

Environmental Impact Assessment

Scoping Report

Creag Dhubh to Inveraray 275 kV Overhead Line (LT000194)

March 2022



<p>Applies to</p> <p>Scottish and Southern Energy Networks (SSEN) Transmission</p>	<p>Scottish and Southern Energy Networks (SSEN) Transmission Environmental Impact Assessment Templates-Scoping Request</p>	<p>Document Reference</p> <p>TBC</p>
<p>Classification</p> <p>Internal</p>	<p>Uncontrolled if Printed</p>	<p>Revision</p>

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QUALITY MANAGEMENT

Issue/Revision	1	2	3	4
Date	10/02/2022	01/03/2022		
Remarks	For Client Review	Final for issue		
Prepared by	CC	CC		
Checked by	PB	PB		
Authorised by	SCR	SCR		
Project number	LT194	LT194		
Report number				
File reference				

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GLOSSARY AND ABBREVIATIONS

275 kV	275 kilo-volt capacity of an electricity power line.
Alignment	The centre line of an overhead line route, along with the location of key angle structures.
Ancient Woodland	Ancient Woodland is defined as land that is currently wooded and has been continually wooded, at least since 1750.
AOD	Above Ordnance Datum
ABC	Argyll and Bute Council – the Planning Authority
APQ	Areas of Panoramic Quality
BGS	British Geological Survey
Consultation	The dynamic process of dialogue between individuals or groups, based on a genuine exchange of views and, normally, with the objective of influencing decisions, policies or programmes of action.
ECU	Energy Consents Unit, the department of the Scottish Government responsible for processing applications for consent under the Electricity Act 1989 on behalf of Scottish Ministers
EIA	Environmental Impact Assessment. A formal process codified by EU directive 2011/92/EU, and subsequently amended by Directive 2014/52/EU. The national regulations are set out in <i>The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017</i> as amended. The EIA process is set out in regulation 4(1) of the regulations and includes the preparation of an EIA Report by the developer to systematically identify, predict, assess and report on the likely significant environmental impacts of a proposed project or development.
GDL	Gardens and Designed Landscapes are defined within Historic Scotland Inventory of Designed Landscapes in Scotland (2012) as “grounds that are consciously laid out for artistic effect”.
GDWTE	Groundwater Dependent Terrestrial Ecosystem
HES	Historic Environment Scotland
HGV	Heavy Goods Vehicle
Kilovolt (kV)	One thousand volts
LCT	Landscape Character Type exhibiting distinctive pattern of elements and features.
LOD	Limits 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 which is to be sought. The purpose of Limits of Deviation is to allow flexibility within a s37 consent for the final micro-siting of individual towers to respond to localised ground conditions, topography, engineering, and environmental constraints.
Mitigation	Term used to indicate avoidance, remediation, or alleviation of adverse impacts.
NatureScot (NS)	Formerly known as Scottish Natural Heritage, is the public body responsible for Scotland's natural heritage, especially its natural, genetic and scenic diversity. It advises the Scottish Government and acts as a government agent in the delivery of conservation designations, i.e. national nature reserves, local nature reserves, national parks, Sites of Special

275 kV	275 kilo-volt capacity of an electricity power line.
	Scientific Interest (SSSIs), Special Areas of Conservation, Special Protection Areas and the national scenic areas.
NETS SQSS	National Electricity Transmission System Security and Quality of Supply
Overhead Line (OHL)	An electric line installed above ground, usually supported by lattice steel towers or poles.
Planning application	An application for planning permission under the Town and Country Planning (Scotland) Act 1997, as amended by the Planning etc. (Scotland) Act 2006. It should be noted that consent under section 37 of the Electricity Act 1989 usually carries with it deemed planning permission from the Scottish Ministers under Section 57 of the Town and Country Planning (Scotland) Act 1997.
Proposed OHL	The proposed new 275 kV overhead transmission line between a proposed new substation at Creag Dhubh, and a connection point on the Inveraray – Crossaig circuit.
Preferred Route	The Route Option which is considered to represent the optimum balance between the various environmental considerations
Proposed Development	The Proposed Development is taken to be the description of: the location of the development; the physical characteristics of the OHL, based on the Proposed Route. The Proposed Development also comprises a description of the main characteristics of the operational development and an estimate of residues and emissions associated with both the construction and operational phases (as set out in Schedule 4 of the EIA regulations).
Proposed Route	The final route taken forward following stakeholder consultation within which alternative OHL route alignments will be defined and appraised.
SAC	Special Area of Conservation - designated under Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (known as - The Habitats Directive)
Section 37 (s37) application	An application for development consent under section 37 of the Electricity Act 1989
SAM	Scheduled Ancient Monument - monuments of national importance which have been afforded legal protection under the Ancient Monuments and Archaeological Areas Act 1979
SEPA	Scottish Environment Protection Agency
SPA	Special Protection Area – designated under Directive 2009/147/EC on the conservation of wild birds (the Birds Directive)
SSEN Transmission	Scottish and Southern Energy Networks Transmission
SSSI	Site of Special Scientific Interest – designated by SNH under the Nature Conservation (Scotland) Act 2004
Stakeholders	Organisations and individuals who can affect or are affected by SSEN Transmission works.
Study Area	The Study Area for identification of Route Options was developed with reference to the location of the proposed Creag Dhubh substation and the Inveraray – Crossaig circuit
Visual Receptors	Visual receptors are individuals or defined groups of people whose visual amenity or viewing experience may be affected by development.

275 kV	275 kilo-volt capacity of an electricity power line.
VP	Vantage Point
Volts	The international unit of electric potential and electromotive force.
Wild Land Areas (WLA)	Those areas comprising the greatest and most extensive areas of wild characteristics within Scotland, as classified by SNH (2014).
ZTV	Zone of Theoretical Visibility - the theoretical visibility of a Proposed Development based on the terrain of the surrounding area.

EXECUTIVE SUMMARY

In order to meet license obligations relating to security of supply Scottish and Southern Electricity Networks Transmission (SSEN Transmission) need to provide a new 275 kV double circuit OHL supported by lattice steel towers, between a proposed new substation at Creag Dhubh, and a connection point on the recently constructed Inveraray – Crossaig circuit, a Route of between 8 and 12 km (the 'Proposed Development'). The Proposed Development is needed to support the upgrade and reinforcement of the electricity transmission network, ensure supply on the Argyll peninsula and provide access to the grid for renewable energy generation projects in accordance with the National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS).

This Scoping Report is provided to support a formal request under Regulation 12 of the Environmental Impact Assessment (EIA) Regulations by the Applicant for a Scoping Opinion to determine the information to be provided within the EIA Report.

The proposed scope of the EIA is summarised in Table 1 below, noting that the final scope will be agreed following the receipt of a Scoping Opinion from the Scottish Ministers.

Table 1: Issues Scoped In and Out

Topic	Scoped In	Scoped Out
Landscape Character and Visual Impact	✓	<ul style="list-style-type: none"> (LCT37) Upland Glens - Argyll; and The Ardinglas and Strone GDL.
Cultural Heritage	✓	<ul style="list-style-type: none"> Battlefields; and World Heritage Sites.
Ecology	✓	<ul style="list-style-type: none"> Statutory designated sites within 10 km of the Site where there is no connectivity.
Ornithology	✓	<ul style="list-style-type: none"> Barrier effects; Electrocution; Habitat loss (during both construction and operational phases); and Potential disturbance during the operational phase.
Geology and Soil	✓	<ul style="list-style-type: none"> Contaminated Land; and Operational impacts.
Water Environment	✓	✗
Traffic and Transport	✓	<ul style="list-style-type: none"> Operational impacts; and Where the thresholds for significant effects during the construction phase are not met in a specific location (in accordance with IEMA Guidelines) it is proposed that further assessment is not required.
Noise and Vibration	✓	<ul style="list-style-type: none"> Construction noise and vibration.
Land Use and Agriculture	✗	✓
Forestry	✓	✗
Socioeconomic, Recreation and Tourism	✗	✓
Population and Human Health	✗	✓
Climate Change	✗	✓

Topic	Scoped In	Scoped Out
Air Quality	x	✓
Major Accidents and Disasters	x	✓

1. INTRODUCTION

1.1 The Proposal

Scottish and Southern Energy Networks Transmission (SSEN Transmission) is proposing to submit an application for consent to construct and operate a new 275 kV double circuit OHL supported by lattice steel towers, between a proposed new substation at Creag Dhubh, and a connection point on the recently constructed Inveraray – Crossaig circuit, a Route of between 8 and 12 km (the 'Proposed Development'). The location of the Proposed Development is shown in **Figure 1.1**.

The scope of this application is limited to construction and operation of the OHL. The Proposed Development would not have a fixed operational life. It is assumed that the Proposed Development will be operational for 50 years or more. The effects associated with the construction phase can be considered to be representative of worst case decommissioning effects, and therefore no separate assessment is proposed as part of the Environmental Impact Assessment Report (EIA Report).

The Proposed Development is part of a wider scope of works to upgrade the transmission network in eastern Argyll. Further detail on the wider works is provided in **Section 2.2** of this Scoping Report.

1.2 The Regulations

An application for consent for the Proposed Development will be made to the Scottish Ministers under section 37 of the Electricity Act 1989¹, 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 as amended. The Proposed Development is categorised as 'Schedule 2' development under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017³ (the EIA regulations), however rather than seeking a Screening Opinion, SSEN Transmission are proposing to submit an EIA Report to support application for consent.

1.3 Sustainability Strategy

A key part of SSEN Transmission's Sustainability Strategy⁴ is to achieve Biodiversity Net Gain (BNG)⁵ as part of project delivery. As such, the ambition is to ensure that activities not only maintain the existing balance that exists but enhance the biodiversity in our area.

For new infrastructure projects, SSEN Transmission propose to:

- Ensure natural environment considerations are included in decision making at each stage of a project's development;
- Utilise the mitigation hierarchy to avoid impacts by consideration of biodiversity in project design;
- Positively contribute to the United Nations (UN) and Scottish Government Biodiversity strategies by achieving an overall 'No Net Loss' on new infrastructure projects gaining consent in 2020 onwards and achieving Net Gain on projects gaining consent in 2025 onwards; and
- Work with our supply chain to gain the maximum benefit during asset replacement and upgrades.

BNG is a key consideration throughout project development and is discussed further in **Chapter 6: Ecology**.

¹ The Electricity Act 1989, c29.

² Town and Country Planning (Scotland) Act 1997, c8.

³ The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, No.101.

⁴ SSEN. May 2018. Delivering a smart, sustainable energy future. The Scottish Hydro Electric Transmission Sustainability Strategy. <https://www.ssen-transmission.co.uk/media/2701/sustainability-strategy.pdf> [Accessed February 2022]

⁵ SSEN. December 2019. A network for net zero. Our approach to implementing biodiversity net gain. <https://www.ssen-transmission.co.uk/media/3723/our-approach-to-implementing-biodiversity-net-gain.pdf> [Accessed February 2022]

1.4 Purpose of the EIA Scoping Report

The purpose of this EIA Scoping Report is to ensure that the subsequent EIA is focused on the key impacts likely to give rise to significant effects. As well as identifying aspects to be considered in the EIA, this document also identifies those aspects that are not considered necessary to assess further.

This Scoping Report, prepared by Ramboll UK Limited on behalf of the Applicant, is provided in support of a request by the Applicant to the Scottish Ministers for a Scoping Opinion under Regulation 12⁶ of the EIA Regulations.

In accordance with the EIA Regulations, this EIA Scoping Report contains:

- A plan sufficient to identify the Site which is the subject of the Proposed Development;
- A brief description of the nature and purpose of the Proposed Development and its possible effects on the environment; and
- Additional supporting information or representations.

The Applicant invites consultees to comment on the following:

- What environmental information do you hold or are aware of that will assist in the EIA described here?
- Do you agree with the proposed approach for baseline collection, prediction and significance assessment?
- Are there any key issues or possible effects which have been omitted?
- Do you agree with the list of issues to be scoped out, and the rationale behind the decision?

1.5 Consideration of Relevant Factors in the EIA Scoping Report

This Scoping Report is structured to provide information on the individual factors which require consideration under the EIA regulations. The Scoping Report presents the findings of an initial appraisal of the likely environmental effects of the Proposed Development on the receiving environment, based on the current understanding of the baseline conditions. The Scoping Report identifies the potential for likely significant effects with reference to: the current understanding of baseline sensitivity; the proposed approach to further baseline data collection (where required); issues that can be scoped out from further assessment; issues that require further assessment on basis of potential for significant effect; and the methodology proposed for the assessment of significant environmental effects in each case.

The EIA regulations require the EIA Report identify, describe and assess the likely significant effect on the factors specified in Regulation 4(3)⁷ and the interaction between those factors. **Table 1.1** lists the factors and outlines how this EIA Scoping Report addresses each, including how the report describes the potential interactions between the factors.

Table 1.1: Consideration of factors in the EIA Scoping Report

Regulation 4 (3) Factor	How this is addressed in the Scoping Report
Landscape	Chapter 4: Landscape and Visual incorporates a consideration of potential for likely significant effects designated landscape areas, landscape character and visual receptors.
Cultural Heritage	Chapter 5: Cultural Heritage and Archaeology incorporates a consideration of potential for likely significant effects on cultural heritage and archaeology assets as well as the cultural setting.
Biodiversity	Chapter 6: Ecology incorporates a consideration of potential for likely significant effects on terrestrial habitats, protected mammals, reptiles and amphibians, aquatic ecology. Chapter 7: Ornithology incorporates a consideration of potential for likely significant effects on ornithology

⁶ Regulation 12 – Request for Scoping Opinions. <https://www.legislation.gov.uk/ssi/2017/101/regulation/12/made> [Accessed February 2022]

⁷ Regulation 4 – Environmental Impact Assessment <https://www.legislation.gov.uk/ssi/2017/101/regulation/4/made> [Accessed February 2022]

Regulation 4 (3) Factor	How this is addressed in the Scoping Report
Soil	Chapter 8: Geology and Soils incorporates a consideration of potential for likely significant effects on soils including peatland habitat.
Water	Chapter 9: Water Environment incorporates a consideration of potential for likely significant effects on the water environment including hydrology, hydrogeology and groundwater dependent terrestrial ecosystems (GWDTE).
Material Assets	Chapter 10: Traffic and Transport incorporates a consideration of the potential for likely significant effects on transport. Chapter 13: Socioeconomic, Recreation and Tourism incorporates a consideration of potential for likely significant effects on socioeconomic, recreation and tourism.
Land	Chapter 12: Land use incorporates a consideration of potential for likely significant effects on land use including agriculture and commercial forestry.
Population and Human Health	Chapter 14: Population and Human Health incorporates a consideration of potential for likely significant effects on community health and wellbeing in relation to <ul style="list-style-type: none"> • perceived health effects related to electromagnetic fields (EMF); and • potential for impact resulting from major accidents or disasters (considered to be limited to impacts from towers being destabilised). Chapter 11: Noise and Vibration incorporates a consideration of potential for likely significant effects associated with noise and vibration.
Air and Climate	Chapter 15: Air and Climate incorporates a consideration of potential for likely significant effects on air quality and the carbon footprint of the Proposed Development.

A detailed overview of the guidance and methodology adopted for each technical study is provided within the respective technical chapters of this EIA Scoping Report (**Chapters 4-15**). All figures are located in **Appendix A**.

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Description of Development

The following description is provided to inform the request for a Scoping Opinion from Scottish Ministers. The EIA Report will provide a comprehensive description of the Proposed Development, in accordance with Schedule 4 of the EIA Regulations, for the purposes of describing the likely significant effects and for the purpose of defining the Proposed Development for the application for consent.

A route selection exercise was completed in accordance with SSEN Transmission guidance, identifying an 'Original Proposed Route' (Route D/E), between the proposed new substation at Creag Dhubh, and a connection point on the recently constructed Inveraray-Crossaig circuit in Argyll, Scotland. The 'Original Proposed Route' is shown in **Figure 2.1** and was consulted on in June-July 2021.

Following this consultation SSEN Transmission were made aware of a significant unexploded ordinance (UXO) issue on the Ladyfield Plantation by the landowner and engaged with the MOD to gather information. SSEN Transmission also engaged with a specialist UXO contractor to provide a detailed proposal and budget to manage the UXO hazard across the Original Proposed Route.

Ladyfield Plantation and the surrounding area was requisitioned by the military during World War Two (WWII) and heavily used for live firing practice. The proposal to mitigate and remove the UXO risk ahead of SSEN Transmission works were drawn up using desk based research and trial surveys. The area that was required to be made safe comprised a 3 km stretch of the Original Proposed Route, running through Ladyfield Forest, as SSEN Transmission require an 80 m-wide corridor (approximately 24 ha), in addition to approximately 2.4 ha for access tracks.

Significant quantities of UXO have been discovered at Ladyfield Plantation and only a small area of the forest has been cleared and possibly not to the standard that SSEN Transmission would require. UXO are likely to be present both in open areas and within forested areas including beneath tree roots bowls, as the trees were planted post military use of the Site.

The UXO Contractor's proposal outlined:

- Based on the minimum tree clearance and an estimate tree density that clearance would take a minimum of 260 days and could increase the cost to deliver the scheme by roughly 50%;
- The point at which SSEN Transmission would know the extent of UXO presence in heavily wooded areas would be after consent had been gained in mid/late 2023 as SSEN Transmission are not able to begin felling operations until consent has been received and commencement requirements discharged. This could potentially result in identifying that the prevalence of UXO is much higher than previously estimated and could potentially delay completion by years; and
- Even factoring in the 260 days for clearance there is not sufficient time to achieve the April 2026 completion date from the point of receiving Section 37 consent.

The time required would cause significant delay to the project programme and the Argyll 275 kV Strategy (approximately one year delay). The cost of UXO clearance and particularly the tree stump removal, is considerable and far in excess of the cost of changing the Original Proposed Route. There is also a risk of further delay if a higher number of UXO are found than estimated. The route was therefore moved to the west of the A819 (the Proposed Route, **Figure 2.1**) and an alignment selection exercise is underway in accordance with SSEN Transmission guidance.

The Proposed Development would comprise the construction of between 8-12 km of new 275 kV capable OHL from the proposed Creag Dhubh substation to a connection point on the recently constructed Inveraray – Crossaig circuit, the Proposed Route is shown on **Figure 1.1**. The Proposed Development will replace a section of the existing aged 132 kV OHL asset which will be dismantled and removed as part of the project works.

As part of the Proposed Development temporary diversions will be required for a period of over six months:

- An OHL / and or Underground Cable (UGC) temporary diversion to allow the safe stringing of the Proposed Development at the point it intersect with the existing 132 kV OHL.; and
- A 275 kV temporary diversion to facilitate the connection on recently constructed Inveraray – Crossaig circuit.

Once the Creag Dhubh to Inveraray line is operating at 275 kV these temporary diversions will be removed.

The Proposed Development outlined above and subject to this Scoping Opinion request is currently in the Alignment stage of development and Scoping has been undertaken on the Proposed Route.

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

2.2 Purpose of Proposed Development

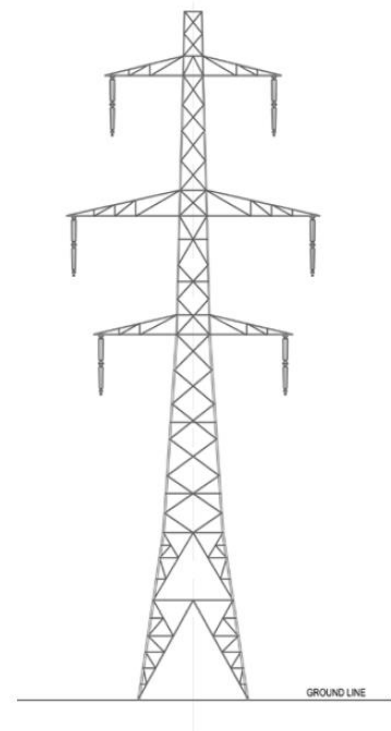
SSEN Transmission owns and operates the electricity transmission network infrastructure in the north of Scotland. As part of its Electricity Transmission Licence, it has a number of obligations, including:

- the development and maintenance of an efficient, coordinated and economical system of electricity transmission;
- facilitating competition in the supply and generation of electricity; and,
- ensuring that the security of the network is maintained as the demand and/or generation connections change over time.

These licence obligations mean that SSEN Transmission must endeavour to connect generation to the network, and should do so in an efficient, coordinated and economic way. An increase in renewable generation applying to connect to the Argyll and Kintyre network is the primary driver behind a need to reinforce this regional network. The level of generation applying to connect in the Argyll and Kintyre area has continued to increase, particularly within the past 12 months. Power system studies undertaken to assess the impact of this new generation shows that the capability of the existing network would be exceeded. Therefore, reinforcement is needed to maintain compliance with the standards that we need to plan our network against. Individual projects, like the Creag Dhubh to Inveraray 275 kV OHL are being progressed to provide this additional capacity for new generation connections.

2.3 Indicative Overhead Line Design

The Proposed Route (shown in **Figure 1.1**) would accommodate an OHL with self-supporting fabricated galvanised steel lattice towers (**Plate 2.1** below). Each tower would carry two circuits, with three horizontal cross arms on each side of the tower, each carrying an insulator string and two conductors. An earth wire, containing an optical fibre ground wire (OPGW), would be strung between the tower peaks. The spacing between towers would vary depending on topography, altitude, and land use. An investigation of sub-surface and geotechnical conditions at proposed tower locations would be undertaken at a later stage. The typical span distance between towers would be between 300 m to 350 m. Permanent access tracks are likely to be required to any angle and terminal tower locations, with temporary access tracks used to access all other towers. At this stage, it has been assumed that towers would be a maximum of 60 m above ground level, with a typical average tower height of 50 m above ground level. It is not within the scope of this study to compare overhead line with underground cable options.



Proposed L8 (c)
Tower Suite

Plate 2.1: Transmission Tower Design

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. It is proposed that the Application for consent (and the EIA Report) will be based on a proposed alignment and detailed tower schedule, subject to agreed horizontal limits of deviation (LOD) to allow for flexibility in the final siting of individual towers and access tracks, up to 100 m.

It is proposed that the EIA Report provides an assessment of the likely significant environmental effects based on a proposed tower schedule and access track locations. The application of the LOD would be limited to the variation of tower and access track details that do not result in adverse change to the level of significance of effects on the environment as detailed in the EIA Report. Any utilisation of the LOD would be evaluated against the level of significance of effects reported in the EIA Report. Should the evaluation identify an adverse change

to the level of significance identified in the EIA Report, consultation would be carried out with Argyll and Bute Council (and any relevant statutory consultees) for approval of the proposed change.

2.4 OHL Construction

High voltage OHL construction typically follows a standard sequence of events as follows:

- Phase 1 – enabling works;
- Phase 2 – OHL construction;
- Phase 3 - OHL commissioning; and
- Phase 4 – re-instatement.

Further detail on typical construction activities and work methods will be set out in the EIA Report. An outline of the likely programme, phasing and working methods is provided below for the purpose of informing the initial scoping stage environmental assessment.

2.4.1 Construction Programme

It is anticipated that construction would commence in 2024 (subject to consents and approvals being granted). A provisional construction period of 18 months in total is anticipated, with energisation of the project scheduled for 2026.

The detailed construction phasing and programme would be subject to change as the design progresses and also due to necessary consents and wayleaves being agreed. Further information will be provided in the EIA Report on the indicative construction programme.

2.4.2 Construction Practices and Phasing

Construction Environmental Management Plan

A Construction Environmental Management Plan (CEMP) will be prepared to ensure that all construction activities are undertaken as per SSEN Transmission's standard practices, which will include reference to applicable General Environmental Management Plans (GEMPs) and Species Protection Plans (SPPs).

Phase-1 - Enabling Works

Road Improvements and Access

Detailed access proposals will be developed by the Principal Contractor (yet to be appointed). In general, based on desk study analysis and preliminary walkover inspections, access will be established through a combination of:

- upgrade to existing tracks;
- installation of temporary new stone tracks;
- Installation of permanent / temporary floating stone tracks; and
- Installation of permanent new stone tracks.

It is anticipated that permanent access will be required in the form of stone access tracks for all angle towers on the Proposed Development. Where possible, existing tracks will be used or upgraded for use. In other locations (e.g., to access section towers), it is anticipated that new temporary tracks would be installed. Floating stone road or trackway panel construction may be installed in sensitive areas such as over peat, depending on the sensitivity of constraints identified and the engineering feasibility of installing this type of track.

Vegetation Management and Forestry Clearance

The Proposed Development navigates areas of commercial forestry and broadleaved woodland; and in these areas an Operational Corridor would be required. The width of this corridor would be variable depending on the nature of the woodland, however for the purposes of EIA scoping, it is assumed that an average corridor of 80 m would be required (40 m either side of the tower centre line). The width of the Operational Corridor is dependent on the mature growth height of trees and topography adjacent to the OHL. In addition, minor vegetation management and felling may be required around the existing access track network to provide sufficient width. A detailed Tree Felling Plan, identifying the specific areas to be felled to create an Operational Corridor, will be provided with the EIA Report, as well as the Scottish Woodland Report (2021)⁸ that sets out the methodology that will be followed to limit the removal of Ancient and Native Woodland.

Site Compounds

It is anticipated that a single main construction compound will be required, the location of which will be confirmed by the Principal Contractor. Temporary construction compound locations may be required along the Operational Corridor, the location of which will be determined through ongoing design works.

Phase 2 – OHL Construction

Tower Foundations

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

- spread type e.g., concrete pad and chimney;
- rock anchor; or
- piled type e.g., driven concrete, tube, and micro pile; or augered.

Foundation types and designs for each tower will be confirmed following detailed geotechnical investigation at each tower position, although it is currently anticipated that most tower foundations are likely to be of a concrete pad and chimney type.

Dimensions of each foundation will be confirmed following micro-siting. For the purposes of this assessment however it has been assumed that each foundation would be buried to depths estimated up to 2.5 m below ground level (bgl) although 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 EIA it will be assumed that individual tower foundations and associated construction activities will require a working area of approximately 2500 m² (50 m x 50 m) around each individual suspension tower location and a working area of approximately 6400 m² (80 m x 80 m) around each individual tension tower. The exact dimensions of the working area around each tower will be confirmed following micro-siting.

Where encountered, top soil (including peat) will be stripped from the tower working area to allow installation of tower erection pad(s) as necessary to accommodate construction plant. Concrete is likely to 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 will be backfilled, using the original excavated material where possible.

It is anticipated that formation of each tower foundation will 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

⁸ Scottish Woodlands, 2021. LT29 Overhead Line Route Woodland Review Short Report. March 2021.

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 each 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 across public roads and existing access tracks.

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 will 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 will also go through a commissioning procedure for the switchgear, communications, and protection controls through the substation at Creag Dhubh. The circuits will then be energised.

Phase-4 – Reinstatement

Following commissioning of the Proposed Development, all construction sites will be reinstated. Reinstatement will form part of the contract obligations for the Principal Contractor and will include the removal of all temporary access tracks, all work sites around the tower locations and the re-vegetation of all construction compounds.

2.5 Construction Employment and Hours of Work

SSEN Transmission takes community responsibilities seriously. The delivery of a major programme of capital investment provides the opportunity to maximise support of local communities.

Employment of construction staff will be the responsibility of the Principal Contractor but SSEN Transmission encourages the Principal Contractor to make use of suitable labour and resources from areas local to the project.

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

Construction working is likely to be during daytime periods only. Working hours are currently anticipated between approximately 07:00 to 19:00 in summer and 07:30 to 17:00 (or within daylight hours) in winter Monday to Saturday. Any out of hours working would be agreed in advance with Argyll and Bute Council (ABC).

2.6 Construction Traffic

The construction will give rise to regular numbers of staff transport movements, with small work crews travelling to work site areas. It is anticipated that the Principal Contractor will identify a single main construction compound area, with a safe area for parking away from the public highway.

Vehicle movements will be required to construct new or upgraded access roads; deliver the foundation and tower components and conductor materials to site; deliver and collect materials and construction plant from the main site compound and to individual tower locations.

The EIA Report will provide a summary of the total anticipated traffic movements associated with construction of the Proposed Development, broken down by phases.

2.7 Operation and Management of the Transmission Connection

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 are 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 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.

2.7.1 Managed Operational Corridor

In addition to the removal of vegetation to facilitate construction it is necessary to create safe corridors for operation. The typical operational corridor required within areas of commercial forestry is 80 m. The Operational Corridor is defined with reference to the distance at which a tree could fall and cause damage to the overhead line, resulting in a supply outage⁹. As a result, the final corridor width would be based on the safety distance required to allow for a mature tree falling towards the OHL at the mid-point on a span between two towers, taking account of topography and tree height at maturity. On the basis that SSEN Transmission will provide compensatory planting in accordance with the Scottish Government's Control of Woodland Removal Policy (CoWRP)¹⁰ for all permanent woodland removal required to create the operational corridor, there would be no likely significant effect on the productive conifer plantation forest resource.

2.8 Use of Natural Resources

The EIA Regulations require the consideration of the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources. The Proposed Development will use land and the permanent footprint of the Proposed Development will be described in the EIA Report. Other than the change of land use, given the nature of the Proposed Development, there would be a negligible or no demand for natural resources during the operational life of the OHL and therefore no likely significant effect on the sustainable availability of such resources.

⁹ As specified by the 'red zone' set out in paragraph 39 of the Forest Industry Safety Accord (2013) Electricity at work: Forestry, FISA Safety Guide 804: <https://www.ukfisa.com/assets/files/safetyLibrary/FISA%20804%20-%20Electricity.pdf> [Accessed March 2018]

¹⁰ Forestry Commission Scotland. (2009) The Scottish Government's Policy on Control of Woodland Removal. Edinburgh

2.9 Residues and Emissions

The EIA Regulations require that the EIA Report provides an estimate, by type and quantity, of expected residues and emissions (such as water, air and soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced) resulting from the construction and operation of the Proposed Development.

Table 2.1 provides a summary of the anticipated residues and emissions for the purpose of informing the scope of the EIA. Table 2.1: Residues and Emissions

Topic	Potential residue/emission
Water	<p>Construction:</p> <p>Surface water runoff and discharge is likely during construction. In addition, occasional discharges may arise from pumping, or over-pumping in order to dewater foundation excavations. Pollution sources may arise as a result of soil erosion or from oil/ fuel or chemical storage and use.</p> <p>Operation:</p> <p>No water emissions or pollution sources have been identified for the operational phase.</p>
Air	<p>Construction:</p> <p>The construction phase would require the transport of people and materials by road and air, with associated emissions to the atmosphere. There are no air quality management areas within the vicinity of the Proposed Development. No significant air emissions are anticipated.</p> <p>Operation:</p> <p>Due to the nature of the Proposed Development no significant point source or diffuse air emissions would be produced during its operation.</p> <p>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.</p>
Soil and subsoil	<p>Construction:</p> <p>Soil and subsoil excavation, handling and storage would be required during construction. All soil and subsoil would be stored temporarily for use in reinstatement</p> <p>Operation:</p> <p>No requirement for soil or subsoil excavation or handling during the operation phase has been identified. No pollution sources have been identified for the operational phase.</p>
Noise and Vibration	<p>Construction:</p> <p>Noise sources during the construction phase would include increased traffic flows and noise from construction plant. Further detail is provided in Chapter 11.</p> <p>There would be no significant vibration emissions associated with the Proposed Development.</p> <p>Operation:</p> <p>Noise emission levels from a 275 kV OHL are unlikely to be perceptible during dry weather, however perceptible noise can arise in wet weather. Further detail on the proposed scope of operational noise assessment is provided in Chapter 11.</p>
Light	<p>Construction:</p> <p>The temporary construction compounds are likely to be equipped with lighting installations for use during low light conditions and passive infra-red sensor controlled security lighting. Any effect would be temporary and not expected to be significant.</p> <p>Operation:</p> <p>No light sources have been identified during normal operation of the Proposed Development.</p>
Heat and radiation	<p>Construction:</p> <p>No heat or radiation sources have been identified during the construction phase.</p> <p>Operation:</p>

	Electromagnetic fields (EMFs) are emitted from OHLs, with potential effects on human health. Further detail is provided in Chapter 14 .
Waste	<p>Construction:</p> <p>The construction stage will require felling of woodland. As such, it is anticipated that forestry related residues (brush and mulch) would result from the felling operations. Further detail on forestry is provided in Chapter 12.</p> <p>Construction will generate general waste in the form of domestic wastes and other materials, for example, wood, metals, plastics and stone. Waste will be managed in accordance with good practice guidance on the use of a Site Waste and Materials Management Plans¹¹, to implement the waste management hierarchy¹²</p> <p>Operation:</p> <p>Electricity transmission does not produce any waste. However, the general maintenance of the OHL has the potential to produce a small amount of waste. This is likely to be restricted to waste associated with employees and visiting contractors.</p>

2.10 Disaster Resilience

The EIA regulations require the consideration of the potential risks to human health, cultural heritage or the environment associated with the vulnerability of the Proposed Development to major accidents and disasters. This requirement is interpreted as requiring the consideration of low likelihood but high consequence events which would result in serious harm or damage to environmental receptors.

Given the nature of the Proposed Development, the potential for risks related to the vulnerability to major accidents and disasters are likely to be limited to those associated with unplanned power outages, due to extreme weather or structural damage.

Relevant types of accident/disaster, given the predominantly rural context of the Proposed Development, include:

- severe weather events, including high winds, high rainfall leading to flooding, or extreme cold leading to heavy snow and ice loading;
- wild fire;
- traffic related accidents; and
- mass movement associated with ground instability.

Severe weather resilience is a core component to the network design, and includes consideration of flooding resilience, overhead line design and vegetation management to reduce the risk of unplanned power cuts. Crisis management and continuity plans are in place across the SSEN Transmission network. These are tested regularly and are designed for the management of, and recovery from, significant energy infrastructure failure events. Lessons learned will also be implemented following the recent high winds events to ensure the continual improvement of these crisis management systems. Where there are material changes in infrastructure (or the management of it) additional plans are developed.

¹¹ NatRegs. Site Waste Management Plans (SWMP) <https://www.netregs.org.uk/environmental-topics/waste/storage-handling-and-transport-of-waste/site-waste-management-plans-swmp/> [Accessed September 2022]

¹² Scottish Government (2017) Applying the waste hierarchy: guidance: [https://www.gov.scot/publications/guidance-applying-waste-hierarchy/pages/3/#:-:text=The%20waste%20hierarchy%20ranks%20waste,the%20lifecycle%20of%20the%20material.&text=When%20waste%20is%20created%2C%20it,all%20disposal%20\(i.e.%20landfill\)](https://www.gov.scot/publications/guidance-applying-waste-hierarchy/pages/3/#:-:text=The%20waste%20hierarchy%20ranks%20waste,the%20lifecycle%20of%20the%20material.&text=When%20waste%20is%20created%2C%20it,all%20disposal%20(i.e.%20landfill).). [Accessed September 2022]

3. EIA METHODOLOGY

3.1 The EIA Report

The EIA Report would be prepared to meet the requirements of Schedule 4 of the EIA regulations and the Institute of Environmental Management and Assessment (IEMA) Quality Mark criteria.

3.1.1 Assessment of Likely Significant Environmental Effects

Each assessment chapter will include:

- a detailed methodology covering the approach to establishing the current state of the relevant baseline scenario used in the assessment (which may be the current baseline or a future baseline scenario) and the criteria used to identify and assess the likely significant effects;
- a description of how the assessment deals with Limits of Deviations (LOD)¹³;
- a description of the relevant aspects of the current state of the environment (baseline conditions) and an outline of likely evolution of the baseline conditions in the absence of the Proposed Development (the 'do nothing' scenario) for the purpose of defining any relevant 'future baseline' scenarios that may be used as a basis for the impact assessment;
- a description of the likely significant effects;
- a description of the measures proposed to avoid, prevent, reduce, or, if possible, offset any likely significant effects (mitigation measures) and where appropriate, any proposed monitoring arrangements; and
- a description of residual effects remaining following the implementation of proposed mitigation measures.

The description of the likely significant effects will cover direct effects and indirect (including secondary) effects as a result of construction or operational activities. The description of effects will identify the effect duration (short-term, medium-term and long-term), whether effects are permanent or temporary, and if effects can be categorised as adverse or beneficial.

Consideration would be given to the potential for cumulative effects, where the assessment would describe the effects associated with the Proposed Development when considered in addition to and in combination with other reasonably foreseeable plans or projects (defined as those which are the subject of a valid consent or application for consent). The only exception being that the Applicant may include reference to other SSEN Transmission plans or projects, which are not yet the subject of an application or consent (but are foreseeable to the Applicant and relevant to this EIA). The final list of development to be considered in the cumulative effects assessment would be finalised approximately four months prior to publication to allow sufficient time to compile the EIA Report.

It is considered that there would be no potential for transboundary¹⁴ effects associated with the Proposed Development, and therefore no further assessment of transboundary effects is proposed.

3.2 Scoping Methodology

The following **Chapters (4-15)** aim to provide sufficient detail to characterise the potential interactions between the Proposed Development and the environmental receptors identified. In presenting a rationale for the proposed scope of environmental assessment, this Scoping Report has taken the sensitivity of the current state of the environment into account, based on an understanding of the baseline conditions. The Scoping Report has also been prepared with reference to the potential magnitude of impacts, considering the typical

¹³ An area which defines the practical limits within which micro-siting of the OHL infrastructure can occur within the terms of the s37 consent which is to be sought. The purpose of Limits of Deviation is to allow flexibility within a s37 consent for the final micro-siting of individual towers to respond to localised ground conditions, topography, engineering, and environmental constraints

¹⁴ Transboundary effects under the EIA Directive are effects of certain projects implemented in one Member State, likely to have significant effects on the environment of another Member State.

construction and operational activities, physical characteristics and potential emissions/residues associated with the Proposed Development.

Where there is sufficient evidence to support scoping a topic out of the EIA process, this is presented. Otherwise, where it is considered that there is the potential for likely significant effects, the Scoping Report provides details of the proposed scope or detailed impact assessment, including the approach to further baseline data collection and brief details of the proposed methodology for impact assessment which would be employed for each topic.

A detailed overview of the guidance and methodology adopted for each technical study is provided within the respective technical chapters of this Scoping Report (**Chapters 4-15**). All figures are located in **Appendix A**.

4. LANDSCAPE AND VISUAL IMPACT

4.1 Introduction

The purpose of the Landscape and Visual Impact Assessment (LVIA) is to identify, predict and evaluate potential landscape and visual effects arising from the Proposed Development.

A preliminary zone of theoretical visibility (ZTV) has been prepared for the Proposed Development in its current stage (see **Figure 4.1**). The ZTV has been used to scope out any landscape and visual receptors that would not have visibility of the Proposed Development and therefore would not be impacted. The ZTV is based on a digital terrain model (see **Figure 4.2**) that does not contain features such as vegetation or built forms that would interrupt such visibility. Once a finalised scheme has been achieved, the ZTV would be re-run and its findings verified and refined during field reconnaissance during preparation of the LVIA.

4.2 Baseline Conditions

4.2.1 Study Area

A Study Area of 10 km from the Proposed Development will be adopted for the LVIA, as based on previous experience of similar developments elsewhere in Scotland, significant effects are expected to fall within this extent.

In this section, receptor distances from the Proposed Development are calculated from the edge of the Proposed Route to the nearest part of the receptor. Where measurements are given between landscape character types, designated areas, routes or settlements, such measurements relate to the nearest part of such areas to the Proposed Route.

4.2.2 Desk Study

Landscape Character

Figure 4.3 shows the location and extent of landscape character types (LCTs) within the 10 km LVIA Study Area. The Proposed Development extends across seven LCTs, all of which have theoretical visibility of the Proposed Development. These include:

- (LCT40) Craggy Upland – Argyll;
- (LCT53) Rocky Coastland – Argyll;
- (LCT39) Plateau Moorland and Forest;
- (LCT34) Steep Ridges and Mountains;
- (LCT37) Upland Glens – Argyll;
- (LCT35) Rugged Mountains; and
- (LCT250) Steep Ridges and Hills.

With the exception of the Upland Glens – Argyll (LCT37) which has limited theoretical visibility of the Proposed Development the LVIA will consider the effects of the Proposed Development on all of these LCTs. The extent and characteristics of the LCTs will be verified as part of the assessment fieldwork and the boundaries may be refined as part of this process.

Landscape Designations

Landscape Designations are presented on **Figure 4.4**. The North Argyll Area of Panoramic Quality (APQ) covers a large area north of Loch Lomond and Trossachs National Park (LLTNP) stretching to Loch Linnhe in the north. The northernmost section of the Proposed Route lies within this APQ. Conifer plantations are dominant within this part of the APQ and contrast with the grass moorlands which surround them.

There is no formal citation setting out the special qualities of the area or the reasons for its designation. However, the Argyll and Bute Landscape Wind Energy Capacity Study provides some information, noting that the designation reflects the *“juxtaposition of different landscape types in this area, including the dramatic and rugged mountains, the small scale pattern of settled glens, the presence of the Loch and its islands and the contrasts in scale, relief and landform shape which combine to add to the diversity and associated scenic quality of this landscape”*¹⁵.

The LLTNP lies 9.8 km south east at its closest point to the Proposed Development. It is designated for its scenic qualities, natural and cultural heritage, diverse range of habitats and species, distinctive cultural identity, rolling lowlands in the south to high mountains in north, lochs and rivers, forests and woodland.

LLTNP extends to the summit of Cruach nam Mult and it is this part which it is found within the Study Area. This extent of the LLTNP is classified as being within the Argyll Forest Landscape Area¹⁶.

There are two Wild Land Areas (WLA) within the Study Area: These are:

- (06) Ben Lui located approximately 4.3 km north east; and
- (09) Loch Etive Mountains is located approximately 8.5 km north.

The southern end of the Proposed Development lies within the nationally designated landscape Inveraray Castle Garden and Designed Landscape (GDL) as identified by the Historic Environment Scotland (HES) Inventory. The Proposed Development is found within the northern extent of this GDL within Balantyre Wood where it would connect with the Inveraray – Crossaig OHL which also passes through the GDL.

The Ardanaiseig House GDL is located approximately 4.5 km north of the Proposed Development as it connects with the Creag Dhubh substation. The initial ZTV shows there would be intervisibility of the Proposed Development from this GDL.

The Ardkinglas and Strone GDL is located approximately 7.2 km east of the Proposed Development as it connects with the Crossaig – Inveraray OHL. The initial ZTV shows there would be no intervisibility of the Proposed Development from this GDL, and therefore it has been scoped out of the LVIA.

Table 4.1 below, provides a list of Landscape Designations and Classifications which fall within the LVIA Study Area, have theoretical visibility of the Proposed Development and whether it is intended to include each of the designations in the LVIA.

¹⁵ Argyll and Bute Council (2017) Landscape Wind Energy Capacity Study – Main Report Volume 2

¹⁶ Scottish Natural Heritage and Loch Lomond and the Trossachs National Park Authority (2010). The special landscape qualities of the Loch Lomond and Trossachs National Park. *Scottish Natural Heritage Commissioned Report, No 376*

Table 4.1: Landscape Designations and Classifications (within the 10 km LVIA Study Area) to be included in the LVIA

Designation / Landscape Classification	Within ZTV	Approximate distance & direction from the Nearest Proposed Tower	Included in the LVIA
National Park			
Loch Lomond and Trossachs National Park (LLTNP)	Yes	9.8 km south east	Yes Initial ZTVs shows very limited theoretical visibility the Graham Cruach nam Mult, a summit just within the boundary of LLTNP. Notwithstanding the limited extent of the LLTNP within the Study Area and its distance from the Proposed Development, the LVIA will address potential effects on this designation.
Area of Panoramic Quality (APQ)			
Argyll and Bute Areas of Panoramic Quality (APQ)	Yes	Proposed Development lies within this designated area	Yes
Gardens and Designed Landscapes (GDLs)			
Ardanaiseig House	No	4.5 km north	Yes
Inveraray Castle	Yes	Proposed Development lies within this designated area	Yes
Wild Land Areas (WLAs)			
(6) Ben Lui	Yes	4.3 km north east	Yes ¹⁷
(9) Loch Etive Mountains	Yes	8.8 km north east	Yes

Visual Amenity

The Visual Assessment identifies the impact the Proposed Development has on people's visual amenity within the Study Area. Visual receptors (or people at a particular location, for example road users or residents) are identified as those locations where there is theoretical visibility of the Proposed Development. Using this baseline information, the visual assessment addresses any change to views that the Proposed Development would have. In accordance with the GLVIA³ guidance, professional judgement is used to identify visual receptors.

The Proposed Development lies within Glen Aray, which links to Loch Awe and Loch Fyne. Views within the area surrounding the Proposed Development are channelled along the glen and are enclosed by hillsides or blocked by areas of dense forestry and woodland.

¹⁷ A separate Wild Land Assessment will be prepared for each of these WLAs and presented in an Appendix to the LVIA.

Settlements

Settlements and residential properties are largely concentrated along loch shores and within glens. The largest settlement within the Study Area is Inveraray which is located on the north eastern shore of Loch Fyne. Dalmally lies to the north of the Study Area, to the south of the A85 in the Strath of Orchy. Smaller clusters of settlement are found along the shores of Loch Awe, including Lochawe, Claddich, Kilchrenan and Dalavich. Scattered hamlets and single properties and farmsteads are found at lower elevations throughout the Study Area, where topography allows.

A detailed search will be undertaken to identify whether there are any residential dwellings within 500 m of the final Alignment of the Proposed Development. If properties are identified within this area, a Residential Visual Amenity Assessment (RVAA) will be produced to assess the effects of the visual amenity on these properties. A finalised list of dwellings to be included in the RVAA will be drawn up following consultations with ABC and NatureScot (NS).

Transportation Routes

Transportation routes across the Study Area are generally aligned to glens, valleys and loch shores (see **Figure 4.5**). The initial ZTV indicates visibility from the following routes which would be addressed in the LVIA:

- The A819;
- The A83;
- The A815;
- The A85;
- The B845; and
- The Crainlarich to Oban spur of the West Highland Railway Line.

Recreational Routes and Summits

National Cycle Network (NCN) Route 78 crosses through the northern portion of the Study Area, approximately 5.7 km to the north west of the Proposed Development at its closest point. It follows an unnamed road from Ford via Kilchrenan before it joins the A845 near Taynuilt.

Within the western part of the Study Area there is a network of Argyll and Bute Adopted Core Paths (shown in **Figure 4.5**). Those which have theoretical visibility, and which will be assessed with the LVIA include:

- C200(b) - Coille Bhraghad-Queens Drive-Inveraray and
- C201 - Dun Na Cuaiche, Inveraray.

Valued views in the Study Area which will be considered in the LVIA include:

- views across open water from many vantage points along the shores of Loch Awe and Loch Fyne such as Inveraray Castle;
- the Cruachan Visitor Centre and the loch-side roads;
- from the elevated monuments on hill tops such as the Neil Munro monument above the A819; and
- elevated views from the mountain summits in the north and east of the Study Area including Beinn Ghlas (550 m AOD), the Corbett Ben a' Bhùiridh (897 m AOD) and the western ridge of Bein Bhuidhe including Stac a Chuirn (870 m AOD) and the Grahams Cruach nam Mult (611 m AOD) and Stob an Eas (732 m AOD).

The LVIA will consider the impacts on hill walkers including the experience of the journey along the key walking routes and the approach to (and view from) key summits. This will be undertaken as part of the recreational route assessment and as part of the viewpoint assessment (see **Table 4.2** below).

Proposed LVIA Viewpoints

To verify the findings of the LVIA, a series of representative viewpoints have been consulted on with NS and ABC (awaiting response at the time of writing the Scoping Report). These are intended to represent a range of landscape and visual receptors located within in the Study Area and at different distances, directions and elevations relative to the Proposed Development. These are listed in the **Table 4.2** below, and their locations illustrated in **Figure 4.6**.

Table 4.2: Proposed LVIA Viewpoint Locations

VP	VP Name	Approximate Coordinates (x,y) Distance from Proposed Development ¹⁸	Representative of View From
01	A819 north of Tulloch	209131, 716657 Within Proposed Route	<ul style="list-style-type: none"> A819 Road, used by tourists and commuters Rocky Coastland – Argyll Landscape Character Area (LCA)
02	A819 south of Cladich	209678, 718721 0.7 km east	<ul style="list-style-type: none"> A Road, used by tourists North Argyll Area of Panoramic Quality (APQ) Craggy Upland Argyll LCA
03	Inveraray castle GDL at the Tower	209988, 710156 2.5 km south east	<ul style="list-style-type: none"> Garden and Designed Landscape Area of Panoramic Quality Plateau Moorland and Forest – Argyll LCA
04	A815 at Hazelbank	209416, 704211 7 km south	<ul style="list-style-type: none"> Long distance view from south of Loch Fyne A road North Argyll APQ Rocky Coastland – Argyll LCA
05	Public Path at Cruachan Reservoir	208128, 728111 8.3 km north	<ul style="list-style-type: none"> Area of Panoramic Quality Local attraction Rugged Mountain LCA
06	Monadh Driseig	211322, 728181 8.8 km north	<ul style="list-style-type: none"> Summit North Argyll APQ On southern boundary of Loch Etive Mountains Wild Land Area (WLA) Rugged Mountain LCA
07	Core Path and Loch an Droighinn	202568, 723799 3.9 km north west	<ul style="list-style-type: none"> Core Path Craggy Upland - Argyll LCA
08	A819 at Three Bridges	208833, 712419 0.5 km east	<ul style="list-style-type: none"> A Road, used by tourists Northern boundary of Inveraray Castle GDL Rocky Coastland – Argyll LCA

¹⁸ Distance is approximate and is measured from the closest part of the Proposed Development to the VP; direction is from the Proposed Development to the VP.

VP	VP Name	Approximate Coordinates (x,y) Distance from Proposed Development ¹⁸	Representative of View From
09	Cruach Mhor	205699, 714747 3 km west	<ul style="list-style-type: none"> • High point above Aray valley • Craggy Upland - Argyll LCT
10	Hilltop above Lochan Shira Reservoir (WLA)	215744, 720918 6.4 km north east	<ul style="list-style-type: none"> • Ben Lui WLA • North Argyll APQ • Steep Ridges and Mountains LCA
11	Ardanaiseig GDL	208953, 724523 5.0 km north	<ul style="list-style-type: none"> • Garden and Designed Landscape • Rocky Coastland – Argyll LCA
12	Stuc Scardan summit	211094, 714773 2.3 km east	<ul style="list-style-type: none"> • Summit • North Argyll APQ • Craggy Upland - Argyll LCT
13	Stac a Chuirn	219153, 718094 9.4 km east	<ul style="list-style-type: none"> • Summit • North Argyll APQ • Ben Lui WLA • Steep Ridges and Mountains LCA

4.3 Field Survey

Initially, field reconnaissance will be undertaken to verify the findings of the desktop study, and the baseline description will be adjusted as necessary to accurately reflect the conditions on the ground. A second, extended field reconnaissance would be undertaken during preparation of the LVIA and would be undertaken using *VentusAR* virtual reality system and photomontages of the finalised scheme.

4.4 Sensitive Receptors

Receptors set out in **Section 4.2** above are considered to be sensitive to the Proposed Development and will be taken forward for assessment in the LVIA. These include:

- The landscape of the Proposed Development, and LCTs within the Proposed Development and across the 10 km Study Area;
- Landscape designations and classifications within the Study Area; and
- Visual receptors with views to the Proposed Development, including settlement and scattered properties, recreational receptors (i.e., core path users, hill walkers etc), people travelling through the area on roads and railway.

4.5 Potential Significant Effects

Potentially significant landscape effects include:

- direct effects on the landscape;
- direct & indirect effects on Craggy Uplands LCT40, the Rocky Coastland LCT53 and the Plateau Moorland and Forest - Argyll LCT39, and indirect effects on LCTs within the Study Area;
- direct effects on North Argyll APQ;
- direct effects on the Inveraray Castle GDL; and
- direct effects on the Ben Lui and Loch Etive Mountains WLAs.

Potentially significant visual effects include those on:

- residential receptors in settlements and scattered residential properties with views of the Proposed Development;
- recreational receptors accessing the summits surrounding Stac a'Chùirn to the east, Beinn an t-Seilich groups southeast of Loch Fyne, and the summits around Ben a' Bhùiridh north of Loch Awe, local walkers including those using the core paths around Inveraray and kayakers/ boaters on Loch Awe and Loch Fyne; and
- road users on the A819 which runs largely parallel to the Proposed Development.

Direct, indirect and cumulative effects of the Proposed Development will be assessed and, where appropriate and feasible, mitigation measures may be proposed to reduce any significant adverse effects.

Note that residential visual amenity effects on private views from individual dwellings and groups of dwellings will be addressed in an Appendix to the EIA Report, if required (see **Section 4.2.2**).

4.6 Assessment Scope and Methodology

4.6.1 Guidance

The LVIA would be undertaken in accordance with the following guidance and established standards:

- *Guidance for Landscape and Visual Impact Assessment*. (Third Edition); Landscape Institute and Institute of Environmental Management and Assessment. (2013). (Referenced as GLVIA3 hereafter).
- A handbook on environmental impact assessment: Guidance for competent authorities, consultees and others involved in the Environmental Impact Assessment process in Scotland, V5. NatureScot. (2018).
- *Landscape Character Assessment*. NatureScot. (2019).
- *Landscape Character Assessment*. The Countryside Agency and Scottish Natural Heritage. (2002).
- *Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity*. Scottish Natural Heritage and the Countryside Agency. (2002).
- *Visual Representation of Development Proposals – Landscape Institute Technical Advice Note 06/19*. Landscape Institute. (2019).
- *Pole Transmission and Distribution Lines in Rural Landscapes – Perceptibility*. ENVISION & MTLA (2008).

Wherever possible, effects will be quantified, however, the nature of landscape and visual assessment requires interpretation by professional judgement.

4.6.2 Significance of Landscape and Visual Effects

Table 4.3 below, illustrates how residual effects will be determined by comparison of the sensitivity of receptors with the magnitude of impacts. For the purposes of the LVIA significant landscape or visual effects will be defined as major or major/moderate. It should be noted, however, that the matrix is not intended to be applied in an arithmetical manner, but should be applied with professional judgement, with justification being given for findings. Unless otherwise stated effects are adverse as the Proposed Development would introduce new infrastructure development into the landscape.

Table 4.3: Residual Effects

Landscape and Visual Sensitivity	Magnitude of Change				
	Substantial	Moderate	Slight	Negligible	None
High	Major	Major/moderate	Moderate	Moderate/ minor	None

	Magnitude of Change				
Medium	Major/moderate	Moderate	Moderate/minor	Minor	None
Low	Moderate	Moderate/minor	Minor	Minor/none	None

4.6.3 Supporting Assessments and Graphics

The LVIA will be accompanied by a series of Technical Appendices (TAs) that will provide detailed assessment of residual effects on different aspects of the landscape and visual resource, including:

- An assessment of residual effects on landscape character types (LCTs);
- An assessment of residual effects on designated and classified landscapes;
- A Wild Land Impact Assessment for each of the WLAs within the Study Area; and
- A detailed viewpoint assessment.

Additionally, the LVIA will also be accompanied by a series of figures and visualisations.

In order to provide a level of consistency to the assessment, receptor sensitivity, the prediction of magnitude of impact, and assessment of significant residual effects will be based upon pre-defined criteria based on guidance provided by the Landscape Institute.

4.7 Issues Scoped Out

Those LCTs and GDLs which have been scoped out of the assessment due to no or minimal visibility include:

- (LCT37) Upland Glens - Argyll; and
- The Ardkinglas and Strone GDL.

4.8 Summary

The LVIA will identify and evaluate the likely residual effects of the Proposed Development on landscape and visual receptors within 10 km of the Proposed Development. This will be undertaken via desk study and through field reconnaissance.

The effects of the Proposed Development on landscape character and on views and visual amenity would be assessed and mitigation measures, where appropriate, would be proposed to prevent, reduce, or offset any likely significant adverse effects identified. Cumulative effects from the Proposed Development in combination with other proposed developments would also be considered.

5. CULTURAL HERITAGE

5.1 Introduction

This assessment will consider the potential effects of the Proposed Development on cultural heritage assets (archaeology and built heritage). The specific objectives will be to:

- identify the cultural heritage baseline within the Proposed Development LOD;
- assess the Proposed Development LOD in terms of its archaeological potential;
- identify designated cultural heritage assets within 5 km of the Proposed Development, where there is the potential for indirect effects to affect their settings;
- consider the potential direct, indirect, and cumulative effects of the Proposed Development on heritage assets; and
- identify measures, where appropriate, to mitigate any predicted significant adverse effects and to assess residual effects taking this mitigation into account.

5.2 Baseline Conditions

5.2.1 Statutory and Non-Statutory Designated Heritage Assets

Cultural heritage assets within 5 km of the Proposed Development are shown on **Figure 5.1** and **Figure 5.2**.

A preliminary appraisal, informed by desk-based work, indicates that there is one statutory designated cultural heritage asset within the Proposed Route, the Proposed Route extends into the northern edge of Inveraray Castle Garden and Designed Landscape (GDL) (GDL 223).

In addition to the asset within the Proposed Route, there are 135 other statutory designated cultural heritage assets within a 5 km Study Area. They include 12 Scheduled Monuments, 33 Category A Listed Buildings, 56 Category B Listed Buildings, 32 Category C Listed Buildings, one additional GDL (Ardanaiseig House (GDL 18)), and one Conservation Area (Inveraray (CA 467)).

The closest Scheduled Monument to the Proposed Development, Keppochan cup marked stone (SM 4186), lies over 1.5 km from the Proposed Route and the closest Listed Building, Category B Listed Glen Array School (LB 11523), ruins of 18th century 'Gothick' school and associated buildings, lies approximately 650 m from the Proposed Route. The majority of the listed buildings within the 5 km Study Area stand within, and form part of, Inveraray Castle GDL and Inveraray Conservation Area.

There are no World Heritage Sites or Inventory Historic Battlefields within 5 km of the Proposed Development.

There are 16 heritage assets within 5 km of the Proposed Development that are classed as non-statutory register (NSR) assets. These are assets recorded in the HER as being potentially of national importance and of schedulable quality and, for the purpose of the assessment, will be treated as being of high sensitivity. These are: Newtown Cairn (1503, 3.2 km and 1519, 3.1 km), Newtown, Kerb-cairn (1510, 3 km and 1518, 3 km), Inveraray Castle, Standing Stones (1521, 2.4 km), Drimfern Long Cairn (1582, 0.4 km), Portsonachan, Chambered Cairn (1618, 3.5 km), Loch Awe, Crannog (1630, 4.2 km), Glen Shira, Crannog (1737, 3 km), Dun na Cruiche, Dun (1639, 4 km), Kimalieu Mound and Gold finger-ring (1707, 2.5 km), Kimalieu Church and Burial Ground (1708, 2.6 km), Dubh Loch, Fort (1735, 2 km), Dubh Loch, Castle (1738, 3 km), Blarowin Township (1739, 3.6 km) and Cladich Chambered Cairn (1778, 2.6 km).

5.2.2 Non-Designated Heritage Assets

Preliminary appraisal indicates that, within the Proposed Route, there are 18 non-designated cultural heritage assets listed in the West of Scotland Archaeology Service (WoSAS) Historic Environment Record (HER) and in the National Record of the Historic Environment (NHRE).

One, Kilmun, Chapel and Burial Ground (1581), is defined in the HER as potentially being of national importance and of schedulable quality.

The other heritage assets are primarily associated with medieval or post-medieval settlement and agrarian activity along the river valley.

The recorded heritage assets include:

- The remains of a possible burial cairn identified during forestry activities at Three Bridges (59106);
- The find-spot of a gold armet and other gold ornaments (1570) dating to the late Bronze Age, discovered at Tullich in the 1960s;
- A mound (1569) known locally as 'Tom na Cuirte' recorded as potentially being a 'court-hill' by the Ordnance Survey at Drimfern;
- Medieval / Post-medieval townships and farmsteads (1568, 44186, 44187, 44096, 61968, 53907/365341 and 58868);
- A group of shieling huts at Creag Dhubh (44126);
- Other buildings (44108) and agrarian features, including an enclosure (53906) and sheepfolds (53148 and 57791);
- The routes of a former 18th century military road (21741) between Inveraray and Tyndrum;
- A former well, 'Bishops Well' (1572); and
- A possible stone structure (557789).

The heritage assets are primarily located along the lower slopes of the River Aray valley. The heritage assets indicate that there has been activity from at least the prehistoric period onwards within the landscape crossed by the Proposed Route.

5.2.3 Additional Baseline

A desk-based assessment and reconnaissance walkover survey would be conducted, covering a 200 m Limit of Deviation (LOD) corridor (100 m either side) of the Proposed OHL Alignment, in order to:

- identify all potential heritage assets, designated or otherwise;
- identify potential direct impacts on cultural heritage assets; and
- inform an assessment of the archaeological potential of the Proposed Development.

Desk-Based

The collation of baseline information from desk-based sources would comply with the Chartered Institute for Archaeologists (CIfA) 'Code of Conduct' (2014, revised 2021¹⁹) and 'Standard and Guidance for Historic Environment Desk-based Assessment' (2017, updated 2022²⁰).

Sources to be consulted for the collation of data would include on-line heritage databases (HER; HES GIS data download and the NRHE historic maps, modern aerial photographs (Google Maps, and ESRO World Imagery) and bibliographic and documentary references.

The desk-based results would be collated to form:

- A gazetteer of all known cultural heritage assets within the Proposed Development LOD, detailing for each asset, the asset type, description of the asset, and the sensitivity of the asset. The assessment of cultural significance and sensitivity of heritage assets will take account of the Institute for Environmental

¹⁹ Chartered Institute for Archaeologists (CIfA) (2014, revised 2021) 'Code of Conduct: Professional Ethics in Archaeology, Chartered Institute for Archaeologists, Reading.

²⁰ Chartered Institute for Archaeologists (CIfA) (2017, updated 2020) 'Standard and guidance for historic environment desk-based assessment', Chartered Institute for Archaeologists, Reading.

Assessment and Management (IEMA) guidance 'Principles of Cultural Heritage Impact Assessment in the UK' (IEMA, 2021²¹).

- A gazetteer listing details of all designated heritage assets and assets classed as non-statutory register (NSR) assets within the HER that have predicted visibility of the Proposed Development. Detailed descriptions and background information will be collated for those sites that HES and WoSAS, through consultation, consider potentially sensitive to the Proposed Development.
- Site location mapping (using GIS).

Field Survey

Reconnaissance walkover field survey would be conducted within the Proposed Development LOD to:

- Locate all visible heritage assets, both those identified during the desk-based assessment and any previously unrecognised, and to record their character, extent and current condition.
- Identify areas with the potential to contain unrecorded, buried archaeological remains, taking into account factors such as topography and ground conditions.
- Inform the assessment of possible direct impacts of the Proposed Development on identified assets.

The walkover survey would exclude any inaccessible areas of dense forestry plantation, apart from attempting to locate features identified during the desk-based assessment that are readily accessible without venturing into forestry coupes.

The survey would also include visiting cultural heritage assets with theoretical visibility of the Proposed Development within 5 km, in as far as access is possible, or required, to assess the predicted effect of the Proposed Development on their settings. Site visits will focus on heritage assets most likely to receive significant effects on their settings (i.e. those that are closest to the Proposed Development or those that have settings sensitive to change resulting from the Proposed Development). Where access is difficult or denied, publicly accessible locations as close as possible to the asset will be sought as a basis for assessment.

Following the walkover field survey of the Proposed Development LOD and site visits to key external receptors, within 5 km of the Proposed Development, the gazetteers will be updated with the results of the fieldwork, including the addition of any new and previously unrecorded assets identified during the walkover survey. The gazetteers will then subsequently form Appendices to of the EIA Report.

5.3 Sensitive Receptors

The Proposed Development extends into the northern part of Inveraray Castle GDL, where it would connect into an existing OHL (Inveraray to Crossaig OHL), which already passes through Inveraray Castle GDL. The GDL forms the setting for Category A Listed Inveraray Castle (LB 11552). The Castle forms the focal point of a substantial designed landscape, which includes over 100 listed buildings, that is a significant example of the 'Sublime' designed landscape style in Scotland and is potentially sensitive to effects on its setting from the Proposed Development. As such, the impact of the Proposed Development on the setting of the GDL and its associated listed buildings will be a key consideration in the EIA.

A candidate list of viewpoints for cultural heritage assessment has been produced taking into consideration the list of potentially sensitive cultural heritage assets highlighted by analysis of the initial ZTV (**Figures 5.1 and 5.2**). Indicative viewpoint locations are listed below in **Table 5.1** and their locations are shown on **Figures 5.1 and 5.2**. Consultation will be undertaken with HES and WoSAS to agree the cultural heritage viewpoints and viewpoint type (i.e., photomontage; wireline) and cross reference will be made to Landscape and Visual viewpoints where these are relevant to the cultural heritage assessment.

²¹Institute for Environmental Management & Assessment (IEMA) (2021) 'Principles of Cultural Heritage Impact Assessment'.

Table 5.1: Candidate Cultural Heritage Viewpoints

Asset number	Asset name	Status	Proposed Viewpoint Location
LB 11540	Carloonan Dovecot	Category A Listed (forms part of Inveraray Castle GDL) –	Viewpoint looking north from the end of Oak Avenue towards dovecot.
LB11552	Inveraray Castle	Category A Listed (forms part of Inveraray Castle GDL)	Viewpoint from west corner tower upper floor (16 m viewer height)
LB 11543	Dun na Cuaiche Watch Tower	Category A Listed (forms part of Inveraray Castle GDL)	Viewpoint from monument; cross reference will be made to LVIA VP 03
LB `11545	Array Bridge	Category A Listed (forms part of Inveraray Castle GDL)	Viewpoint from listed building
LB 11523	Glen Array School	Category B Listed	Viewpoint from listed buildings
1581	Kilmun Glen Array, Chapel and Burial Ground	WoSAS HER NSR Site	Viewpoint from monument
1582	Drimfern, Long Cairn	WoSAS HER NSR Site	Viewpoint from monument

5.4 Potential Significant Effects

Taking account of the findings of the desk study undertaken to date, whilst still adopting a precautionary approach at this preliminary stage, potential effects on cultural heritage associated with construction and/or operation of the Proposed Development include:

- Direct (physical) effects on non-designated cultural heritage sites or features within the Proposed Development LOD.
- Physical disturbance of known or hitherto undiscovered sites or features, including unforeseen buried remains of archaeological interest.
- Effects on the settings of cultural heritage assets, resulting from intervisibility between the asset and the Proposed Development.
- Cumulative effects on the settings of cultural heritage assets from the Proposed Development in combination with other proposed developments in the locality.

5.5 Assessment Scope and Methodology

The archaeological and cultural heritage assessment would be carried out with reference to the following guidance documents:

- Chartered Institute for Archaeologists (2017, updated 2020) 'Standard and Guidance for Historic Environment Desk-Based Assessment'.
- SNH & HES (2018) 'Environmental Impact Assessment Handbook'.
- HES (2019) 'Designation Policy and Selection Guidance'.
- HES (2016) 'Managing Change in the Historic Environment: Setting'.
- Planning Advice Note (PAN) 2/2011: Planning and Archaeology.
- IEMA (2021) 'Principles of Cultural Heritage Impact Assessment'.

Assessment of likely direct, indirect, and cumulative effects of the Proposed Development on heritage assets would take into account the sensitivity of the heritage asset and its setting, where appropriate, and the likely magnitude of change, which would be combined to provide a likely significance of effect. The methodology that

would be employed in the assessment, based on the guidance in the SNH/HES Guidance (2018 ²²), would be agreed through consultation with HES and WoSAS.

Mitigation measures designed to prevent, reduce, or offset significant adverse effects would be set out and residual effects remaining following the implementation of proposed mitigation measures would be assessed.

5.6 Issues Scoped Out

Assessment of the effect of the Proposed Development on the settings of World Heritage Sites and Inventory Historic Battlefields will be scoped out. There are no assets with those designation within 5 km of the Proposed Development.

Assessment of the effect of the Proposed Development on the settings of key heritage assets more than 5 km from the Proposed Development will be scoped out. None have been identified through initial analysis as having settings sensitive to adverse effects from the Proposed Development.

5.7 Summary

The proposed approach to the assessment has been designed to identify and evaluate any cultural heritage assets present within the Proposed Development LOD, through examination of desk-based sources and detailed field survey, and to identify key heritage assets within 5 km of the Proposed Development.

The effects of the Proposed Development (direct and indirect impacts) on heritage assets would be assessed and mitigation measures, where appropriate, would be proposed to prevent, reduce, or offset any likely significant adverse effects identified. Cumulative effects from the Proposed Development in combination with other proposed developments would also be considered, where appropriate.

²² Scottish Natural Heritage (SNH) & Historic Environment Scotland (HES) (2018) 'Environmental Impact Assessment Handbook'.

6. ECOLOGY

6.1 Introduction

The EIA will consider the potential effects of the Proposed Development on ecological features (non-avian) along the proposed OHL and within the ecological zones of influence for species identified as important ecological features. Evaluation of the existing baseline environment will be made through a combination of desk-based study, field surveys and consultation. This section:

- Describes the baseline conditions within the Study Area;
- Describes the key ecological issues associated with construction and operation of the Proposed Development;
- Presents the proposed survey methods that will be used to generate additional ecological baseline information; and
- Outlines the proposed approach to the Ecological Impact Assessment (EclA; as part of the wider EIA).

6.2 Baseline Conditions

6.2.1 Desk Study

A desk study has been undertaken using the NatureScot SiteLink²³ website to identify designated nature conservation sites (10 km for sites of international²⁴ importance and 2 km for those of national²⁵ importance). In addition, a search for publicly available biological records was undertaken within 2 km of the Proposed Development using the following sources:

- NatureScot Sitelink²³; and
- The Multi-Agency Geographic Information for the Countryside (MAGIC)²⁶.

Table 6.1 summarises the key habitat and species action plans within the Argyll and Bute Local Biodiversity Action Plan (LBAP) 2010 - 2015.

Table 6.1: Argyll and Bute LBAP Habitat and Species

Terrestrial Habitats	Species (non-avian)
Atlantic Woodland	Lichen
Improved Grassland	Marsh Fritillary Butterfly
Machair and Dune	Bats
Native Caledonian Pinewoods	Otter
Peatlands	Pearl-bordered Fritillary Butterfly
Planted Conifer Forest	Red Deer
Unimproved Grassland	Red Squirrel
	Brown Hare
	Water vole
	Wildcat
	Slender Scotch Burnet Moth

²³ NatureScot. SiteLink. <https://sitelink.nature.scot/home> [Accessed February 2022]

²⁴ i.e., Special Areas of Conservation (SAC).

²⁵ i.e., Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs)

²⁶ MAGIC (2020). MAGIC Map. <http://magic.defra.gov.uk/>. [Accessed February 2022]

Terrestrial Habitats	Species (non-avian)
	Sword-leaved Helleborine
	Transparent Burnet Moth

Special Protection Areas (SPAs), and Ramsar sites, which are statutory designated sites of international importance for birds, are considered in **Section 7: Ornithology**.

Four statutory designated sites of international or national importance were identified within 10 km of the Proposed Development. Details of these sites, including of the qualifying features associated with them, are provided within **Table 6.2** and shown on **Figure 6.1**.

There are no non-statutory designations identified with potential connectivity to the Proposed Development.

Table 6.2: Statutory Designated Sites of International and National Importance

Site Name	Designation	Qualifying Feature	Distance and Direction from Site ²⁷
Glen Shira	SAC	Western acidic oak woodland	4.3 km east
Ardchyline Woods	SSSI	Native woodland – upland oak Ancient Woodland	5.8 km south east
Loch Etive Woods	SAC/SSSI	Alder woodland on floodplains Mixed woodland on base-rich soils associated with rocky slopes Western acidic oak woodland Otter	6.9 km north
Beinn an Lochain	SSSI	Siliceous scree (includes boulder fields) Tall herb ledge Upland assemblage	9.5 km west

6.2.2 Field Survey

Field surveys²⁸ will be undertaken by Ramboll in spring 2022. The surveys shall include an extended Phase 1 Habitat Survey, Targeted National Vegetation Classification (NVC) survey and a protected species survey.

6.2.3 Habitats

The main habitat type present within the Proposed Route is open grassland used for rough grazing, with patches of marshy grassland. A large area of broadleaved woodland is located at the southern end of the Proposed Route. The northern end of the Proposed Route and the proposed Creag Dhubh substation lie within an area of commercial conifer forestry.

Marshy grassland is the dominant habitat type. Marshy grassland also dominates in the open areas within the coniferous plantation woodland.

²⁷ Measured from the closest point.

²⁸ The Study Area covered the 2017 proposed Alignment (plus 100 m buffer), between Creag Dhubh substation and Dalmally substation.

6.2.4 Protected Species

Potential suitable habitat is present for otter, water vole, bat, badger, pine marten, red squirrel and reptiles. Aquatic habitat was identified for Atlantic salmon *Salmo salar* and brown trout *Salmo trutta* within the River Aray which runs adjacent to the Proposed Route for much of its length.

Otter

The Proposed Route crosses the River Aray and a number of its small tributaries, particularly at the northern end. These watercourses have high potential for otters to rest, forage and commute.

Water Vole

The majority of the River Aray also does not provide optimal conditions. However, the upper reaches of the River Aray close to the proposed Creag Dhubh substation do have suitable habitat for the species. Water vole signs were recorded in that area in 2017 as part of surveys for the OHL project joining the proposed Creag Dhubh substation from the north.

Bat Species

Suitable roosting habitat for bats is present within the broadleaved woodland. Mature trees could have rot holes, snag ends, broken limbs, cavities, cracks and dropped limbs. These features offer bat roost potential. Suitable foraging and commuting habitat is present along forest edges, in forest rides, and along watercourses.

Badger

Suitable habitat for badger within the Proposed Route is limited due to the ground being wet or rocky.

Red Squirrel

Mature coniferous plantation woodland (considered to be >25 years old), providing suitable habitat for red squirrel, is found in the north of the Proposed Route.

Pine Marten

As with red squirrel, the extensive areas of forestry provide a good resource of foraging, commuting and shelter for the species.

Reptiles and Amphibians (herpetofauna)

Suitable habitat for reptiles (e.g., adder, slow worm and common lizard) is present in open upland moorland, and at woodland edges and rides. All open areas of the Proposed Route are suitable for reptiles to be present.

6.3 Sensitive Receptors

The ecological baseline shall be established following the field surveys and shall identify important ecological features that could be affected by the construction and operation of the Proposed Development. These are likely to include habitats identified as broadleaved (ancient) woodland, potential Ground Water Dependent Ecosystems (GWDEs), red squirrel and pine marten. Any trees or features identified as having bat roost potential that need to be removed or may be disturbed by the Proposed Development could be significantly affected in the absence of appropriate mitigation.

The importance or sensitivity of an ecological feature will be ascertained via review of literature and guidance, field survey data, legal protection / conservation status and professional judgement.

6.4 Potential Significant Effects

General

The cumulative effects of the Proposed Development with other developments, either built or proposed, within the zone of influence²⁹ for important ecological features identified as sensitive receptors, will be considered. This would include impacts that are additional or in-combination with the Proposed Development.

Habitats

During construction, excavation and vegetation clearance works may negatively affect GWDTEs, and areas of Ancient Woodland through direct impacts or indirect impacts such as permanent or temporary changes to existing hydrological conditions. The impacts would be assessed and characterised to identify potential significant effects and whether avoidance or mitigation is required.

No operational impacts associated with the Proposed Development have been identified at this stage.

Protected Species

Protected species, including red squirrel and pine marten, may be negatively affected by vegetation clearance resulting in habitat loss, fragmentation and severance. The works are likely to affect the ability of these species to rest, breed, forage and commute. Any trees or structures with bat roost potential that would be removed or disturbed during construction could result in significant impacts to bats. The impacts would be assessed and characterised to identify potential significant effects and whether appropriate avoidance or mitigation is required.

Otters may use the watercourses in and around the Proposed Development. Key operational infrastructure for the Proposed Development will be installed outside of riparian zones (including a 50 m buffer on watercourses where possible); however, it is likely that a number of access track watercourse crossings will be required during construction. The EIA will identify the requirement for mitigation for otter, including the need for mammal crossings to be incorporated into proposed access tracks.

Reptiles are likely to be present in open moorland, rough grassland and along woodland rides and edges. They are unlikely to be present in the extensive coniferous woodland. Reptiles may be negatively affected by vegetation clearance required to facilitate the works. The EIA Report will identify the need for pre-construction surveys in areas where there is potential for the presence of sensitive features used for shelter and hibernation. The EIA Report will also identify a protocol for where micro-siting avoidance of sensitive features is not possible, including non-licensed precautionary methods of working under the supervision of the Ecological Clerk of Works (ECoW).

No operational impacts associated with the Proposed Development are considered to exist.

6.5 Assessment Scope and Methodology

The EclA will be completed in accordance with the Chartered Institute of Ecological and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment³⁰. The assessment will use the ecological baseline to identify the Important Ecological Features (IEFs) that could be affected by the construction of the Proposed Development. IEFs will be assigned a geographic level of importance based on their conservation status and population / assemblage trends and other relevant criteria (including size, naturalness, rarity and diversity). Details of the Proposed Development will then be used to assess what level of effect each receptor is likely to receive and whether that impact will be beneficial or adverse, significant or negligible, and temporary or permanent.

²⁹ Defined as an area in which there may be ecological receptors subject to changes and subsequent effects as a result of the Proposed Development.

³⁰ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

Where appropriate, mitigation measures will be recommended within the EclA to remedy any adverse impacts and measures to enhance the local ecology will also be incorporated. An assessment of cumulative and residual effects will also be undertaken and reported within the EIA Report.

6.5.1 Biodiversity Net Gain (BNG)

A BNG assessment shall be undertaken for the Proposed Development. BNG is a process whereby development leaves biodiversity in a measurably better state than before. The Habitat Condition Assessment (HCA) data will be combined with habitat distinctiveness, connectivity and strategic significance to determine biodiversity units per habitat polygon. The relative biodiversity value per polygon will be indicated by calculating the biodiversity units per hectare (BU/ha). Any irreplaceable habitats identified, including Ancient Woodland and good/moderate condition blanket bog, are not included in the optioneering 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.

6.5.2 Surveys

The Phase 1 Habitat Survey shall consist of classifying and mapping habitats in accordance with the Joint Nature Conservation Committee (JNCC) method³¹ and will be 'extended' to include consideration of the likely presence of protected or otherwise notable species in line with the CIEEM³¹ guidelines for EclA.

For each area of habitat mapped during the Phase 1 Habitat Survey a Habitat Condition Assessment will be undertaken by Ramboll. The HCA³² will be undertaken following SSEN Transmission Guidance³³ and involve scoring each habitat area using established criteria. If a habitat passes all criteria it is considered to be in good condition, if it fails one criterion it is considered to be of moderate condition and if it fails two or more criteria it is considered to be of poor condition. The condition of each habitat will be used in the BNG analysis (Refer to **Section 6.5.1**).

The NVC surveys will be completed in line with NVC survey guidelines (Rodwell, 2006³⁴), classifying communities in accordance with the NVC system (Rodwell, 1991 – 2000, 5 volumes³⁵). The purpose of these surveys is to identify protected habitats, consisting of potential GWDTEs, Annex 1 habitats under the EU Habitats Directive and those with protection under the Scottish Biodiversity List (SBL).

The protected species survey will consist of a detailed search for field signs, in suitable habitat, and in accordance with standard survey guidance for badger *Meles meles*³⁴, otter *Lutra lutra*³⁵, and water vole *Arvicola amphibius*³⁶. In addition, a habitat suitability assessment (HSA) will be undertaken for bat³⁷, red squirrel *Sciurus vulgaris*³⁸ and pine marten *Martes martes*³⁹, but will not include a detailed search for field signs, to allow for a rapid assessment of the site.

Where new accesses are proposed outwith the survey buffer distances noted above, or existing access routes require notable upgrade, habitat and species surveys will be extended or updated to cover these proposed access routes.

³¹ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester

³² At the time of writing Habitat condition surveys were ongoing. Full details will be provided as part of the EIA

³³ SSEN Transmission, Biodiversity Net Gain Toolkit User Guide - TG-NET-ENG-526, October 2020

³⁴ Scottish Badgers, Badger Surveying, <http://scottishbadgers.org.uk/badger-surveying.asp> [Last accessed 1st October 2020]

³⁵ Chanin, P. (2003), Monitoring the otter *Lutra lutra*, Conserving Natura 2000 Rivers Monitoring Series No 10, Peterborough: English Nature.

³⁶ Strachan, R. (2012), Water Vole Conservation Handbook, Third Edition, Wildlife Conservation Research Unit.

³⁷ Collins, J. (ed.) (2016), Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed). The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1.

³⁸ Gurnell, J. et al (2001), Practical Techniques for Surveying and Monitoring Squirrels. Edinburgh: Forestry Commission.

³⁹ NatureScot. (2020), Standing Advice for Planning Consultations, Protected Species Pine Marten. <https://www.nature.scot/sites/default/files/2020-06/Species%20Planning%20Advice%20-%20pine%20marten.pdf>. [Last accessed 1st October 2020]

6.6 Issues Scope Out

6.6.1 General

It is considered that all ecological features identified within this report could be affected by inappropriate lighting, noise, dust and visual disturbance caused by construction activities, however it is considered reasonable to expect that these potential effects are managed through standard practice construction methods and guidance. In addition, a Construction Environmental Management Plan (CEMP) as well as SSEN Transmission's General Environmental Management Plan (GEMP) and Species Protection Plans (SPPs) will be produced, which will capture all mitigation measures required in respect of ecological features, both as a result of the outcome of the EclA and in order to comply with relevant legislation mentioned above, to be implemented on Site. The implementation and audit of these measures will be overseen by an ECoW. With the adherence to a CEMP and GEMP, as overseen by an ECoW, it is not considered that there is potential for significant impacts. Therefore, no further assessment is proposed.

6.6.2 Designated sites

There are four designated sites lie within 10 km of the Proposed Development as outlined in **Table 6.2**. Three of these are located across a large waterbody, i.e., Loch Awe or Loch Fyne from the Proposed Development and no impact pathways exist. The only designated site linked directly by land with the Proposed Development is Glen Shira SAC. However, it is located in a different glen to the Proposed Development with a ridgeline in between meaning that there is no hydrological connectivity to this site that is designated for its oak woodland. Therefore, it is not considered that there is potential for likely significant impacts, and therefore no Habitat Regulations Assessment is required for consideration of impacts on this or Loch Etive Woods SAC.

6.6.3 Species

While the Proposed Development would cross over a number of watercourses, the OHL design would aim to locate towers further than 30 m from watercourses where possible. It is considered that general mitigation measures to protect watercourses are included within the CEMP on the assumption of the presence of important ecological features (including fish and freshwater pearl mussel). These measures will be consistent with the requirements of SSEN Transmission's GEMP 1 Watercourse Crossings. Provided the CEMP is implemented as required, it is considered likely that no significant impacts will occur to the features from the Proposed Development.

6.7 Summary

This Scoping Report has presented the likely ecological baseline of the Proposed Development and undertaken an initial assessment of the potential impacts of the Proposed Development. This has enabled the scope for the EIA to be refined.

Desk study information has identified statutory designated sites within 10 km of the Proposed Development. Due to the distance of these sites to the Proposed Development, and a lack of a pathway for impacts identified, it is possible to scope these sites out from further assessment.

Baseline surveys shall be undertaken in spring 2022 to provide an in depth understanding of the surrounding habitats. The Proposed Development would cross areas of coniferous plantation woodland, broadleaved (ancient) woodland and open grassy habitats dominated by marshy grassland. These wet habitats thus have potential for GWDTEs and may be affected by excavation and vegetation clearance works during construction. These potential effects will be considered in further detail within the EIA Report to establish the potential for significant impacts and identify appropriate mitigation.

Suitable habitat for otter, water vole, bat, red squirrel, pine marten, reptiles is likely within the Proposed Route. The EIA Report will identify where species require to be safeguarded through further pre-construction surveys

informing appropriate mitigation prior to construction. This information can be captured and administered through a CEMP and SSEN Transmission's Species Protection Plans (SPP's) prior to and during construction and audited by an ECoW during and post-construction.

Red squirrel and pine marten may be negatively affected by the Proposed Development during construction and operation. This could occur where areas of coniferous woodland are crossed by the Proposed Development. This is considered to result in permanent habitat loss, fragmentation and severance. Potential GWDTEs, are likely to occur in parts of the Proposed Route and could be affected by excavation and vegetation clearance works. These potential effects will be considered in further detail within the EIA Report to establish the potential for significant impacts and identify appropriate mitigation.

7. ORNITHOLOGY

7.1 Introduction

The EIA will consider the potential effects of the Proposed Development on ornithological features along the proposed OHL and within the ecological zones of influence for species identified as important ornithological features. Evaluation of the existing baseline environment will be made through a combination of desk-based study, field surveys and consultation.

The EIA chapter will assess the potential effects on ornithological interests resulting from the construction and operation phase of the Proposed Development. The specific objectives of the assessment would be to:

- Identify where there is potential for significant effects on designated sites (for birds);
- Detail the presence/possible presence of protected bird species and other species of particular conservation value;
- Describe the mitigation measures that have been committed to in order to avoid or reduce impacts; and
- Assess the significance of residual effects that are likely to remain following implementation of mitigation and restoration measures and describe if any result in a significant impact on ornithological features.

7.2 Baseline Conditions

7.2.1 Desk Study

A desk study has been undertaken using the NatureScot SiteLink⁴⁰ website to identify designated nature conservation sites (10 km for sites of international⁴¹ importance and 2 km for those of national⁴² importance), Special Protection Areas (SPAs), which are of international importance, and Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs) of national importance. In addition, a search for publicly available biological records was undertaken within 2 km of the Proposed Development.

In order to augment the field survey data, golden eagle *Aquila chrysaetos* Range Reports including PAT⁴³ modelling has been obtained from NatureScot for nearby territories and geotag data has been purchased. The geotag data are from a currently active tag on a young adult female which has recently established itself as the dominant female within a golden eagle territory close to the Proposed Route.

Statutory Designated Sites

Only one statutory designated site for ornithology occurs within 10 km of the Proposed Route. The Glen Etive and Glen Fyne SPA, designated for breeding golden eagle (**Figure 7.1**) is crossed by the Proposed Development. Under the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 (Habitat Regulations) it is necessary to consider whether the Proposed Development will have likely significant effects upon the SPA. A Habitat Regulations Appraisal (HRA) will be undertaken during the EIA reporting process to identify any likely significant effects⁴⁴ of the Proposed Development on the SPA.

Non-statutory Designations

There are no non-statutory designations for ornithological interest with potential connectivity to the Proposed Development.

⁴⁰ NatureScot. SiteLink. <https://sitelink.nature.scot/home> [Accessed February 2022]

⁴¹ i.e., Special Protection Areas (SPAs) and Ramsar sites

⁴² i.e., Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs)

⁴³ PAT – predicting aquila territory modelling

⁴⁴ Without mitigation, as per updated legislation.

7.2.2 Field Survey

Field surveys commenced in February 2018 and are ongoing until February 2022.

The surveys include a Vantage Point (VP) survey, Black Grouse *Lyrurus tetrix* Survey and Breeding Bird Survey; (hereafter collectively referred to as the ornithological surveys).

Vantage Point Survey

The VP survey consisted of undertaking monthly watches from eight locations for a full year covering a wider Study Area between February 2018 until January 2019. A new round of VP surveys commenced in March 2021 and is ongoing until February 2022. The new round of surveys commenced with five of the original eight locations, further reducing to three locations in May 2021 to cover solely the Proposed Route. These survey locations are shown on **Figure 7.2**.

The VP locations were initially chosen to focus on all proposed OHL route options with an additional survey area of 500 m (and up to 2 km for larger species, e.g. golden eagle), following best practice methods⁴⁵⁴⁶. Once surveys restarted in 2021, Glen Shira was no longer a consideration and the two VP locations overlooking it were not restarted. Similarly, the southernmost VP was also not restarted which left three VPs overlooking Glen Aray and two overlooking the open moorland between Glen Aray and Loch Awe. Once the routing process had identified the Proposed Route within Glen Aray, VP surveys continued only at the three locations overlooking it. These will continue until February 2022 at which point two full years of data will have been collected from these locations overlooking the Proposed Route. To date, the following target species have been recorded close to, or crossing the Proposed Development:

- Whooper swan *Cygnus cygnus*;
- Greylag goose *Anser anser*;
- White tailed eagle *Haliaeetus albicilla*;
- Golden eagle *Aquila chrysaetos*;
- Hen harrier *Circus cyaneus*;
- Merlin *Falco columbarius*; and
- Goshawk *Accipiter gentilis*.

The following additional species were recorded during the 2018-2019 surveys from VP locations not overlooking the Proposed Development.

- Red throated diver *Gavia stellata*;
- Black-throated diver *Gavia arctica*;
- Red kite *Milvus milvus*;
- Osprey *Pandion haliaetus*;
- Common buzzard *Buteo buteo*; and
- Peregrine *Falco peregrinus*.

Of the bird species identified as flying close to, or crossing the Proposed Development, breeding territories of all but the whooper swan and greylag goose have been identified. The whooper swan records are of birds

⁴⁵ NatureScot. 2016. Guidance - Assessment and mitigation of impacts of power lines and guyed meteorological masts on birds.

<https://www.nature.scot/guidance-assessment-and-mitigation-impacts-power-lines-and-guyed-meteorological-masts-birds> [Accessed February 2022]

⁴⁶ Scottish Natural Heritage. March 2017. Recommended bird survey methods to inform impact assessment of onshore wind farms. Version 2.

<https://www.nature.scot/sites/default/files/2018-06/Guidance%20Note%20-%20Recommended%20bird%20survey%20methods%20to%20inform%20impact%20assessment%20of%20onshore%20windfarms.pdf>

[Accessed February 2022]

overflying the area on migration, whilst the greylag goose records are a combination of overflying migratory species and a small group of feral resident birds occurring within Glen Aray.

The closest known white-tailed eagle nest site lies approximately 5 km from the Proposed Development and there are three golden eagle territories which border the Proposed Development, although based on review of the Potential Aquila Territory (PAT) Modelling data the Proposed Route does not intersect with these territories. Of the three territories, one is within the Glen Etive and Glen Fyne SPA, with the currently active nest site being situated approximately 5 km from the Proposed Route. Activity by both species has been limited with no white-tailed eagle flights and only four golden eagle flights crossing the Proposed Route during the 2018-2019 surveys and a similarly low level of activity recorded to date during the 2021 survey visits. This is likely due to the lower altitude at which the Proposed Route runs being a less preferable habitat for golden eagles.

Of the three other raptor species listed, none crossed the Proposed Route between 2018-2019. In 2021, hen harrier and merlin were occasionally active close to the Proposed Route, although apparently nesting at least 1 km from it. The likely goshawk territory lies within 500 m of the Proposed Route but no observations of the species flying close to or crossing the Proposed Development have been recorded.

These key locations are shown in Confidential **Figure 7.3**.

Black Grouse Survey

The black grouse survey was undertaken preceding the three breeding bird surveys in spring 2021. Methods followed those outlined in Gilbert *et. al.* 1998^v with four survey locations along Glen Aray used for watching and listening for the species. These survey locations were chosen to provide coverage of Route DE, the Preferred Route at the time, but surveys have also provided coverage of Route Band any sightings would have been noted.

One black grouse lek was identified during the surveys, approximately 1.5 km outwith the Proposed Route, in open moorland northeast of Ladyfield Plantation. The survey locations are shown on **Figure 7.2**.

Breeding Bird Survey

A Breeding Bird Survey (BBS) was undertaken within the Proposed Route in spring 2021. Three visits were undertaken between April and July. Methods followed an adapted method of Brown and Shepherd (1993)^v. The most numerous species recorded was willow warbler, with high numbers of tree pipit, lesser redpoll, whitethroat and siskin all recorded. Common species including wren, chaffinch, robin and song thrush were recorded in most habitats. Woodland specialists such as nuthatch, redstart and wood warbler were recorded in the oak woodland towards the south of the Proposed Route and meadow pipit were recorded on the higher, open ground and on areas of felled and recently planted conifers. Later visits also recorded mixed flocks of tits, including great, blue, coal and long-tailed tits.

Additional Surveys

Potential additional surveys that might be undertaken would be breeding diver surveys and breeding raptor surveys in the wider area, however it is not thought that either of these are necessary due to the survey information collected to date. No lochs or lochans potentially suitable for breeding divers lie within 2 km of the Proposed Development and the handful of diver flights recorded in 2018 were all far from the Proposed Development. No additional breeding raptor surveys were undertaken in 2021 as the wider survey area covered by the 2018 surveys means that there the location of key territories in the wider area are already known.

7.3 Sensitive Receptors

As a result of the information provided by the desk-based study and field surveys, the following ornithological features are considered to be of sufficient sensitivity to warrant inclusion in the EIA:

- Glen Etive and Glen Fyne SPA. This area is protected under the European Commission Council Directive 2009/147/EC (Birds Directive), which places importance on the protection of habitats for endangered and

migratory species. Designated sites are also protected under Council Directive 92/43/EEC (Habitats Directive);

- White-tailed eagle, included on Schedule 1 of the Wildlife and Countryside Act 1981 and a red-listed species of conservation concern;
- Golden eagle, included on Schedule 1 of the Wildlife and Countryside Act 1981;
- Hen harrier, included on Schedule 1 of the Wildlife and Countryside Act 1981 and a red-listed species of bird of conservation concern⁴⁷;
- Merlin, included on Schedule 1 of the Wildlife and Countryside Act 1981 and a red-listed species of conservation concern;
- Goshawk, included on Schedule 1 of the Wildlife and Countryside Act 1981 and a red-listed species of conservation concern;
- Migratory and wintering wildfowl, susceptible to collision with powerlines; and
- Black grouse, a red-listed species of conservation concern.

7.4 Potential Significant Effects

The assessment will consider the potential for significant effects associated with:

- Indirect effects on Glen Etive and Glen Fyne SPA from disturbance of breeding golden eagles;
- the killing, injury or temporary disturbance (or displacement) of nationally and internationally protected species of bird during construction or through collision with conductors or the earth wire during the operational phase of development; and
- Cumulative effects from other developments, either built or proposed, within the zone of influence for ornithological features identified as sensitive receptors of the Proposed Development. Potential impacts of the Proposed Development would be assessed both in addition and in-combination with the impacts identified from other developments to identify the potential for significant cumulative effects.

7.5 Assessment Scope and Methodology

The ornithological impact assessment would be completed in accordance with the CIEEM Ecological Impact Assessment Guidance⁴⁷. The assessment will use the ornithological baseline to identify the IEFs that could be affected by the construction of the Proposed Development. IEFs will be assigned a geographic level of importance based on their conservation status and population/assemblage trends and other relevant criteria (including size, naturalness, rarity and diversity). Details of the Proposed Development will then be used to assess what level of effect each feature is likely to receive and whether that impact will be beneficial or adverse, significant or negligible, and temporary or permanent. Where appropriate, mitigation measures would be recommended to remedy any adverse impacts. An assessment of residual effects and cumulative effects would then be undertaken and reported within the EIA Report.

7.5.1 Collision Risk Methodology

As per the SSEN Transmission Ornithology Methods for Transmission Developments Guidance, the requirement for, and method of Collision Risk Modelling will be agreed with NS.

⁴⁷ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

7.5.2 Methodology for Provision of Information for Appropriate Assessment

Where the Proposed Development is considered likely to have a significant effect on an SPA, there is a requirement for the Scottish Ministers (in consultation with NS) to complete an Appropriate Assessment as part of the HRA process.

Based on the data collected from the consultation and desk-based study, together with a review of relevant data already obtained on the Site, an HRA screening assessment of the Proposed Development in relation to the potential for Likely Significant Effects on the Glen Etive and Glen Fyne SPA will be required. The HRA will utilise data pertaining to golden eagle presented in this report as well as external data sources such as confidential golden eagle range reports provided by NS. A study to inform any Appropriate Assessment would be provided as part of the EIA, taking account of the potential for connectivity with the SPA.

7.5.3 Survey

No further survey is considered necessary at this time.

7.6 Issues Scoped Out

7.6.1 Barrier Effects

A barrier effect would be where the vertical configuration of wires and towers creates an actual or perceived barrier which bird species may not cross, or at the very least would need to habituate to crossing.

There is an existing 132 kV OHL in proximity to the Proposed Route, running parallel for much of its length. The new Inveraray to Crossaig 275 kV OHL lies immediately to the south of the Proposed Development and replaced a slightly smaller 132 kV OHL. This suggests that birds would habituate/have already habituated to the presence of an OHL and would not treat it as a barrier. In addition, birds are considered likely to avoid the operational structure, which will be highly visible within the surrounding, predominantly open landscape. Therefore, the effect of this impact is of negligible significance.

7.6.2 Electrocutation

Bird electrocution on OHLs is possible either where a bird can touch a conductor while it is perched on an earthed tower, touch a conductor and the earth wire simultaneously or touch two conductor wires simultaneously. The configuration of the wires and towers of the Proposed Development means that none of these scenarios are possible as the gaps between conductors and perch points would be greater than any bird wingspan.

7.6.3 Habitat Loss (Construction and Operational Phase) outwith Glen Etive and Gen Fyne SPA

Both permanent and temporary habitat loss and habitat modification due to vegetation management or hydrological change would be assessed in the chapter dealing with non-avian ecology. The levels of habitat loss and / or modification associated with tower and track construction and operational are low and are not considered to represent a likely significant loss and / or modification of bird habitat.

7.6.4 Disturbance (Operational Phase)

When operational, the Proposed Development would require very occasional visits by site personnel both on foot and in vehicles for maintenance activities. While the Proposed Development may also result in disturbance arising from noise and visual effects associated with the wires, the magnitude of these potential impacts is considered too low to cause a significant effect.

7.7 Summary

The scoping exercise has reviewed the ornithological features within the zone of influence of the Proposed Development and has identified those that have the potential to be impacted. These include the Glen Etive and Glen Fyne SPA, Schedule 1 species, such as golden and white-tailed eagle, and birds of conservation concern, such as black grouse. The likely direct and indirect potential impacts of the Proposed Development on these features would be assessed and mitigation measures, where appropriate, would be proposed to prevent, reduce or offset any likely significant adverse effects identified. Cumulative effects from other developments would also be considered in relation to the Proposed Development.

8. GEOLOGY AND SOIL

8.1 Introduction

This EIA chapter will assess the potential effects relating to geology and soils in relation to the construction and operation of the Proposed Development.

8.2 Baseline Conditions

A desk study and data search will be undertaken to establish the baseline environment. A review of the British Geological Survey's (BGS) 'Geology of Britain Viewer' website⁴⁸ shows that the superficial deposits underlying the northern half of the Proposed Development (at 1:625,000 scale) comprise Devensian Till (Diamicton). A smaller area of Devensian Till is also shown underlying the southern end of the Proposed Development. This is shown on **Figure 8.1** and on **Figures 8.2A to 8.2C**. The 1:50,000 scale mapping shows that the Till-Diamicton comprises 'hummocky (moundy) glacial deposits – diamicton, sand and gravel'. Smaller areas of alluvium, comprising clays, silts and sands are also present.

No superficial deposits are shown underlying the remainder of the Proposed Route. No peat deposits are shown.

The underlying bedrock across the northern part of the Proposed Development is mapped as unnamed extrusive rocks, neoproterozoic - mafic lava and mafic tuff, belonging to the Tayvallich Volcanic Formation. The remainder of the Proposed Route is shown as being underlain by metamorphic psammite, semipelite and pelite belonging to the Argyll Group. Bands of unnamed igneous intrusions are shown within the Argyll Group rocks, orientated south-west to north-east, and comprise either neoproterozoic mafic or felsic rocks. This is shown on **Figure 8.3** and on **Figures 8.4A to 8.4C**.

A review of the SNH (now NatureScot) Carbon Rich Soil and Deep Peat and Peatlands Habitat Map (2016)⁴⁹, as illustrated in **Figure 8.5** (and detailed in **Figures 8.6A to 8.6C**), confirms that areas of peat and organic material are present across the Proposed Route.

The majority of the Proposed Development is shown to comprise Class 5 soils, which is defined as peat soil but with no peatland vegetation. Smaller areas of Class 2 soils, which are defined as supporting nationally important carbon-rich soils, deep peat and priority peatland habitat, are shown present in the open ground in the northern and southern half of the Proposed Development. These are soils of potentially high conservation value and restoration potential.

Smaller areas mapped as Class 3 and Class 0 mineral soils are shown to be present in the central areas of the Proposed Development. Class 3 soils are predominantly peaty soils with some heath vegetation, whilst Class 0 soils are areas generally considered to be absent of peat and carbon rich soils.

8.3 Sensitive Receptors

The main receptor that could be potentially affected by the Proposed Development is peat and carbon-rich soils.

8.4 Potential Significant Effects

The Proposed Development has the potential to result in the disturbance, loss or erosion of peat. The design of the Proposed Development would avoid the presence of peat and carbon rich soils where practicable. Where this is not possible the design will consider minimising the potential effects on peat through avoiding areas of deeper peat, and also implementing suitable mitigation measures for reducing peat generation, and also

⁴⁸ British Geological Survey. Geology of Britain viewer (classic) <https://mapapps.bgs.ac.uk/geologyofbritain/home.html> [Accessed January 2022]

⁴⁹ Scotland's soils. Carbon and peatland 2016 map https://map.environment.gov.scot/Soil_maps/?layer=10 [Accessed January 2022]

appropriate measures for storage and re-using carbon rich soils. This will be summarised as part of an Outline Peat Management Plan (OPMP).

There is also potential for mobilisation of contaminated soils/bedrock as part of the construction phase operations.

Based on the baseline conditions described above, it is anticipated that the following potentially significant effects could occur as a result of the Proposed Development:

- Potential for loss/disturbance to peat and carbon-rich soils; and
- The peat erosion potential of any peat disturbed may also be exacerbated as a consequence of localised drying of the peat and resultant oxidation.

There is also potential for associated hydrological impacts through the excavation of soil and bedrock during the construction phase of the Proposed Development which could cause localised disruption and interruption to groundwater flow. Interruption of groundwater flow would potentially reduce the supply of groundwater to GWDTEs thereby causing an alteration/change in the quality or quantity of and/or the physical or biological characteristics of the GWDTEs. Contamination of groundwater may also cause physical or chemical contamination to the GWDTEs. These potentially significant effects would be assessed as part of the ecology and water environment chapters.

8.5 Assessment Scope and Methodology

The assessment of effects will be carried out in accordance with the principles contained within SSEN's GEMPs as well as industry guidance documents produced by the Scottish Government, SEPA, NatureScot relating to peat management and assessment.

The EIA Report will include an assessment of potential effects on geological and peat resource from the construction and operation of the Proposed Development. The outcomes of the peat study will be included as a technical appendix to the EIA Report and will include a detailed map of peat depths showing all the built elements overlain to demonstrate how the development avoids areas of deep peat.

The Study Area in respect of potential impacts on peat and carbon-rich soils, considers land within the Proposed Route.

It should be noted that no peat survey has been undertaken to inform the baseline conditions to date. Peat probing will be undertaken in accordance with good practice guidance and relevant methodologies⁵⁰. This will include a coarse resolution grid across the Proposed Development area, based on a 100m grid (subject to access). The peat depth data will then be used to inform the design of the Proposed Development.

If peat is confirmed, a higher resolution peat probing survey will be undertaken, to include other proposed infrastructure such as at tower locations and access tracks. The further peat probing will ensure that all infrastructure locations have sufficient peat depth information to support relevant studies on peat instability, peat excavation and reuse.

The peat survey will also record and confirm the geological site conditions based on rock exposures present. No intrusive ground investigation is proposed.

An OPMP will be produced which will include:

- A summary of the peat conditions;

⁵⁰ Scottish Government, Scottish Natural Heritage, SEPA (2017) Peatland Survey. Guidance on Developments on Peatland, on-line version only, <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2018/12/peatlandsurvey-guidance/documents/peatland-survey-guidance-2017/peatland-survey-guidance-2017/govscot%3Adocument/Guidance%2Bon%2Bdevelopments%2Bon%2Bpeatland%2B-%2Bpeatland%2Bsurvey%2B-%2B2017.pdf> [Accessed January 2022]

- Quantities of acrotelmic and catotelmic peat which will be excavated and where it will be re-used during reinstatement;
- Design of site works to minimise peat removal;
- Site reinstatement including use of peat in site restoration;
- Treatment, re-use and handling of excavated materials; and
- Site management plans/protocols for storage of peat.

A Peat Landslide Hazard Risk Assessment (PLHRA) will be undertaken which will include:

- The character of the peatland within the application boundary including thickness and extent of peat, and an understanding of site hydrology and geomorphology,
- An assessment of evidence for past landslide activity and present-day instability e.g. pre-failure indicators, a qualitative or quantitative assessment of the potential for or likelihood of future peat landslide activity (or a landslide susceptibility or hazard assessment) and identification of receptors (e.g. habitats, watercourses, infrastructure, human life) exposed to peat landslide hazards;
- A site-wide qualitative or quantitative risk assessment that considers the potential consequences of peat landslides for the identified receptors; and
- Appropriate mitigation and control measures to reduce risks to acceptable levels such that the Proposed Development is developed safely and with minimal risks to the environment.

8.6 Issues Scoped Out

All operational impacts will be scoped out of the assessment as there are not likely to be any new effects on sensitive receptors following the construction phase.

Based on the current and historic land use of the Proposed Development, which is greenfield and undeveloped, it is not considered that contaminated land is likely to be present and can be scoped out of the assessment.

8.7 Summary

It is proposed that the geology and soils chapter will review the geological conditions at the Proposed Development, specifically with regard to peat and carbon-rich soils. Other issues such as contaminated land are to be scoped out of the assessment based on the current and likely historical land uses.

The assessment will consider the potential effects on peat and carbon rich soils, and measures to minimise its disturbance, erosion and loss as part of the Proposed Development. An OPMP will be produced as an appendix to the EIA Report which will include the materials balance and mitigation measures to manage peat during construction and operation of the Proposed Development. A PLHRA will also be undertaken to determine whether the Proposed Development has the potential to affect stability of peat, and outline measures to mitigate these impacts.

9. WATER ENVIRONMENT

9.1 Introduction

This chapter will assess the potential effects relating to Hydrology and Hydrogeology in relation to the construction and operation of the Proposed Development. This chapter is supported by **Figure 9.1**.

9.2 Baseline Conditions

9.2.1 Surface Water Resources

The Proposed Route is located wholly within the catchment of the River Aray (SEPA waterbody ID 10224). The River Aray is assessed by SEPA as being of 'Good' overall status under the Water Framework Directive classification scheme and being of 'High' ecological status and 'Good' Physico-Chemical status.

The Proposed Route runs in a southerly direction from the proposed Creag Dhubh Substation, predominantly to the west of the River Aray. The River Aray flows in a southerly direction and eventually discharges to Loch Fyne approximately 3 km south of the most southerly extent of the Proposed Route.

The northern extent of the Proposed Route crosses the River Aray in a south easterly direction from the proposed Creag Dhubh Substation. The Proposed Route then runs parallel to the River Aray in a southerly direction to Balantyre Wood veering away from the A819 and River Ray to the west near Stronmagachan. The Proposed Route crosses a number of tributaries that flow in an easterly direction to the River Aray. One of the larger tributaries is the Erallich Water (SEPA waterbody ID 10225) located within the southern extent of the Proposed Route and is assessed by SEPA as being of 'Good' overall status. No other tributaries within the Proposed Route are assessed under the Water Framework Directive.

The Proposed Route is not situated within a SEPA Surface Water Drinking Water Protected Area (DWPA) and outside of potential hydrological connection to such areas. The nearest Surface Drinking Water Protected Area is situated approximately 650 m to the north east, to the north of the River Aray catchment, and is therefore not in hydrological connection to the Proposed Development. There is a DWPA located approximately 2 km to the south west of the Proposed Route but is also not in hydrological connection to the Proposed Development.

9.2.2 Flood Risk

Low lying areas in close proximity to the River Aray, within the Proposed Route, are assessed by SEPA to be at risk of flooding (including areas with a High likelihood (areas assessed to be at a 1 in 10 (10%) annual probability of flooding). Areas of the River Aray flood plain which are assessed by SEPA to be at a High likelihood at risk of flooding are situated downslope and to the east of the Proposed Route, on lower lying areas of Glen Aray. The Erallich Water and an unnamed watercourse near Drimfern are also assessed as being at High likelihood of flooding. The Proposed Development crosses directly over these watercourses.

Such areas are confined to land in close proximity to the River Aray, Eralich Water, and tributaries of the River Aray. Therefore, detailed flood risk assessment is considered unlikely to be applicable to the Proposed Development. Where watercourse crossings are to span larger rivers, crossings shall be designed to accommodate a 1 in 200 (0.5%) annual probability flood inclusive of a climate change allowance at the detailed design stage.

9.2.3 Geology

According to British Geological Survey (BSG) 1:625 k⁵¹ mapping the Proposed Route is underlain at the northern and southern tips by superficial geology of Till (diamicton). No records of superficial geology are presented by the BGS for the remaining length of the Proposed Route.

⁵¹ British Geological Survey. Geology 625k mapping. <https://www.bgs.ac.uk/datasets/bgs-geology-625k-digmapgb/> [Accessed February 2022]

From north to south, approximately 2.5 km of the Proposed Route is further underlain by solid geology of Unnamed Extrusive Rocks, Neoproterozoic (mafic lava and mafic tuff); the remainder of the route is underlain by bedrock of the Argyll Group (psammite, semipelite and pelite) which is crossed by an unnamed igneous intrusion, Late Silurian To Early Devonian (felsic-rock).

9.2.4 Hydrogeology

According to BGS 1:625 k hydrogeological mapping the Proposed Route is underlain by aquifers of a Low Productivity, in which flow is virtually all through fractures and other discontinuities. Aquifers underlying the Proposed Route are considered unlikely to support public water supplies, or to have the potential to do so. A number of private water supplies are located within the Proposed Route (section 9.2.6). The source of these supplies will be investigated through further survey and / or questionnaires.

Groundwater Dependent Terrestrial Ecosystems

Ecological surveying shall identify the potential presence of GWDTEs Hydrological assessment shall be carried out to determine the extent to which such habitats are dependent on groundwater supplies, and shall assess the sensitivity of habitats to alterations in groundwater flows due to construction activities. Excavations in excess of 1 m proposed for construction purposes, within 250 m areas of Moderate or High groundwater dependency, shall be subject to a qualitative/quantitative assessment of their potential impact on habitats.

9.2.5 Water Resources

ABC and Scottish Water supplied a list of PWSs in the area. There are six PWSs within the Proposed Route, and an additional two PWSs within 250 m of the Proposed Route. If the Proposed Development is within 250 m of any PWS it will be subject to further qualitative assessment in the EIA Report.

9.3 Sensitive Receptors

The sensitive receptors considered in the EIA include:

- Surface water bodies (quality and quantity);
- Ground water bodies (quality and quantity);
- PWSs and abstractions; and
- GWDTEs.

9.4 Potential Significant Effects

The following discussion of potentially significant effects assumes that all embedded mitigation by design and appropriate construction methodologies are in place.

The Proposed Development may affect local hydrology and hydrogeology in a number of ways, including:

- Temporary (construction phase) pollution of surface watercourses and groundwater, and subsequent impacts on quality of private water supplies and other abstractions. There is a potential risk of sediment generation associated with tower and access track construction; and dewatering from borrow pits (if required). There is also the potential for chemical pollution from construction vehicle/equipment fuels and lubricants and use of cement for foundation construction. The risk is increased should construction be taking place in a flood risk area during a flood event.
- Interruption of supply or impacts on the quality of PWS/abstractions and GWDTEs associated with temporary stone tracks and tower foundations affecting subsurface flows and hydraulic connectivity. Where these sensitive receptors are identified within 250 m of the tower foundations, or 100 m of temporary access tracks a technical report will be prepared to accompany the EIA Report to demonstrate how the abstraction or GWDTEs would be protected.

9.5 Assessment Methodology

It is proposed that a focussed hydrological and hydrogeological impact assessment is provided. The assessment will be used to identify key interactions between the Proposed Development and the water environment. In doing so, the EIA Report chapter will identify the requirement for construction mitigation measures and provide an initial assessment of the requirements under the Controlled Activities Regulations (CAR) ⁵².

The proposed technical reports to accompany the EIA Report are as follows and will inform design and construction mitigation:

A: Watercourse Crossing Assessment: A site survey of existing water features will be undertaken and a map of the location of all proposed engineering activities in the water environment provided. A systematic table detailing the justification for the activity; possible crossing types and level of CAR authorisation; and how any adverse impact will be mitigated will be included, accompanied by photography and dimensions. This will be presented as an appendix to the Proposed Development Chapter. The crossings for the Proposed Development are anticipated to be related to access tracks.

B: GWDTEs Assessment: Where GWDTEs are identified within 250 m of the tower foundations or 100 m of temporary access tracks, a technical report will be prepared to accompany the EIA Report to demonstrate how the GWDTEs would be protected (i.e. prevention of the development of preferential pathways for groundwater and significant drying of GWDTEs), in accordance with SEPA Guidance Note 31 (LUPS-GU31) ⁵³. This will be presented as an appendix to the Ecology Chapter.

C: Groundwater Abstraction Protection: Where groundwater private water supplies or other abstractions are identified within 250 m of the tower foundations or borrow pits, or 100 m of temporary access tracks a technical report will be prepared to accompany the EIA Report to demonstrate how the abstraction will be protected, in accordance with SEPA Guidance Note 31 (LUPS-GU31). This will be presented as an appendix to the Proposed Development Chapter.

9.6 Summary

As discussed above, it is proposed that a focused hydrological and hydrogeological impact assessment be provided. Technical reports will be provided to inform the design (primary mitigation) and to ensure that the requirements of the statutory consultees are fully met as follows:

- Watercourse Crossing Assessment;
- GWDTE Assessment (if required); and
- Groundwater / PWS Abstraction Protection (if required).

⁵² The Water Environment (Controlled Activities) (Scotland) Regulations 2011 <https://www.legislation.gov.uk/ssi/2011/209/contents/made> [Accessed February 2022]

⁵³ SEPA. September 2017. Land Use Planning System SEPA Guidance Note 31. <https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions-and-groundwater-dependent-terrestrial-ecosystems.pdf> [Accessed February 2022]

10. TRAFFIC AND TRANSPORT

10.1 Introduction

This section sets out the proposed approach to the assessment of potential effects of the Proposed Development on access, traffic and transport during the construction phase.

A Transport Assessment (TA) will be provided to review the impact of transport related matters associated with the Proposed Development. This will be appended to the EIA Report and will be summarised into a Transport and Access assessment.

The following policy and guidance documents will be used to inform the Transport and Access assessment:

- Transport Assessment Guidance (Transport Scotland, 2012);
- The Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment (IEA), 1993);
- SPP (Scottish Government, 2014); and
- Argyll & Bute Council Local Development Plan (2015).

10.2 Baseline Conditions

Traffic survey data for use in the assessment would be obtained from the UK Department of Transport (DfT) traffic survey database ⁵⁴for the following links:

- A83 to the east of Inveraray (Site Ref 50771)
- A83 to the southwest of Inveraray (Site Ref 10765); and
- A819 to the south of Cladich (Site Ref 92228).

In addition to traffic flow data, traffic accident data for a five year period for the A83 within Inveraray and for the A819 between Inveraray and Cladich will be obtained from the public website source, [Crashmap.co.uk](https://www.crashmap.co.uk).

A site visit will also be undertaken to review the route and obtain further baseline data and characteristics.

10.3 Sensitive Receptors

Sensitive receptors to be considered in the assessment will include communities within the Study Area and users of the road links. The proposed Study Area will include the A83 to the south and east of Inveraray and the A819 from Inveraray to Cladich. All receptors, both communities and users will be considered in detail.

10.4 Potential Significant Effects

Potential impacts that may arise during the assessment may include the following for users of the road and those resident along the delivery routes:

- Severance;
- Driver delay;
- Pedestrian delay;
- Pedestrian amenity;
- Fear and intimidation; and
- Accidents and safety.

⁵⁴ Department for Transport. Road traffic statistics .<https://roadtraffic.dft.gov.uk/#/6/55.254/-6.053/basemap-regions-countpoints> [Accessed February 2022]

The impacts on receptors within the Study Area will be reviewed during the construction phase, with a peak construction period assessment undertaken. This will review the maximum impact and presents a robust assessment of the effects of construction traffic on the local and trunk road networks.

The effects that will be considered will be based upon percentage increases in traffic flow and reviewed against the impacts noted above.

10.5 Assessment Scope and Methodology

The Guidelines for the Environmental Assessment of Road Traffic (IEMA 1993) sets out a methodology for assessing potentially significant environmental effects. In accordance with this guidance, the scope of assessment will focus on:

- Potential impacts (of changes in traffic flows) on local roads and the users of those roads; and
- Potential impacts (of changes in traffic flows) on land uses and environmental resources fronting these roads, including the relevant occupiers and users.

The main transport impacts will be associated with the movement of general HGV traffic travelling to and from the Proposed Development during the construction phase.

A cumulative assessment will take place where a proposed development has planning consent and would have a significant impact on the study network (i.e., over 30% increase in traffic flows). These traffic flows would be included into the baseline flows used within the assessment.

Planning proposals that are in scoping but not have planning consent are not committed development and as such would not be included in the assessment.

The following rules taken from the guidance would be used as a screening process to define the scale and extent of the assessment:

- Rule 1: Include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%); and
- Rule 2: Include any other specifically sensitive areas where traffic flows are predicted to increase by 10% or more.

Increases below these thresholds are generally considered to be insignificant given that daily variations in background traffic flow may fluctuate by this amount. Changes in traffic flow below this level predicted as a consequence of the Proposed Development will therefore be assumed to result in no discernible environmental impact and as such no further consideration will be given to the associated environment effects.

The estimated traffic generation of the Proposed Development will be compared with baseline traffic flows, obtained from existing traffic survey data, in order to determine the percentage increase in traffic.

Potentially significant environmental effects will then be assessed where the thresholds as defined above are exceeded. Suitable mitigation measures will be proposed, where appropriate.

Standard mitigation measures that are likely to be included in the assessment are:

- Production of an outline Construction Traffic Management Plan (CTMP);
- The design of suitable access arrangements with full consideration given to the road safety of all road users; and
- A Staff Sustainable Access Plan.

10.6 Issues Scoped Out

Once operational, it is envisaged that the level of traffic associated with the Proposed Development would be minimal. Regular maintenance visits would be made using 4x4 vehicles. It is considered that the effects of

operational traffic would be negligible and therefore no detailed assessment of the operational phase of the Proposed Development is proposed.

The traffic generation levels associated with the decommissioning phase will be less than those associated with the development phase as some elements such as access roads would be left in place on the site. As such, the construction phase is considered the worst case assessment to review the impact on the Study Area. An assessment of the decommissioning phase would therefore not be undertaken, although a commitment to reviewing the impact of this phase would be made immediately prior to decommissioning works proceeding.

10.7 Summary

The access, traffic and transport issues relating to the construction phase will be examined in detail. The Transport and Access assessment chapter will be accompanied by a Transport Assessment (TA) which will review the impact of construction traffic on the proposed Study Area.

11. NOISE AND VIBRATION

11.1 Introduction

This section sets out the proposed approach to assessment of potential impacts of the Proposed Development on noise and vibration during construction and operation.

11.2 Baseline Conditions

A desk-based review has been undertaken to identify noise sensitive receptors within the vicinity of the Proposed Development. Three representative residential properties have been identified, these are dwellings at Sallachry, Drimfern and Tullich.

11.3 Sensitive Receptors

Potential sensitive receptors that have been identified in the area surrounding the Proposed Development include:

- Noise sensitive receptors within a 300 m buffer either side of the Proposed Development, will be included in the assessment of noise from the operation of the Proposed Development.
- Noise sensitive receptors within the same area will be assessed for any impacts arising from noise and vibration associated with the construction of the Proposed Development.

11.4 Potential Significant Effects

At this preliminary stage, possible effects associated with construction and operation of the Proposed Development include:

- effects of construction noise (including traffic) on the surrounding area and on nearest residential properties;
- effects of vibration during construction on receptors in the area surrounding the connections and associated substations; and
- operational effects of noise from the 'corona discharge' along the overhead lines

Operational noise is likely to be minimal; the noise associated with overhead lines is a result of a phenomenon known as 'corona discharge'. This phenomenon generally occurs during damp weather when rain enhances the local electrical field strength allowing an audible discharge to occur.

11.5 Assessment Scope and Methodology

A desktop study is proposed to assess the likely noise and vibration impacts arising from the Proposed Development.

The construction noise and vibration assessment will be undertaken in accordance with guidance in BS5228.⁵⁵

The assessment of noise from overhead lines will use an appropriate methodology, based upon the principles of TR(T)94⁵⁶ (now withdrawn) and other best practice guidance..

A noise survey will also be undertaken, comprising the installation of sound level loggers at two example locations along the Proposed Development that are representative of the nearest noise sensitive receptors. The monitoring equipment will be left in-situ for a minimum period of seven days and a weather station will also be installed at a suitable location throughout the monitoring period. During equipment set-up, the site engineer will record observations of local noise sources and their relative sound level contribution and character at each

⁵⁵ BS 5228:2009_A1:2014 Code of practice for noise and vibration control on construction and open sites. Part 1: Noise and Part 2: Vibration.

⁵⁶ Technical Report TR(T)94, Issue 1, October 1993. A Method for Assessing the Community Response to Overhead Line Noise, National Grid

monitoring location. Sound level monitoring equipment will conform to BS EN 61672-1 (2013) and BS EN 60942 (2003). All equipment will be calibrated before and after use using techniques traceable to national standards.

Consultation will be undertaken with ABC to agree the assessment methodology.

The noise levels generated by the installation of the overhead line will be assessed drawing on best practice for both dry conditions and periods of rainfall. The specific noise level from a planned overhead line will be determined by using data of a line of equivalent design to that being proposed.

11.6 Issues Scoped Out

Construction noise will be short term and intermittent and can be controlled through the implementation of an appropriate CEMP, which would include working hours agreed with ABC. As such, no detailed assessment of construction noise associated with plant or traffic is proposed as part of the EIA Report.

Based on the scope and duration of construction activities required for tower construction, it is expected that construction traffic noise impacts and construction traffic vibration impacts would be negligible; therefore, no detailed assessment of construction traffic noise and vibration is proposed as part of the EIA Report.

11.7 Summary

The results of the survey and modelling will be used to assess the impact of noise from the Proposed Development. The assessment of operational substation noise emissions will be conducted in accordance with British Standard BS 4142:2014 and the requirements of ABC.

The assessment of the potential impacts of the Proposed Development will use an appropriate methodology, based upon the principles of TR(T)94⁵⁷ (now withdrawn) and other best practice guidance.

Should the results of the assessment indicate an adverse impact, outline mitigation guidance would be provided to reduce the impact.

⁵⁷ Technical Report TR(T)94, Issue 1, October 1993. A Method for Assessing the Community Response to Overhead Line Noise, National Grid

12. LAND USE

12.1 Introduction

This section will assess the potential effects on land use and agriculture receptors resulting from the construction and operation of the Proposed Development to establish if this topic should be scoped into the EIA.

12.2 Baseline Conditions

Agriculture in the area typically comprises cattle and sheep holdings, with The Macaulay Land Use Research Institute classifying land in the region as either Land Capable of supporting Improved Grassland (Class 5.1 to 5.3) or Land Capable of supporting on Rough Grazing (Class 6.1 to 7). No Land Capable of supporting Arable Agriculture (Class, 1, 2 or 3) has been identified therefore the agricultural land within the vicinity of the Proposed Development is of low sensitivity.

Areas in the north and south of the Proposed Route pass through areas of productive commercial forestry plantation and therefore land which is not in agricultural use as illustrated on **Figure 6.3**

Productive conifer plantations are dynamic with their structure undergoing change through planned felling and replanting, or in reaction to natural events such as wind throw or pests and diseases. First rotation forests are required to improve the biodiversity with age and species diversity as determined by the UK Forestry Standards (UKFS)⁵⁸. This process is referred to as “restructuring”. Further research is required to determine the forest units present and to map the differing stages of restructuring. With 8.8% of those in employment in agriculture, forestry and fishing, Argyll and Bute has relatively high levels of employment in this industry⁵⁹.

12.3 Sensitive Receptors

No land capable of supporting Arable Agriculture (Class, 1, 2 or 3) has been identified; therefore, the agricultural land within the vicinity of the Proposed Development is of low sensitivity.

Given the dynamic nature of productive forests, which are subject to restructuring, the environmental sensitivity of the forest as a commercial asset and land use is low. There are small and localised areas of Ancient Woodland present and these are of high sensitivity. The assessment of effects on Ancient Woodland would be picked up through the biodiversity section of the EIA Report.

12.4 Potential Significant Effects

12.4.1 Agricultural Land

On the basis that the agricultural land within the Proposed Route is of low sensitivity and that only a small proportion of the area of the area (access tracks and tower bases) would be affected, the Proposed Development would not result in significant effects across the entire resource.

Construction work may result in some local temporary loss of land or access restriction; however, this can be adequately managed through agreements with the relevant landowners. In general, the permanent loss of land to tower locations would be negligible and it would remain possible for grazing to continue around and under towers during their operational lifetime.

12.4.2 Forests

The Applicant is required to create safe operational corridors for construction and operation through the woodland areas identified. The typical operational corridor required within areas of woodland is 80 m. The

⁵⁸ Forestry Commission. (2017) *The UK Forestry Standard*. Edinburgh

⁵⁹ Argyll and Bute Council. Economy. Table of Employment by Industry 2018. https://www.argyll-bute.gov.uk/info/economy?_sm_au_=iVVV6S2QTNSDNj7r [Accessed 17/11/2020].

Operational Corridor is defined with reference to the distance at which a tree could fall and cause damage to the overhead line, resulting in a supply outage⁶⁰. As a result, the final corridor width would be based on the safety distance required to allow for a mature tree falling towards the OHL at the mid-point on a span between two towers, taking account of topography and tree height at maturity. On the basis that SSEN Transmission will provide compensatory planting in accordance with the Scottish Government's Control of Woodland Removal Policy (CoWRP)⁶¹ for all permanent woodland removal required to create the operational corridor, there would be no likely significant effect on the woodland resource.

12.5 Assessment Scope and Methodology

SSEN Transmission is committed to the development of OHL Woodland Reports for each forest ownership impacted by the Proposed Development. The OHL Woodland Reports will identify all areas of felling required to form the operational corridor and access corridors. In addition, the OHL Woodland Reports would aim to reduce the risk of future wind throw by identifying felling to stable forest edges (outside of the operational corridor). Consideration would also be given to maintaining the viability of forest units as productive plantations through the avoidance of fragmentation. The OHL Woodland Reports would also include but are not limited to seeking to agree a forest landscape design following good practice as defined by Forestry Commission guidance (2014)⁶². It is noted that felling outwith the Proposed Development operational corridor or proposed access track corridors is not within the scope of this EIA or the proposed application for consent.

12.6 Issues Scoped Out

Overall, the Proposed Development would not impinge on landowner choice over the type or intensity level of land operations and would not require any significant management changes. As such, no further assessment of land use or agriculture is required, therefore it is scoped out of the EIA.

On the basis that felling proposals to create the operational corridor will be supported by a commitment to comply with CoWRP, there would be no likely significant effects on the productive conifer plantation resource.

It is noted that the UKFS identifies seven elements of sustainable forest management, as follows:

- Forests and Biodiversity;
- Forests and Climate Change;
- Forests and Historic Environment;
- Forests and Landscape;
- Forests and People;
- Forests and Soil; and
- Forests and Water.

The potential environmental impacts and likely significant effects associated with the seven elements of sustainable forest management will be considered within the individual topic chapters proposed for inclusion in the EIA Report, rather than in a Forestry chapter.

12.7 Summary

The scoping exercise has reviewed the current land use within the zone of influence of the Proposed Development and has confirmed that the presence of low sensitivity agricultural land use and productive conifer plantation woodland. The likely impacts of the Proposed Development on agricultural land use would

⁶⁰ As specified by the 'red zone' set out in paragraph 39 of the Forest Industry Safety Accord (2013) Electricity at work: Forestry, FISA Safety Guide 804: <https://www.ukfisa.com/assets/files/safetyLibrary/FISA%20804%20-%20Electricity.pdf> [Accessed 08/03/2018]

⁶¹ Forestry Commission Scotland. (2009) *The Scottish Government's Policy on Control of Woodland Removal*. Edinburgh

⁶² Forestry Commission (2014) Design Techniques for Forest Management Planning.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/689922/Design_techniques_for_forest_management_planning.pdf [Accessed 02/12/2020]

potentially be localised loss of grazing access during construction; however, it is anticipated that normal farming activities would be able to resume once the Proposed Development is in operation. No likely significant effects are anticipated on agricultural land use and no further assessment is proposed.

The likely impacts of the Proposed Development on productive conifer plantation land use would be related to the permanent felling of an operational corridor and access track corridors. On the basis that permanent felling would be approved subject to compliance with CoWRP, no likely significant effects are anticipated. Further information to be provided in the EIA Report would be in the form OHL Woodland Reports.

13. SOCIOECONOMIC, RECREATION AND TOURISM

13.1 Introduction

This section will assess the potential effects on socio-economic, recreation and tourism receptors resulting from the construction and operation of the Proposed Development to establish if this topic should be scoped into the EIA.

13.2 Baseline Conditions

The economy in the region is predominantly service based, with over 87% of employee jobs in the area within the service sector. The region also has relatively high levels of employment in agriculture, forestry, fishing and manufacturing and low levels of employment in finance. Tourism-related activities, i.e., accommodation and food services, equate to 12.5% of jobs in the area⁶³.

The main settlement close to the Proposed Development is Inveraray. There are further isolated properties within the Proposed Route, west of the A819, and smaller clusters of development at Cladich to the north of Proposed Development and along the shore to Ardbrecknish and Portsonachan.

The roads within the Study Area (A819, A83, B840) generally follow the main valleys and the shorelines of Loch Awe and Loch Fyne and are all used by tourists. There are walking and cycling routes, visitor attractions and activities throughout the area including Inveraray Castle, Inveraray Jail, Inveraray Belltower, Loch Fyne itself and Loch Awe.

13.3 Potential Significant Effects

Potential effects may include:

- potential beneficial socio-economic effects including from direct employment and indirect spend in the local economy;
- temporary loss of amenity resulting from construction traffic and construction activity close to recreational routes and settlements; and
- loss of visual amenity for recreational routes and tourism receptors resulting from the installation of steel-lattice towers.

13.4 Issues Scoped Out

The Proposed Development would result in the creation of temporary jobs during the construction period. It is envisaged that a small proportion of the workforce would be from the local area. In addition, there would be potential beneficial effects through temporary increased spending on the supply of goods and services during construction. It is anticipated that these effects, while beneficial, are unlikely to be significant beyond the local area. In the long term, the Proposed Development would ensure security of electricity supply to the region and facilitate the increase in renewable energy generation planned for the area. These beneficial effects will be highlighted within the EIA Report; however, no separate impact assessment chapter is proposed to cover these issues.

The potential effects on visual amenity for tourism and recreational routes and receptors will be fully assessed in the EIA Report as part of the LVIA. The potential for effects on core paths and national cycle routes would be included as part of the Traffic and Transport assessment and would be managed according to an outline CTMP. Therefore, no separate recreation and tourism assessment is proposed in the EIA Report.

⁶³ Argyll and Bute Council, employment. Office Business Register and Employment Survey 2018. https://www.argyll-bute.gov.uk/info/economy?_sm_au_=iVVV6S2QTNSDNj7r [Accessed: 18/11/2020]

14. POPULATION AND HUMAN HEALTH

14.1 Introduction

The World Health Organisation (WHO) defines health as a state of physical, mental and social wellbeing, as well as the absence of disease or infirmity. The focus of the chapter is on community health and wellbeing and not on occupational health and safety. The term 'health' is used to describe 'human health' and 'wellbeing' unless specifically referenced otherwise.

Given the nature of the Proposed Development, the potential and perceived effects on population and human health include:

- perceived health effects related to electromagnetic fields (EMF); and
- potential for impact resulting from major accidents or disasters (considered to be limited to impacts from towers being destabilised).

14.2 Baseline Conditions

The Proposed Development is located in a rural area. There are a number of properties located in close proximity to the Proposed Development, the closest being Stronmagachan, Drimfern and Tullich.

14.2.1 Electro and Magnetic Fields (EMFs) during Operation

EMFs arise from electric charges and current flow. Exposure guidelines⁶⁴ have been developed by the International Commission on Non-Ionising Radiation Protection (ICNIRP) to ensure protection of human health in different situations, occupational exposures and public exposure. These guidelines have been adopted by the UK Health and Protection Agency (HPA) for application in the UK^{vii}.

The calculated field strengths for the proposed 275 kV OHL are within the ICNIRP guidelines as shown in **Table 14.1** below.

Table 14.1: Typical EMF and UK Exposure Guidelines

Source	Electric Field (kV/m)		Magnetic Field (μT)	
	Calculated field beneath line	Typical field 25 m from line	Calculated field beneath line	Typical field 25 m from line
ICNIRP public exposure limit	9		360	
Typical Field 275 kV OHL	2.8-3.3	0.2-0.5	24.9	1-2

Source: <http://www.emfs.info/sources/overhead/>

14.2.2 Accidents and Disasters

The potential for impact resulting from major accidents or disasters is limited to impacts from towers being destabilised. The design process seeks to avoid the potential for impacts arising from major accidents or disasters in two ways:

1. Altitudes over 300 m above sea level are avoided to reduce the extent of tower strengthening (and speed of refurbishment) required due to the higher potential for ice and high winds in such locations.
2. Tower locations are chosen that are at least 100 m from sensitive receptors; which is greater than the topple distance of the towers.

⁶⁴ International commission on non-ionizing radiation protection. March 2020. ICNIRP Guidelines for limiting exposure to electromagnetic fields (100 kHz to 300 Hz) <https://www.icnirp.org/cms/upload/publications/ICNIRPPrfgdl2020.pdf> [Accessed February 2022]

A review was undertaken regarding the expected effects deriving from the vulnerability of the development to risks of major accidents and disasters. An initial list of major accidents and disasters was compiled using a variety of sources including the Cabinet Office National Risk Register of Civil Emergencies 2015 Edition ⁶⁵ and UK Government Emergency Response & Recovery Guidance ⁶⁶. This list was screened in two stages to identify risks which would be applicable to the Proposed Development; firstly, based on the location and use/nature of the Proposed Development; and then based on the likelihood of the event and consequence of the outcome. The final screened list was then considered in terms of existing mitigation or prevention measures such as regulations and guidance; key documents included:

- Health and Safety Executive Guidance Note GS6 (Forth edition) Avoiding danger from overhead power lines;
- Forestry Industry Safety Accord (FIAS) Safety Guide 804 Electricity at work: Forestry; and
- ENA Technical Specification 43-8 2004: Overhead Line Clearances.

The baseline conditions for the following topics which have the potential to impact human health can be found in the following chapters of this Scoping Report:

- Water Environment (**Chapter 9**);
- Air and Climate (**Chapter 15**);
- Noise and Vibration (**Chapter 11**);
- Landscape and Visual Impact (**Chapter 4**);
- Socio-economics, Recreation and Tourism (**Chapter 13**); and
- Traffic and Transport (**Chapter 10**).

14.3 Sensitive Receptors

Potential sensitive receptors that have been identified in the area surrounding the Proposed Development include:

- Onsite populations (e.g., site personnel); and
- Offsite populations (e.g., local residences/towns/villages).

14.4 Potential Significant Effects

Potential significant effects identified for the topics listed in **Section 14.2** can be found in the relevant technical sections of this Scoping Report.

Appropriate control measures to ensure potential effects on human health are managed appropriately in the construction phase will be addressed through a CEMP, which would be produced to manage the construction of the Proposed Development and would address the following issues related to human health and well-being:

- Water quality;
- Noise controls; and
- Air and dust management.

⁶⁵ Cabinet Office. National risk register of civil emergencies. 2015 edition.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/419549/20150331_2015-NRR-WA_Final.pdf [Accessed February 2022]

⁶⁶ HM Government. Emergency response and recovery. Non statutory guidance accompanying the Civil Contingencies Act 2004. October 2013.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/253488/Emergency_Response_and_Recovery_5th_edition_October_2013.pdf [Accessed February 2022]

14.5 Assessment Scope and Methodology

The technical sections listed in **Section 14.2** set out the assessment methodology for the various technical topics relating to human health and population.

14.6 Issues Scoped Out

Issues scoped out of the topics listed in **Section 14.2** are listed in the relevant technical sections of this Scoping Report.

This review did not identify potentially significant effects from major accidents or disasters that would require assessment under the EIA Regulations and therefore this topic has been scoped out from further assessment.

The typical field strengths for 275 kV OHL are within the ICNIRP exposure guidelines. As such there is no likely significant effects on human health associated with EMFs and this issue is scoped out from further assessment.

14.7 Summary

The potential for significant effects on human health in terms water quality, air quality, noise, visual impacts, traffic and transport have been considered in the appropriate sections of this Scoping Report.

There is no potential for public or occupational exposure to EMFs above appropriate thresholds as a result of the Proposed Development. There is no potential for impacts to human health as a result of accidents and disasters.

As such, a separate human health and population impact assessment chapter will not be presented in the EIA Report.

15. AIR QUALITY AND CLIMATE CHANGE

15.1 Introduction

This section sets out the proposed approach to the potential impacts of the Proposed Development on air quality and climate change during construction and operation.

15.2 Baseline Conditions

The Climate Change (Scotland) Act 2009⁶⁷ requires an 80% reduction in GHG emissions in Scotland by 2050, compared to the 1990-1995 baseline. The Scottish Government has since passed the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 which has set a target of reducing domestic emissions to net zero by 2045. The Scottish Government has set annual targets⁶⁸ shown in **Table 15.1**.

Table 15.1: Annual GHG Emission Targets for Scotland

Year	Annual Target (tCO ₂ e)	% Reduction from baseline
2019	41,976,000	-46%
2020	40,717,000	-47%
2021	39,495,000	-49%
2022	38,310,000	-50%
2023	37,161,000	-52%
2024	35,787,000	-54%
2025	34,117,000	-56%
2026	32,446,000	-58%
2027	30,777,000	-60%
2028	29,854,000	-61%
2029	28,958,000	-62%
2030	28,089,000	-64%
2031	27,247,000	-65%
2032	26,429,000	-66%

The UK climate change risk assessment⁶⁹ details some of the hazards related to climate change of most relevance to the Proposed Development. The hazards include:

- increased precipitation (heavier rainfall) leading to potential flooding and erosion;
- higher extreme temperatures leading to risks associated with wildfire or risks to the grid connection;
- increased severity of storms with the potential for damage to plant and infrastructure.

There are no Air Quality Management Areas (AQMAs) in the Argyll and Bute Council area, indicating that the area is meeting national air quality objectives and European directives⁷⁰ limits and target values for the protection of human health.

⁶⁷ Climate Change Plan. The Third Report on Proposals and Policies 2018-2032. Scottish Government, 2018. <https://www.gov.scot/publications/scottish-governments-climate-change-plan-third-report-proposals-policies-2018/> [Accessed on 05/10/2021].

⁶⁸ Climate Change Plan. The Third Report on Proposals and Policies 2018-2032. Scottish Government, 2018. Available at: same as above

⁶⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/584281/uk-climate-change-risk-assess-2017.pdf [Accessed 05/10/2021]

⁷⁰ Directive 2008/50/EC, Directive 2004/107/EC and 2001/81/EC

15.3 Sensitive Receptors

In the context of the EIA process, climate change is required to be assessed both in relation to the contribution of the Proposed Development to increasing the nature and magnitude of greenhouse gas emissions and the vulnerability of the Proposed Development to climate change.

The key receptors for air quality are the population (from a human health perspective), flora and fauna (from a biodiversity perspective).

15.4 Potential Significant Effects

15.4.1 Climate Change

IEMA guidance⁷¹ indicates all GHG emissions should be considered as significant; however, in this case it is anticipated that the Proposed Development will indirectly result in a net-reduction/saving of GHG emissions. Construction of the OHL is likely to contribute to greenhouse gas emissions from vehicles during construction, the carbon footprint (embodied carbon) of the materials required to build the OHL and the removal of forestry. However, the Proposed Development is required to provide capacity for connection of distributed renewable energy generation to the electricity transmission network. The total forecasted renewable generation connected to and requiring connection to the Argyll and Kintyre network is approximately 1,680 MW. The forecasted renewable generation to be connected to the Proposed Development is not quantified, however, the Proposed Development is a nationally significant development in planning terms and will play an important role in facilitating the transition to net zero emissions. On this basis, a climate change assessment to consider GHG emissions is not proposed.

15.4.2 Climate Change Hazard Vulnerability

The vulnerability of the Proposed Development to climate change hazards is low on the basis that the design (which will be set out in the EIA Report) will specifically include embedded mitigation to ensure that significant effects are avoided or reduced to a tolerable level. A detailed assessment of the vulnerability of the Proposed Development to climate change hazards is not proposed.

15.4.3 Air Quality

The Proposed Development is not considered to give rise to significant effects to air quality. There is the potential for some localised and temporary construction related air quality effects associated with dust (foundation construction, passage of vehicles along access tracks) and construction plant and traffic exhaust emissions. However, the nature of the construction activities is that they will be short in duration, intermittent and controllable through the application of good construction practice. Once the Proposed Development is operational there is no potential for significant air quality effects.

The potential for nuisance effects on residential or recreational amenity will be limited and will be strictly controlled in accordance with a detailed CEMP.

The Proposed Development will not result in significant adverse effects on air quality during the construction and operational phases. Therefore, this issue is scoped out of the EIA and no further assessment of air quality is proposed as part of the EIA Report.

15.5 Issues Scoped Out

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

⁷¹ IEMA (2017). Assessing Greenhouse Gas Emissions and Evaluating their Significance. Available at: <https://www.iema.net/preview-document/assessing-greenhouse-gas-emissions-and-evaluating-their-significance> . [Accessed 05/10/2021].

with fossil fuel based electricity generation elsewhere. As such, this issue is scoped out of the EIA and no assessment of air quality and climate change is proposed as part of the EIA Report.

16. SUMMARY OF TOPICS

As explained above, a number of topics are considered to be not significant and will be scoped out from further consideration within the EIA process. **Table 16.1** below lists each topic and the elements scoped in and out from further assessment; with a summary of the justification for doing so.

Table 16.1: Issues Scoped In and Out

Topic	Scoped In	Scoped Out
Landscape Character and Visual Impact	✓	<ul style="list-style-type: none"> (LCT37) Upland Glens - Argyll; and The Ardkinglas and Strone GDL.
Cultural Heritage	✓	<ul style="list-style-type: none"> Battlefields; and World Heritage Sites.
Ecology	✓	<ul style="list-style-type: none"> Statutory designated sites within 10 km of the Proposed Development where there is no connectivity.
Ornithology	✓	<ul style="list-style-type: none"> Barrier effects; Electrocution; Habitat loss (during both construction and operational phases); and Potential disturbance during the operational phase.
Geology and Soil	✓	<ul style="list-style-type: none"> Contaminated Land; and Operational impacts.
Water Environment	✓	×
Traffic and Transport	✓	<ul style="list-style-type: none"> Operational impacts; and Where the thresholds for significant effects during the construction phase are not met in a specific location (in accordance with IEMA Guidelines) it is proposed that further assessment is not required.
Noise and Vibration	✓	<ul style="list-style-type: none"> Construction noise and vibration.
Land Use and Agriculture	×	N/A
Forestry	✓	N/A
Socioeconomic, Recreation and Tourism	×	N/A
Population and Human Health	×	N/A
Climate Change	×	N/A
Air Quality	×	N/A
Major Accidents and Disasters	×	N/A

17. NEXT STEPS

SSEN Transmission invites consultees to comment on the following:

- What environmental information do you hold or are aware of that will assist in the EIA described here?
- Do you agree with the proposed approach for baseline collection, prediction and significance assessment?
- Are there any key issues or possible effects which have been omitted?
- Do you agree with the list of issues to be scoped out, and the rationale behind the decision?
- Of those issues identified for assessment, which do you consider the most important/material and which the least?

All responses should be addressed to:

Email: Econsents_Admin@gov.scot

OR

Energy Consents Unit Scottish Government 5 Atlantic Quay

150 Broomielaw Glasgow, G2 8LU

The Scoping Opinion provided will be used to finalise the terms of the EIA and the specific approach to the individual assessments.

All comments received will be included in the EIA Report for reference, unless consultees request otherwise.

18. REFERENCES

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- i JNCC, 2010. Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit. Joint Nature Conservation Committee, Peterborough
 - ii Rodwell, J. S. (2006). NVC Users' Handbook. ISBN 978 1 86107 574 1.
 - iii Rodwell, J. S. (Ed), et al. (1991 – 2000). British Plant Communities (5 volumes). Cambridge University Press.
 - iv Gilbert, G., Gibbons, D, W and Evans, J, 1998. Bird monitoring methods. Pelagic Publishing.
 - v Brown, A, F and Shepherd K.B, 1993. A method for censusing upland breeding waders. Bird Study, 40, 189-195.
 - vi BTO, 2015. Birds of Conservation Concern 4: the Red List for Birds [online]. Available at: https://www.bto.org/sites/default/files/shared_documents/publications/birds-conservation-concern/birds-of-conservation-concern-4-leaflet.pdf [Accessed 01/12/17]
 - vi Health and Protection Agency <https://www.gov.uk/government/collections/electromagnetic-fields>

APPENDIX A: FIGURES