identified potential for adverse environmental effects associated with the Proposed Development which required assessment and management. This EA has been produced as a non-statutory document to address the potential environmental effects of the Proposed Development and allow appropriate environmental management and mitigation measures to be identified.

This chapter outlines the approach and methodology adopted throughout the EA for the Proposed Development.

2.2 Scope of the EA

Taking account of the key points from the screening opinion and previous consultation feedback from the associated developments (Section 1.3), the following environmental issues associated with the Proposed Development have been identified as material to the determination of the section 37 application:

- Chapter 4: Ecology and Ornithology Appraisal
- Chapter 5: Landscape and Visual
- Chapter 6: Cultural Heritage and Archaeology
- Chapter 7: Hydrology and Geology

A number of potential environmental topics were scoped out of the EA as discrete technical chapters, as explained in **Table 2.1** below.

Table 2.1: Environmental Topics Scoped Out from Further Consideration within the EA	
Environmental Topic	Discussion
Air Quality	The Proposed Development would not result in significant adverse effects on air quality or climate change during the construction or operational phases. The Proposed Development would contribute to connecting renewable electricity generation capacity to the transmission network, in turn displacing emissions associated with fossil fuel based electricity generation elsewhere. As such, this issue is scoped out of the EA and no assessment of air quality has been undertaken for the EA Report.
Socioeconomics, Recreation and Tourism	The potential effects on visual amenity for tourism and recreational routes and receptors will be assessed in the EA Report as part of the LVIA. There are no core paths and national cycle routes in the surrounding through a Traffic Management Plan (TMP), within a Construction Environmental Management Plan (CEMP) (see Outline CEMP provided in Technical Annex 3.2, Volume 2). Therefore, no separate recreation and tourism assessment has been completed for the EA Report.
Forestry	The Site is located within a large commercial conifer plantation which is in the process of being harvested. The surrounding land is a mix of regenerating moorland, conifers and a small number of large trees which have been retained. The majority of the Proposed Development lies in semi-mature commercial forestry plantation (approximately 20 years old) and the existing wayleave for the 132 kV Inveraray to Taynuilt OHL, which crosses modified heath. A small amount of felling (approximately 2.4 ha) would be required around the temporary diversion; this is considered to have a minimal impact of forestry. A Woodland Report has been prepared to accompany the application (Technical Annex 2.1: Woodland Report, Volume 2) to identify the potential impacts from the Proposed Development in respect of woodland management and risks from wind

Table 2.1: Environmental Topics Scoped Out from Further Consideration within the EA

	<p>throw in order to set out the management and mitigation measures to be implemented to mitigate impacts and ensure there is no net loss of woodland.</p> <p>In addition to the Woodland Report, matters relating to forestry have been addressed in the following Chapters of this EA: Chapter 3: Proposed Development and Alternatives; Chapter 5: Landscape and Visual; Chapter 4: Ecology and Ornithology; and Chapter 7: Hydrology and Hydrogeology.</p>
Traffic and Transport	<p>Construction traffic would comprise construction staff in private cars, and HGVs / light goods vehicles (LGVs) carrying construction materials and personnel. Construction traffic would utilise the existing access from the A819, which connects to the existing forestry tracks and new tracks within the Proposed Development (see Figure 3.1b, Volume 3a).</p> <p>This would result in additional vehicle movements; however, increases in movements would be relatively minimal, temporary and local in scale. Within the peak month for construction traffic there will be less than 10 HGV movements in either direction. Considering the minimal increase in traffic movements, a detailed Traffic Assessment has been scoped out of the EA. Further details of construction traffic numbers are located in Technical Annex 2.2 (Volume 2).</p> <p>An Outline CEMP (Technical Annex 3.2, Volume 2) has been prepared to ensure that all construction activities are undertaken as per the Applicant's standard practices, including measures in relation to public safety and site security, site operating hours, management of dust and dirt, and traffic management, including access route to and from the Proposed Development, such as keeping to the strategic road network and avoiding sensitive receptors as far as practicable. This will be developed by the Principal Contractor.</p>
Noise and Vibration	<p>There are existing forestry activities adjacent to the Proposed Development. The baseline noise environment is influenced by this activity (cars, trucks, machinery) but this is only temporary when harvesting is being undertaken. There may also be minor vehicular noise from the A819 which joins the Proposed Development and this is located approximately 1 km from the Tie-In at its closest point.</p> <p>Construction works related to the Proposed Development are predicted to have the greatest potential to generate noise from:</p> <ul style="list-style-type: none"> • rotary piling during the construction of foundations; • excavators, delivery of materials with lorries/dumper trucks, delivery and pumping of concrete; and • installation of electricity towers, including the use of cranes. <p>A baseline noise assessment was undertaken by WSP in 2018 for the adjacent proposed Creag Dhubh substation in accordance with BS 4142. The assessment identified that the only Noise Sensitive Receptor (NSR) to be considered was the dwelling at Keppochan Farmhouse, approximately 2 km from the proposed Creag Dhubh Substation.</p> <p>The noise assessment¹⁷ performed for the construction and operation of the proposed Creag Dhubh to Dalmally 275 kV OHL Connection, predicted negligible impacts as the potential noise impacts would be sufficiently attenuated due to the distance from the NSR.</p> <p>As the Proposed Development is adjacent to the Creag Dhubh to Dalmally OHL Connection, impacts to the closest NSRs (NSR 2 – 1.9 km & NSR 4 – 2 km) would also be considered negligible given the distance. Furthermore, in respect of</p>

¹⁷ SSEN Transmission (2022), Creag Dhubh to Dalmally 275 kV Connection: EIA, Chapter 12 – Available here: <https://www.ssen-transmission.co.uk/projects/project-map/creag-dhubh---dalmally-275kv-connection/>

Table 2.1: Environmental Topics Scoped Out from Further Consideration within the EA

	<p>operational noise, the Proposed Development would result in the replacement of and alterations to the existing OHL and accordingly no new impacts would arise. In this regard, there would be no in-combination impacts from the Proposed Development with the proposed Creag Dhubh to Dalmally 275 kV OHL Connection and Creag Dhubh Substation.</p> <p>Therefore, construction and operational noise impacts would be predicted as negligible due to the distance of NSRs and can be scoped out of further assessment.</p> <p>However, measures will be included in the CEMP, to be agreed with Argyll and Bute Council and secured by an appropriately worded planning condition and will include best practice measures (BPMs) as outlined in BS 5228.</p>
Electromagnetic Fields (EMF)	<p>There is no statutory requirement to provide details on emissions (including radiation) for non- EIA projects. However EMF levels will be in line with the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines¹⁸.</p>

2.3 Environmental Appraisal Methodology

An environmental appraisal has been undertaken for each of the environmental topics scoped into the EA which has aimed to determine the potential for environmental impacts and effects of the Proposed Development on the existing baseline and allow appropriate environmental management and mitigation measures to be identified.

The appraisal methodology for each of the technical topics is presented in **Chapters 4 to 7** of this EA, with a summary provided below. Each of the appraisals have considered relevant legislation and guidance and consultation has been undertaken with relevant stakeholders where appropriate.

2.3.1 Baseline Characterisation

To identify the potential impacts as a result of the Proposed Development, it is necessary to establish the existing baseline environmental conditions. The baseline scenario was established through the following methods, where relevant:

- Site visits and surveys;
- Desk-based studies;
- Review of existing information;
- Modelling;
- Review of relevant national and local planning policies;
- Consultation with the relevant statutory consultees; and
- Identification of Sensitive Receptors.

The environmental baseline adopted for the purposes of the EA is stated in each of the technical assessment chapters provided in the EA. The baseline is normally taken as the current character and condition of the site and surrounds, and the likely significant environmental effects of the Proposed Development are then assessed in the context of the current conditions.

¹⁸ <https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf> ("1998 Guidelines") or the ICNIRP Guidelines for limiting exposure to electromagnetic fields (100 KHz to 300 GHz), published in: Health Physics 118(5): 483–524; 2020 and available at: <https://www.icnirp.org/cms/upload/publications/ICNIRPrfgdl2020.pdf> ("2020 Guidelines").

2.3.2 Identification of Potential Impacts and Effects

Each technical chapter contains a section that identifies the potential impacts and effects on the environment that may arise as a result of the construction and operation of the Proposed Development. Decommissioning effects are analogous to construction effects but considered to be less significant as no excavation is likely to be required; smaller machinery is generally used and the duration of decommissioning works is shorter. Furthermore, decommissioning of the Proposed Development would be the subject of a separate application. Considering this, the effects of decommissioning the Proposed Development have been scoped out of this EA Report.

Whilst the temporary lay down area (**Figure 3.1b, Volume 3a**) does not form part of this application, as it is required for the construction of the Proposed Development, each technical chapter has also identified the potential impacts and effects on the environment that may arise as a result of temporary laydown area to ensure a worst-case assessment is undertaken.

The characteristics of an effect would vary depending on the duration of the activity, the sensitivity of the receptor and the resultant change. Therefore, it is necessary to assess whether the effect is temporary or permanent; beneficial or adverse and direct or indirect. Temporary effects are usually reversible and generally confined to the construction period. For the purposes of this EA Report the terms used in the assessment are defined as follows:

- Impact – is specific and defined as the action being taken, for example, cutting down trees;
- Effect – is defined as the change resulting from that action, for example, loss of habitat;
- Temporary - where the effect occurs for a limited period of time and the change at a defined receptor can be reversed;
- Permanent - where the effect represents a long-lasting change at a defined receptor which is not reversible;
- Direct - where the effect is a direct result (or primary effect) of the Proposed Development;
- Indirect - a knock-on (or secondary) effect which occurs within or between environmental components, may include effects on the environment which are not a direct result of the Proposed Development, often occurring away from the proposals or as a result of a complex biological or chemical pathway;
- Secondary – an induced effect arising from the actions or presence of a project, such as changes to the pattern of future land use or improvements to local road networks;
- Cumulative - these effects may arise when more than one development of a similar scale and nature combine to create a potentially greater impact than would result from the Proposed Development alone (see also below);
- Beneficial – an effect beneficial to one or more environmental receptors; and
- Adverse – a detrimental, or negative, effect on one or more environmental receptors.

Where a more specific definition of the above terms is applicable to a technical discipline this is clearly outlined within the technical chapters (**Chapters 4 to 7**). As the Proposed Development is not considered an 'EIA Development', as agreed by the Scottish Ministers in their formal Screening Opinion received 26 November 2022 (**Technical Annex 1.2, Volume 2**), the assessment has not been undertaken in the context of the EIA Regulations in determining the significance of effect. However, as presented above, the EA methodology has broadly followed the impact assessment approach through the identification of potential impacts and effects and technical topics have considered receptor sensitivity and magnitude of impacts, as required.

2.3.3 Cumulative Effects

There are two aspects to Cumulative Effects, defined as follows:

- Inter-cumulative effect: The combined effect of the Proposed Development together with other reasonably foreseeable developments (taking into consideration effects at the site preparation and earthworks, construction, and operational phases); and,

- Intra-cumulative effect: The combined or synergistic effects caused by the combination of a number of effects on a particular receptor (taking into consideration effects at the site preparation and earthworks, construction, and operational phases), which may collectively cause a more significant effect than individually. A theoretical example is the culmination of disturbance from dust, noise, vibration, artificial light, human presence, and visual intrusion on sensitive fauna (e.g., certain bat species) adjacent to a construction site.

A search for other relevant developments was undertaken on 10th January 2023 using the following sources:

- Scottish Government - The Energy Consents Unit Portal: <https://www.energyconsents.scot/ApplicationSearch.aspx>
- Argyll and Bute Council Planning Portal: <https://publicaccess.argyll-bute.gov.uk/online-applications/search.do?action=simple&searchType=Application>
- Ramboll's internal database

This considered developments recorded as consented (under construction or not yet constructed), those in planning and those within the public domain, or those deemed reasonably foreseeable, within 10 km¹⁹ of the Proposed Development. In addition to this, **Chapter 5: LVIA (Volume 1)** will also consider relevant developments at scoping stage or which are operational, within 10 km.

The individual technical **Chapters 4 to 7 (Volume 1)** present the findings of the assessment of cumulative effects of the Proposed Development with other schemes. A list of considered developments is provided below and illustrated in **Figure 2.2 (Volume 3)**:

- Creag Dhubh to Dalmally 275 kV OHL Connection (ECU00002199, In Planning, part of the Argyll and Kintyre 275kV Strategy)
- Inveraray to Creag Dhubh 275 kV OHL Connection (ECU00003442), In Planning, part of the Argyll and Kintyre 275kV Strategy)
- Creag Dhubh Substation (22/00782/PP, In Planning, part of the Argyll and Kintyre 275kV Strategy))
- Blarghour Wind Farm, Land 7 km northwest of Inveraray (ECU00005267; consented 29 October 2021);
- Cruachan Expansion, (ECU00003298), In Planning²⁰;
- Blarghour Wind Farm Connection Project (pre-planning, reasonably foreseeable as part of the Argyll and Kintyre 275 kV Strategy);
- Meteorological mast land 1.5 km northwest of Ladyfield Cottage, Ladyfield Forest (20/02178/PP; consented March 2021); and
- Commercial forestry schemes, including, but not limited to, the M23: Keppochan East and Tullich Indicative LTFP within which the Proposed Development is located.

Each of the technical assessments have considered those cumulative schemes which fall within their individual Study Area (as highlighted in **Chapters 4 to 7**), and which would have potential for in-combination effects with the Proposed Development. Justification for the cumulative schemes considered within each assessment is provided in **Chapters 4 to 7**.

In the hierarchy of mitigation, adverse effects should in the first instance be avoided, then reduced and finally, where possible, offset²¹. Adverse effects are best avoided through route/alignment selection and design. In this

¹⁹ Based on professional judgement of technical specialists.

²⁰ The Cruachan Expansion has been included within the cumulative list for completeness, however due to the distance from the Proposed Development and the localised nature of effects, it is unlikely that this development will result in a cumulative effect and has therefore not been considered any further within the technical chapters.

²¹ The Scottish Government, 2013. Planning Advice Note – Environmental Impact Assessment. Available at: <file:///C:/Users/RRABYSMITH/Downloads/00521028.pdf> [Accessed 04 October 2021]

case, the route and alignment were informed by the baseline environmental assessment, access considerations and the OHL routing process, in accordance with SSEN OHL Routing guidance²². As the design developed, potential effects were identified, and the proposals refined to mitigate likely significant environmental effects. The design and alternatives consideration process is discussed in Section 3.8.

Mitigation measures to avoid, reduce or, if appropriate, offset adverse effects on the environment would also be implemented during the construction phase or once the development is completed. Where the appraisal draws on mitigation that would be implemented in the future, the Applicant has committed to the mitigation measures set out in the relevant technical chapter. A summary of all proposed mitigation measures is set out in **Chapter 8: Schedule of Mitigation**.

²² SSEN, 2020. Procedures for Routeing Overhead Lines and Underground Cables of 132kV and above. Document reference: PR-NET-ENV-501

3. PROPOSED DEVELOPMENT AND ALTERNATIVES

3.1 Introduction

This chapter provides a description of the physical characteristics and the main construction and operational activities associated with the Proposed Development for the purpose of identifying and assessing potential environmental effects.

3.2 Site Location

The Proposed Development is located approximately 2.5 km southwest of Cladich in Argyll and Bute, Scotland. It encompasses a 740 m section of the existing 132 kV Inveraray to Taynuilt OHL. The Site location plan is shown in **Figure 1.1 (Volume 3a)**, which shows the area of the Proposed Development.

The Site is located within a large commercial conifer plantation currently being harvested. The surrounding land is a mix of regenerating moorland, conifers and a small number of large trees which have been retained. The majority of the Proposed Development lies in semi-mature commercial forestry plantation (approximately 20 years old) and the existing wayleave for the 132 kV Inveraray to Taynuilt OHL, which crosses modified heath. Further details on Forestry are provided in **Technical Annex 2.1 (Volume 2)**.

There are no Statutory or Non-Statutory designated ecological sites within the boundary of the Proposed Development. The nearest designated site is the Glen Etive and Glen Fyne Special Protection Area²³ (SPA) which is approximately 1 km west of the Proposed Development. **Figure 2.1 (Volume 3a)** shows the Proposed Development in relation to any Statutory and Non-Statutory designations, with further details provided in **Chapter 5: Ecology and Ornithology (Volume 1)**.

The Proposed Development is located between the headwaters of the River Aray. The Proposed Temporary Diversion Pole 5 is approximately 25 m from one of the tributaries, which flows in a north-easterly direction and discharges into the River Aray to the north. Proposed Temporary Diversion Pole 1 is approximately 36 m from another tributary of the River Aray which flows in an easterly direction. The existing forestry access track crosses a number of tributaries of the River Aray using existing culverted watercourse crossings. The Site layout is illustrated on **Figure 3.1a (Volume 3a)**

The wider surrounding area is sparsely populated with the nearest residential receptors at Cladich, approximately 2.5 km to the north east. The main road network comprises the A819 carriageway, which provides the main access to the Site.

More detailed descriptions of the baseline environment conditions are described in **Chapters 4 to 7** of this report.

3.3 The Proposed Development

The proposed Tie-In would connect the existing 132 kV Inveraray to Taynuilt OHL to the proposed Creag Dhubh Substation to allow connection for renewable generation in the area to the wider electricity network. To facilitate these works a temporary diversion of the existing 132 kV Inveraray to Taynuilt OHL will be in place for 18 months.

The Proposed Development consist of the Tie-In Site which encompasses 740 m of the existing Inveraray to Taynuilt OHL. The Proposed Development layout is shown in **Figure 3.1a (Volume 3)** and would comprise the following:

- Removal of existing section of the 132 kV Inveraray to Taynuilt OHL, between Tower 35A and Tower 36A.
- The construction, operation and decommissioning of a temporary diversion route and wood pole tower locations. A single circuit temporary diversion for the existing 132 kV Inveraray to Taynuilt OHL is required to build the new towers and to tie-In to the proposed Creag Dhubh Substation. The temporary diversion would

²³ Designated for its golden eagle *Aquila chrysaetos* population.

have approximately eight wood poles (with a maximum height of 16 m) and is positioned to the south of the existing 132 kV Inveraray to Taynuilt OHL between existing Towers 34 and 37. The temporary diversion (approximately 743 m long) is expected to be in place for approximately 18 months. The construction and removal of the wood poles would require temporary trackways and bog mats along the length of the temporary diversion.

- The construction and operation of two new Terminal Towers (35B and 36B). The new terminal towers would be installed (approximately 141 m and 115 m away from the existing 132 kV Inveraray to Taynuilt OHL), extending up to approximately 29 m (T35B) and 31 m (T36B) in height.
- The existing Tower 36A (which is 19.9 m tall) would be replaced with an angle tower, extending up to 38.4 m tall²⁴. Existing Tower 35A, which is 25.7 m tall, would be replaced with an angle tower, extending up to approximately 28.4 m²⁵.
- Creation of a new section of overhead line between angle tower 35A and 35B (approximately 170 m) to terminal tower 36AB and 36B (approximately 137 m), and downloads to substation gantry.
- Creation of approximately 700 m new permanent access track, connecting to the existing access track to the southeast of the Proposed Development and upgrades to approximately 495 m of existing access track (between B–C in **Figure 3.1b**) connecting to the access track to be upgraded for the proposed Creag Dhubh Substation (between A–B in **Figure 3.1b**).
- Felling (within the LOD) would be required to clear the site for construction²⁶, as well as for ongoing management of the operational corridor (see Section 3.3).

3.3.1 Limit of Deviation

The s37 application seeks consent for the construction and operation of the Proposed Development based on the tower/pole schedule (**Table 3.1**) with a prescribed horizontal and vertical Limit of Deviation²⁷ LOD, to allow flexibility in the final siting of individual towers to reflect localised land, engineering, and environmental constraints.

Following consent, the investigation of sub-surface and geotechnical conditions at proposed tower locations would be undertaken and may result in the requirement for additional adjustments (micro siting) in the tower locations or heights. Hence, the Proposed Development for the purpose of this EA is based on the Indicative Proposed Alignment and tower/pole schedule (**Table 3.1**) discussed above to allow for flexibility in the final siting of individual towers and access tracks.

The EA has undertaken a worst-case assessment based on the agreed limits of deviation (LOD), as follows:

- The horizontal LOD parameter specified, allows towers to be relocated up to 100 m either side of the proposed alignment. A 50 m LOD applies to proposed access tracks²⁸. The horizontal LOD for towers and access tracks is illustrated in **Figure 3.1b, Volume 3**).

²⁴ Given the proposed replacement tower would result in a height increase of greater than 20% when compared to the existing tower, the works cannot be undertaken subject to The Overhead Lines (Exemptions) (Scotland) Regulations 2013. Accordingly, the proposed replacement tower will be included within the s37 application.

²⁵ The LOD for the proposed new angle tower would not exceed 20% of the existing height. Therefore, these works are exempt from the s37 consent application and would be completed under The Overhead Lines (Exemptions) (Scotland) Regulations 2013. A s37 application would be needed should the tower height exceed 30.84 m.

²⁶ Only the area south west of the existing 132 kV Inveraray to Taynuilt OHL would need to be felled for the Proposed Development construction works as the area to the north east would be felled as part of the proposed Creag Dhubh Substation works (see Annex 2.1 of the Creag Dhubh Substation Environmental Appraisal. Available here :<https://publicaccess.argyll-bute.gov.uk/online-applications/simpleSearchResults.do?action=firstPage>).

²⁷ Limit of Deviation, an area which defines the practical limits within which micro-siting of the OHL infrastructure can occur within the terms of the s37 consent and deemed planning permission which are to be sought. The purpose of Limits of Deviation is to allow flexibility within a s37 consent for the final micro-siting and heights of individual towers to respond to localised ground conditions, topography, engineering, and environmental constraints.

²⁸ This will incorporate a 20 m felling buffer.

- Vertical LOD: The vertical LOD is up to 20% variation of the pole and tower heights provided in the tower/pole schedule (**Table 3.1**).

Table 3.1: Tower/Pole Schedule					
Tower/Pole Type	Easting	Northing	Status	Actual Height(m)	+ 20% LOD (m)
New Angle Tower 35A	208544.5	719092.9	New permanent	28.65	34.38
New Angle Tower 36A	208436.2	719278.8	New permanent	38.35	46.02
New Terminal Tower 36B	208572.8	719269.1	New permanent	31.17	37.40
New Terminal Tower 35B	208621.4	719244.1	New permanent	29.3	35.16
Existing Tower 34	208660.6	718891.7	Existing	28.35	N/A
Existing Tower 37	208292.8	719523.6	Existing	19.81	N/A
Pole 1	208628.89	718936.63	New Temporary	15	18
Pole 2	208547.11	719006.97	New Temporary	12	14.40
Pole 3	208492.54	719100.67	New Temporary	12	14.40
Pole 4	208447.16	719178.56	New Temporary	12	14.40
Pole 5	208395.83	719266.69	New Temporary	12	14.40
Pole 6	208334.68	719371.68	New Temporary	14	16.80
Pole 7	208316.62	719459.29	New Temporary	16	19.20
Pole 8	208298.75	719504.46	New Temporary	9	10.80

3.3.2 Land Take

Permanent Land Take

The Site area is approximately 12.5 ha. Within this area the permanent land take would be limited to the permanent tower infrastructure and the new permanent access tracks (plus 20 m felling buffer).

The Proposed Development would result in the construction of approximately 0.7 km of new permanent track. A minimum running width²⁹ of 3.5 m is required for all access tracks. The total permanent land take area for the new tracks would be approximately 3 ha, including running distance and felling buffer (20 m).

The Proposed Development also includes for the upgrade of 0.5 km of existing forestry track. There are two new passing places proposed within this section of access track, outwith which no widening works are required.

Temporary Land Take

A single circuit temporary diversion (Approx 0.7 km) for the existing 132 kV Inveraray to Taynuilt OHL is required to build the new towers and to Tie-In to the proposed Creag Dhubh Substation. The temporary operation corridor required for the temporary diversion is approximately 2.7 ha. This operational corridor will also capture the pole working areas³⁰ (15 m x 15 m) and the temporary trackways and bog mats.

For the purposes of the EA it has been assumed that individual tower foundations and associated construction activities would require a working area of approximately 6,400 m² (80 m x 80 m) for angle towers and terminal

²⁹ The useable road surface, clear of signs, drains and safety barriers.

³⁰ Approximately 619.1 m² of the pole working areas falls outwith the temporary operational corridor.

towers. The exact dimensions of the working area around each tower would/will be confirmed following micro-siting.

The area of temporary and permanent land take associated with the Proposed Development is presented in **Table 3.1: Summary of Temporary and Permanent Land Take**. The land take areas are illustrated in **Figure 3.2 (Volume 3a)**.

Table 3.1: Summary of Temporary and Permanent Land Take		
Project Construction Element	Temporary (ha)	Permanent (ha)
Tower Platform working areas (80 m x 80 m)	2.6	-
On-site Access Tracks (New) – based on 3.5 m running width	-	0.2
On-site Access Tracks (New), based on 3.5 m running width and including 20 m felling buffer	-	3
Operational corridor (32 m corridor dependent on nature of woodland)	2.7	-
Temporary pole working areas (for temp diversions) – proposed working area of 15 x 15 m	0.2	
Pulling/tensioner working platforms - typical 132 kV has EPZ centre is located 1.5 times the tower height with EPZ zones of 18 m x 36 m. P/T platforms are shown on access track drawings (30 m x 60 m)	0.3	-
Turning head	0.2	-
Total Land Take	4.2 ha*	3 ha

*The total temporary land take is not the sum of the individual elements listed in the table as it accounts for areas of overlap, between project elements (See Figure 3.2, Volume 3a).

The Applicant would also undertake the following works in connection with the Proposed Development. Whilst these works would be undertaken under alternative consenting mechanisms, they have been included for the purpose of the EA. Details of the consenting mechanism and the assessment process for each project element is provided in **Table 3.2**. The associated works include the following:

- Existing Tower 35A, which is 25.7 m tall, would be replaced with an angle tower, extending up to approximately 28.4 m. The increase in height would be within 20% of the existing height. Therefore, the Applicant would undertake these changes under The Overhead Lines (Exemption) (Scotland) Regulations 2013.
- The Proposed Development would use a 1.5 ha temporary laydown area to be developed for the proposed Creag Dhubh Substation (Planning ref: 22/00782/PP); therefore, there would be no new and/ or additional effects associated with this Proposed Development.
- Works associated (including felling) with the construction of the proposed Creag Dhubh Substation, including upgrading the existing culverted watercourse crossing (River Aray), widening of the existing forestry track (approximately 1.9 km between A – B in **Figure 3.1b, Volume 3a**) and felling, where it would also be required for the Proposed Development. These works have been considered as part of the Creag Dhubh Substation (Planning Ref: 22/00782/PP)

- The gantries will be considered as part of the proposed Creag Dhuhb Substation (Planning Ref: 22/00782/PP).

Table 3.2: Consenting Mechanism of all Construction Elements			
Project Elements	Consenting Mechanism	Considered within the EA (Y/N)	Considered within the EA cumulative Assessment
Proposed Development			
Removal of existing section (Approx. 215 m) of the 132 kV Inveraray to Taynuilt OHL, between T35A and T36A.	Application for consent under Section 37 of the Electricity Act 1989, along with a request for a direction that planning permission be deemed to be granted under Section 57 (2) of the Town and Country Planning (Scotland) Act 1997	Y	N
A single circuit temporary diversion (Approx. 743 m) for the existing 132 kV Inveraray to Taynuilt OHL, and with temporary access via bog mats.		Y	N
Installation of two new Terminal Towers (35B and 36B)		Y	N
Replacement of existing Tower 36A ³¹		Y	N
Creation of a new section of overhead line between angle tower 35A and 35B including downleads to substation gantry (Approx. 231 m).		Y	N
Creation of a new section of overhead line between angle tower 36A and 36B, including downleads to substation gantry (Approx. 203 m).		Y	N
Creation of approx. 700 m new permanent access track and upgrades to approx. 495 m of existing access track.		Y	N
Forestry felling		Y	N
Associated Works			
Replacement of existing Tower 35A	Subject of, The Overhead Lines (Exemption) (Scotland) Regulations 2013	Y	N

³¹ The replacement of T 35A is also required for the Proposed Development, however it falls under a separate consenting mechanisms.

Table 3.2: Consenting Mechanism of all Construction Elements			
1.5 ha temporary laydown area	Subject of Permitted Development, under The Town and Country Planning (General Permitted Development) (Scotland) Amendment Order 1992	Y	Y
Works associated (including felling) with the construction of the proposed Creag Dhubh Substation.	Application (Planning Ref: 22/00782/PP) for planning permission under The Town and Country Planning (Scotland) Act 1997	Y	Y
Construction of gantries		N	Y

3.4 Adjacent SSEN Developments

As stated in Section 1.3, the Proposed Development forms part of the wider 'Argyll and Kintyre 275 kV Strategy'. These associated developments are listed below and shown on **Figure 1.2 (Volume 3a)**.

3.4.1 Creag Dhubh Substation

The proposed Creag Dhubh substation is subject to a separate application for planning consent (Planning ref: 22/00782/PP), supported by stand-alone environmental information, and therefore does not form part of the Proposed Development being assessed for the purposes of this EA.

3.4.2 Creag Dhubh to Dalmally 275 kV OHL

The proposed Creag Dhubh to Dalmally OHL is subject to a separate application for consent (Ref: ECU00002199), supported by stand-alone environmental information, and therefore, does not form part of the Proposed Development being assessed for the purposes of this EA.

3.4.3 Inveraray to Creag Dhubh 275 kV OHL

The proposed Inveraray to Creag Dhubh OHL is subject to a separate application for consent (ECU ref: ECU00003442), supported by stand-alone environmental information, and therefore, does not form part of the Proposed Development being assessed for the purposes of this EA.

These associated developments will be considered as part of the cumulative assessment (Section 2.3.3).

3.5 Construction and Access

3.5.1 Construction Works Programme

The construction of the Proposed Development would follow the key stages shown in **Table 3.2** and summarised below. The total construction programme would last approximately 20 months, with the temporary diversion in place for approximately 18 months.

No blasting is anticipated to be required for the Proposed Development. Conductor stringing would be undertaken by hand; helicopters are not assumed to be required.

It is anticipated enabling works would commence in 2023, with the main construction works commencing in 2024 and energisation targeted for 2025.

Table 3.3: Construction Work Programme (approx)

Task	Month																													
	Enabling Works						Construction Works																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1																														
2																														
3																														
4																														
5																														
6																														
7																														
Tasks:																														
1. Site clearance and enabling works (including construction of access tracks , vegetation clearance and tree felling)																	5. Permanent OHL construction and Tie-In to Creag Dhubh Substation/Commissioning;													
2. Temporary Laydown Area Earth works (Permitted Development)																	6. Temporary OHL decommissioning; and													
3. Access Track Works																	7. Reinstatement and landscaping.													
4. Temporary OHL construction and commissioning																														

3.5.2 Phase 1: Enabling Works

Existing Network Diversions

- Construction and operation of a single circuit temporary diversion for the existing 132 kV Inveraray to Taynuilt OHL is required to build the new towers and to Tie-In to the proposed Creag Dhubh Substation. The temporary diversion would have approximately eight wood poles (with a maximum height of 16 m) and is positioned to the south of the existing 132 kV Inveraray to Taynuilt OHL between existing Towers 34 and 37. The temporary diversion is expected to be in place for approximately 18 months. The construction and removal of the wood poles would require temporary trackways and bog mats along the length of the temporary diversion (approximately 743 m long).

Forestry and Vegetation Management:

- Felling of 2.4 ha of woodland area (see **Technical Annex 2.1: Woodland Report, Volume 2**).

Construction of Access Track:

- A new section of permanent access track connecting to the existing access track to the south east of the Proposed Development (approximately 700 m long and minimum 3.5 m wide running surface); and
- Works to upgrade approximately 495 m of the existing access track (Points b – c) which connects to the access track which is to be upgraded as part of the proposed Creag Dhubh substation.

The above sections of access track are illustrated on **Figure 3.1b (Volume 3a)**.

Borrow pits

If borrow pits are required, the Proposed Development may have the opportunity to use any borrow pits that may be utilised as part of the proposed Creag Dhubh to Dalmally 275kV OHL Connection and the proposed Creag Dhubh Substation. This opportunity would be identified by the Principal Contractor, post consent, and they would be responsible for any planning applications.

3.5.3 Phase 2: Tie-In and Temporary Diversion Construction

Tower Foundations

Different approaches to forming foundations may be used, subject to ground conditions at each tower location. These would/ are likely to comprise:

- Pad and column: Prior to construction, a 50 m x 50 m (approximately) compound is established complete with stone access and laydown area for welfare, plant and materials. Each foundation is excavated to a typical depth of 4 m with temporary shoring installed to allow for safe working. On average, dimensions for each foundation are 4 m x 4 m x 0.5 m. Due to restricted working room, no more than two excavations are open at any time. Major items of plant required to construct the foundations include a 20 tonne excavator in order to excavate to formation and place the shoring system. Concrete is supplied via concrete wagon and placed by concrete skip with the excavator.
- Mini Pile and reinforced concrete pile cap: Prior to construction, a stone piling pad will be required, typically 625 m² in areas providing a stable working platform for the piling rig. Major items of plant required to install the piles include a 20 tonne excavator and vibrating roller for the piling pad and a 14 tonne piling rig with a supply of cement and potable water to form the piles. A 20 tonne excavator will then be required to excavate to formation for the construction of the pile cap. Concrete is supplied via concrete wagon and placed by concrete skip with the excavator.

- **Rock Anchor:** Rock anchors are considered if suitable hard rock is encountered up to a depth of 2.5 m and is proven to have sufficient frictional and lateral resistance. Beyond this depth, pad and column foundations are utilised. A similar working area is required to that of micro piling, however in this instance the area is excavated down to rockhead and an access ramp formed with a nominal layer of stone placed to create a level working platform. Major items of plant required to install the anchors include a 20 tonne excavator and vibrating roller for the piling pad and a 14 tonne piling rig with a supply of cement and potable water to form the piles. A 20 tonne excavator will then be required to erect formwork and place concrete for the construction of the pile cap. Concrete is supplied via concrete wagon and placed by concrete skip with the excavator.

Foundation types and designs for each tower would be confirmed following detailed geotechnical investigation at each tower position, although it is currently anticipated that most tower foundations are likely to be of Mini Pile and, pad and column.

Dimensions of each foundation would be confirmed following micro-siting. For the purposes of this assessment, it has been assumed that each foundation would be buried to depths estimated up to 2.5 m below ground level (bgl) and extending up to 4 m depth where ground conditions require. They would extend over an area suitable to deliver the loading characteristics required (which would be a function of the underlying ground conditions and the weight of the structures to be supported). Piled foundations may be required where low strength ground conditions exist, particularly where peat is encountered at over 1 m depth.

For the purposes of the EA, it has been assumed that individual tower foundations and associated construction activities would require a working area of approximately 6,400 m² (80 m x 80 m) for angle and terminal towers. The exact dimensions of the working area around each tower would be confirmed following micro-siting.

Where encountered, top soil (including peat, vegetation, and turves) would be stripped from the tower working area to allow installation of tower erection pad(s) as necessary to accommodate construction plant and stored in accordance with good practice as per the Outline CEMP (**Technical Annex 3.2, Volume 2**) and the SSEN GEMPS (**Technical Annex 3.2, Volume 2**). Concrete would be brought to site ready-mixed with no requirement for concrete batching at individual tower locations. Once the concrete has been cast and set, the excavation would be backfilled, using the original excavated material where possible.

It is anticipated that formation of each tower foundation would take approximately four weeks.

OHL Construction

Tower construction can commence two weeks after the foundations have been cast, subject to weather conditions and concrete curing rates. Tower steelwork would be delivered to each tower construction site either as individual steel members or as prefabricated panels, depending on the method of installation and the available access.

Each tower would be assembled on site into panels by a team of up to eight people. The lower tower panels may be erected using a telehandler, but upper panels would normally be erected into position using an all-terrain crane. Where access is not available for a crane, a derrick would be used. Most towers would be assembled within about five days and erected by crane in one to two days depending on weather conditions and tower type. Large angle or terminal towers, or towers within restricted sites may take longer.

Conductor Stringing

The conductor would be delivered to site on wooden drums in pre-determined pulling section lengths. Typical drum lengths for conductors are up to a maximum 2,400 m (approximate weight of 4 tonnes) but would depend on the specific length of section to be strung.

Prior to stringing the conductors, temporary protection measures, (e.g. netted scaffolds) would be erected

Conductor stringing equipment including winches, tensioners and ancillary equipment would be set out at either end of pre-selected sections of the OHL. Pilot wires would be pulled through the section to be strung. These would be hung in blocks (wheels) at each suspension tower in the section and connected to a winch and tensioner at the respective end of the section. The winch, in conjunction with the tensioner would be used to pull the pilot wires which would be connected to the conductor at the tensioner end. The conductor would be pulled via the pilot wires through the section and under controlled tension to avoid contact with the ground and any under-running obstacles including protection scaffolds. Once the conductor has been strung between the ends of the section it would then be tensioned to provide the necessary sag and then permanently clamped at each tower.

Dependent on terrain or site constraints pilot wires can be pulled through either with the use of all-terrain vehicles, tractors, or helicopters.

Phase 3: OHL Commissioning

The OHL and support towers would then be subject to an inspection and snagging process. This allows the Contractor and SSEN Transmission to check that the works have been built to specification and are fit to energise. The Proposed Development would also go through a commissioning procedure for the switchgear, communications, and protection controls through the proposed substation at Creag Dhubh. The circuits would then be energised.

Phase 4: Reinstatement

Following commissioning of the Proposed Development, all construction sites would be reinstated. Reinstatement would form part of the contract obligations for the Principal Contractor and would include the removal of all temporary access tracks, all work sites around the tower locations and the re-vegetation of all construction compounds. The Principal Contractor would be required to provide a Reinstatement Plan prior to reinstatement works commencing.

3.5.4 Construction Employment and Hours of Work

The Applicant considers it important to act as a responsible developer with regards to the communities which host the construction works. The delivery of a major programme of capital investment provides the opportunity to maximise the support of local communities. Employment of construction staff would be the responsibility of the successful Principal Contractor(s); however, the Applicant encourages the successful Principal Contractor(s) to make use of suitable labour and resources from areas local to the Proposed Development.

It is envisaged that there will be a number of separate teams working at the same time at different locations within the Proposed Development site. The resource levels will be dependent on the final construction sequence and would be determined by the successful Principal Contractor(s).

Construction activities would be undertaken during daytime periods where possible. For weekdays, this would involve work between approximately 07:00 to 19:00 in the summer and 07:30 to 17:00 (or as daylight allows) in the winter. At weekends, the working hours would be approximately 07:00 to 17:00 in the summer and 07:30 to 17:00 (or as daylight allows) in the winter.

Any variation in these working hours would be agreed in advance with Argyll and Bute Council (ABC).

3.5.5 Construction Traffic and Plant

Construction of the Proposed Development would give rise to regular numbers of staff transport movements, with small work crews travelling to work sites. It is anticipated that the Principal Contractor(s) would identify a main compound, with a safe area for parking.

Access to the Proposed Development during construction and operation would be via the A819, which is the main route into Cladich, and the existing site access which connects to the forestry tracks within the Site.

It is anticipated that Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGVs) would access the site on a daily basis throughout the duration of the construction period to deliver materials and construction plant, such as excavators, dump trucks, cranes and deliveries of machinery and scaffolding. Materials would be delivered to the temporary laydown area.

The source of construction materials is unconfirmed at this stage, however, based on the layout of the local road network it is assumed that the construction traffic would approach the Site from both the north and south via the A85 and A83 respectively, to route onto the A819. A small proportion of staff may utilise the B840, however, no HGVs would use this route as it is considered unsuitable.

It is unlikely that construction lighting would be required during summer months. Should lighting be required (e.g. in the winter), these would either be mobile or fixed temporary lighting. Any lighting would be located and directed to avoid impacts to sensitive receptors.

3.5.6 Standard Mitigation and Working Methods during Construction

Outline Construction Environmental Management

The Applicant adopts a consistent approach to the construction of all developments. It is standard practice that, following receipt of approval for development, a Construction and Environmental Management Plan (CEMP) would be prepared by the Applicant's Principal Contractor³². These would be provided as part of a condition to any planning consent and would be based on the Outline CEMP (**Technical Annex 3.2, Volume 2**). The key objective of the CEMP is to ensure that commitments to mitigate environmental impacts that may arise during construction are delivered. Compliance with the CEMP would be required as part of the Principal Contractor's contract terms.

General Environmental Management Plans (GEMPs) have been developed by the Applicant. Details of the relevant GEMPs are provided as part of the Outline CEMP (**Technical Annex 3.2, Volume 2**).

The CEMP would also include project-specific plans developed by the Applicant, including Species Protection Plans (SPPs) as well as the Stage 1 Peat Management Plan (PMP) prepared in accordance with the requirements of the 'Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste', Scottish Renewables and SEPA, Version 1, January 2012. The Outline PMP is provided in **Technical Annex 7.2, Volume 2** and sets out the general principles for the management and reuse of excavated peat as part of the Proposed Development.

3.5.7 Forestry

The new OHL infrastructure and new/ upgraded access track build section would remove existing conifer plantation of variable age class and growth rates. The total area of felling required for the Site and the access tracks is 2.4 ha. As discussed in **Technical Annex 2.1: Woodland Report, Volume 2**, the removal of the 1.59

³² In this instance, separate CEMPs would be prepared by both the Principal Forestry Contractor and the Principal Construction Contractor.

ha of semi-mature conifer woodland and 0.8 ha of young conifer woodland to accommodate the temporary diversion.

During the construction works for the Proposed Development a level of disruption would be created for the undertaking of routine forestry management activities on the woodland property. This would be project managed through communication and agreement with the affected stakeholders and through the implementation of the CEMP and Forestry Management Plan (FMP). An Outline CEMP is provided in **Technical Annex 3.2 (Volume 2)**.

In accordance with the Scottish Government's Control of Woodland Removal Policy³³ of no net loss of woodland, 2.4 ha compensatory planting would be provided for the Proposed Development. This would be provided both on-site and off-site and would be implemented prior to the completion of the Proposed Development in accordance with the Compensatory Planting document submitted as a standalone document to accompany this application.

Refer to **Technical Annex 2.1 (Volume 2)**, for further information on woodland management during the construction and operation of the Proposed Development, including risks from windthrow and measures to ensure there is no net loss of woodland.

3.5.8 Watercourse Crossings

Works associated with the construction of the proposed Creag Dhubh Substation, including upgrading the existing culverted watercourse crossing (River Aray) would also be required for the Proposed Development. These works have been considered as part of the Creag Dhubh Substation (Planning Ref: 22/00782/PP).

The watercourse crossing would be designed and constructed to comply with legislation set out in The Water Environment (Controlled Activities) (Scotland) Regulations 2011, as amended, and CIRIA guidance. These measures would be carried out in line with the Outline CEMP (**Technical Annex 3.2, Volume 2**). In order to avoid increases in flood risk, the culvert must be designed to accommodate the peak flows predicted during an event with a 1 in 200 (0.5%) annual probability, also taking account of potential climate change.

Hydrological modelling undertaken has determined the culvert must be designed to accommodate peak flows of 10.32 m³/s for this event, in accordance with SEPA guidance for Argyll³⁴. Accordingly, a box culvert at least 2 m wide by 1.8 m high is proposed, which would provide continuity of the riverbed habitat. A mammal ledge would also be implemented just above peak flow height.

3.6 Operational Phase

3.6.1 Life of the Proposed Development

The Proposed Development would not have a fixed operational life. It is anticipated that the Proposed Development would be operational for 50 years or more.

3.6.2 Operation and Maintenance Programme

In general, given the nature of the Proposed Development, there would be a negligible or no demand for energy, materials, or natural resources during the operational life of the OHL. OHLs require very little maintenance.

Regular inspections would be undertaken to identify any unacceptable deterioration of components, so that they can be replaced. From time to time, inclement weather, storms, or lightning can cause damage to either the

³³ <https://forestry.gov.scot/publications/285-the-scottish-government-s-policy-on-control-of-woodland-removal/viewdocument/285>

³⁴ SEPA (2019) Climate Change Allowances for Flood Risk Assessment in Land Use Planning.

insulators or the conductors. If conductors are damaged, short sections may have to be replaced. Insulators and conductors are normally replaced after about 40 years, and towers painted every 15-20 years.

3.6.3 Waste Management

Waste generated during routine operations and maintenance would not be stored on-site and would be removed at the time by SSSEN Transmission staff/ contractors, under the appropriate waste carrier's licence.

3.6.4 Emissions to Air/ Land / Water

Routine emissions to land, air and water are not anticipated.

3.6.5 Operational Noise

In respect of operational noise, the Proposed Development would result in the replacement of and alterations to the existing OHL and accordingly no new impacts would arise. In this regard, there would be no in-combination impacts from the Proposed Development with the proposed Creag Dhubh to Dalmally 275 kV OHL Connection and proposed Creag Dhubh Substation.

Furthermore, operational noise impacts would be predicted as negligible due to the distance of NSRs (refer to **Table 2.1**).

3.7 Decommissioning Phase

Life of the Project

The Proposed Development would not have a fixed operational life. It is assumed that the Proposed Development would be operational for 50 years or more. The effects associated with the construction phase can be considered representative of worst-case decommissioning effects, and therefore no separate assessment is proposed as part of this EA.

3.8 Design and Alternatives

The Proposed Development is restricted in location to the existing Inveraray to Taynuilt 132kV OHL and the proposed Creag Dhubh Substation, as it is necessary to connect the existing 132kV OHL to the proposed Creag Dhubh Substation, to ensure security of electricity supply. Considering the design restrictions and the small scale of the works, no alternative options were considered. However, the Proposed Development has been designed with cognisance to feedback received from adjacent developments (Section 1.3).

Given the Proposed Development is required to connect the proposed Creag Dhubh Substation to the existing 132 kV Inveraray to Taynuilt Overhead Line (OHL), enabling the Applicant to discharge their duties under Schedule 9 of the Electricity Act 1989, the 'Do-Nothing' scenario was not considered an option.