

North Argyll 275kV Overhead Line Reinforcement

Alignment Selection Consultation Document: Creag Dhubh to Inveraray 275 kV Overhead Line

April 2022





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CONTENTS

GLOSSARY	I
PREFACE	IV
EXECUTIVE SUMMARY	V
1. INTRODUCTION	1
1.1 Background	1
1.2 Purpose of the Document	1
1.3 Document Structure	2
2. THE PROPOSALS	3
2.1 Project Need	3
2.2 Proposed Development	3
2.3 Project History	4
3. DESCRIPTION OF THE ALIGNMENT DEVIATION OPTIONS	6
3.1 Study Area	6
3.2 Identification of Baseline Alignment	6
3.3 Alignment Deviations Analysis	7
4. COMPARATIVE APPRAISAL	8
4.1 Introduction	8
4.2 Comparative Analysis of Baseline Alignment with Deviation 1 and 2	8
4.3 Preferred Alignment	10
5. CONSULTATION ON THE PROPOSALS	11
5.1 Questions for Consideration by Consultees	11
5.2 Next Steps	11

ANNEXES

Annex A: Figures

GLOSSARY

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.
Amenity	The natural environment, cultural heritage, landscape, and visual quality. Also includes the impacts of noise and disturbance, for example, on the natural environment experienced
Ancient Woodland	Woodland which has been in continuous existing since before 1750 in Scotland and is important for biodiversity and cultural identity. Ancient semi-natural woodland is Ancient Woodland composed of mainly locally native trees and shrubs that derive from natural seed fall or coppice rather than from planting
Angle Tower	Support structure (tower or pole) which allows a change in direction of the overhead line
APQ	Areas of Panoramic Quality
ABC	Argyll and Bute Council
BBOP	Business and Biodiversity Offset Programme
BGS	British Geological Survey
BNG	Biodiversity Net Gain
CAWL	Core Areas of Wild Land – Now classified as Wild Land Areas since 2014, Study these were extensive areas of high wildness as defined by Scottish Natural Heritage.
CEMP	Construction Environmental Management Plan
Centre Line	The linear connection between the central point of each support structure along the length of the overhead line
CIEEM	Chartered Institute for Ecology and Environmental Management
CIRIA	Construction Industry Research and Information Association
Circuit	Overhead line or underground cable consisting of multiple conductors, to carry electric current
Conductor	A metallic wire strung from supporting steel lattice or wood structures, or an insulated wire below ground, to carry electric current
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.
Corridor	A linear area which allows a continuous connection between the defined connection points. The corridor may vary in width along its length; in unconstrained areas it may be many kilometres wide
EIA	Environmental Impact Assessment
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”.
GEMP	General Environmental Management Plan
GWDTE	Groundwater Dependent Terrestrial Ecosystem
IEMA	Institute of Environmental Management and Assessment

ITE / ITW	Existing 132 kV overhead line that connects Inveraray Switching Station to Taynuilt Substation. Inveraray Taynuilt East and West refers to the names of the east and west circuit on the overhead line.
Kilovolt (kV)	One thousand volts
LCT	Landscape Character Type exhibiting distinctive pattern of elements and features.
MCA	Multi-Criteria Analysis- an evaluation of the technical and environmental constraints was undertaken in the form of constraints analysis which included a combination of desk-based analysis, field work, consultation, and liaison with the wider project team. These are then transferred to Geographic Information System (GIS) for analysis.
Micrositing	The process of positioning individual structures to avoid localised environmental or technical constraints
Mitigation	Term used to indicate avoidance, remediation, or alleviation of adverse impacts.
NatureScot	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 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
Operational Corridor	The area needed for operational maintenance
OPGW	Optical Fibre Ground Wire
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.
Preferred Alignment	An alignment for the overhead line taken forward to stakeholder consultation following a comparative appraisal of alignment options
Proposed Alignment	An alignment taken forward to consent application. It comprises a defined centre line for the overhead line and includes an indicative support structure (tower or pole) schedule, also specifying access arrangements and any associated construction facilities
Proposed Development	The construction and operation of a double circuit 275 kV overhead line between a proposed new substation at Creag Dhubh, approximately 3 km south of Cladich, and a connection point on the recently constructed Inveraray – Crossaig circuit, in Argyll, Scotland.
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 Route	The final route taken forward following stakeholder consultation within which alternative OHL route alignments will be defined and appraised.
PWS	Private Water Supply
Route	A linear area of approximately 1 km width (although this may be narrower/wider in specific locations in response to identified pinch points / constraints), which provides a continuous connection between defined connection points

Routing Study	The study undertaken to assess the potential environmental impacts of the Route Options and to identify a preferred route based upon the potential environmental impacts identified.
Section 37 (s37) application	An application for development consent under section 37 of the Electricity Act 1989
SAC	Special Area of Conservation - designated under Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (known as - The Habitats Directive)
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)
SPEN	Scottish Power Energy Networks
SSEN Transmission	Scottish and Southern Electricity 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 area for identification of environmental constraints along the proposed alignment options. The defined Study Area varies between disciplines.
VP	Vantage Point
Volts	The international unit of electric potential and electromotive force.
Wayleave	A voluntary agreement entered between a landowner upon whose land an overhead line is to be constructed and SSEN Transmission.
Wild Land Areas (WLA)	Those areas comprising the greatest and most extensive areas of wild characteristics within Scotland, as classified by SNH (2014).
Windthrow	Windthrow refers to trees uprooted by wind.
ZTV	Zone of Theoretical Visibility - the theoretical visibility of a Proposed Development based on the terrain of the surrounding area.

PREFACE

This Consultation Document has been prepared by Ramboll on behalf of Scottish and Southern Electricity Networks Transmission (SSEN Transmission), to seek comments from all interested parties on the Preferred Alignment selected for the Proposed Creag Dhubh to Inveraray 275 kV Connection project.

The Consultation Document is available online at: <https://www.ssen-transmission.co.uk/projects/creag-dhubh-inveraray-275kv-overhead-line/>

Virtual and face to face public consultation events detailing the proposals described in this document will be held at the following times:

Date of Event	Location
18 and 19 May 2022 14:00 to 19:00	Loch Fyne Hotel, Inveraray
24 and 25 May 2022 17:00 to 19:00	Event can be accessed via the project website: https://www.ssen-transmission.co.uk/projects/creag-dhubh-inveraray-275kv-overhead-line/

Comments on this document should be sent to:

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All comments are requested by **9 May 2022**

EXECUTIVE SUMMARY

This Consultation Document invites members of the public, statutory consultees, and other key stakeholders to provide comment on the Preferred Alignment selected between the proposed Creag Dhubh substation and Inveraray-Crossaig circuit project¹.

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 connection, are being progressed to provide this additional capacity for new generation connections.

Following the route options appraisal undertaken by Ramboll in 2021, an approximately 500 m wide Original Preferred Route (Route Option DE) was established as the starting point for developing an OHL alignment. A consultation process on this route was undertaken running four weeks from June-July 2021. However, following consultation on Route Option DE a high risk of unexploded ordnance (UXO) was identified within the route, and Route Option DE became unfeasible. A new Baseline Alignment has therefore been developed located to the west of the A819.

The OHL design contractor, Balfour Beatty (BB), were instructed by SSEN Transmission to develop a Baseline Alignment for a 275 kV OHL. The Baseline Alignment aims to provide the optimal alignment taking account of engineering criteria as per Table A7 of SSEN Transmission guidance².

Following the identification of the Baseline Alignment, amendments were suggested (referred to as 'deviations'). The following deviation options were suggested to address environment and engineering issues and previous consultation:

- Deviation 1: This deviation option moves the Alignment to the west in the vicinity of Stronmagachan and offers improvements in response to consultee feedback. Moving the Alignment west moves it further away from residential properties. Additionally, it reduces the impact on the working farm by moving the alignment out of the lambing or "in-bye" fields. It also allows the Alignment to avoid being sited on top of a ridge, as the Baseline Alignment is, which may help reduce visual impact from the trunk road and/or local properties.
- Deviation 2: This deviation option extends the section that the new OHL will run in parallel to the existing ITE/ITW OHL before an angle turns towards Creag Dhubh and offers improvement in response to landowner feedback. The rationale for moving is in theory it reduces the area of land sterilisation by the two OHLs. The area of land between the existing 132 kV Inveraray to Taynuilt OHL (ITE/ITW) and the Baseline Alignment will likely be sterilised due to safety concerns about being enclosed between two live lines. Extending the section that the two OHL runs in parallel, minimises the land area between the two lines and therefore limits the extent of sterilisation.

This report presents a summary of the comparative analysis of environmental, engineering and cost criteria of the two Alignment Deviation Options and the Baseline Alignment. **Overall, a combined preference of Deviation 1 and the Baseline Alignment is considered to be the Preferred Alignment.**

As part of the consultation exercise, comments are sought from members of the public, statutory consultees, and other key stakeholders on the Preferred Alignment option in response to questions set out in **Section 6**.

A Report on Consultation will be produced which will document the consultations received, and the decisions made considering these responses.

¹ Project Details available at: <https://www.ssen-transmission.co.uk/projects/creag-dhubh-inveraray-275kv-overhead-line/>

² SSEN, 2020. Procedures for Routeing Overhead Lines and Underground Cables of 132kV and above. Document reference: PR-NET-ENV-501. September 2020

1. INTRODUCTION

1.1 Background

Scottish and Southern Electricity Networks Transmission (SSEN Transmission) is proposing to submit an application for consent to construct and operate a new 8-12 kilometre (km) double circuit 275 kV overhead line (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, in Argyll, Scotland (the 'Proposed Development').

SSEN completed a Route Selection Study³ between the proposed Creag Dhubh Substation and Inveraray. The Original Preferred Route (Route Option DE) (**Annex A, Figure 1.1**) was selected following survey, assessment, and consultation held over four weeks running June-July 2021 (as documented in the Report on Consultation, September 2021)⁴. Following this consultation SSEN Transmission were made aware of a significant 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 Preferred Route.

The UXO Contractor's proposal outlined:

- Based on the minimum tree clearance and an estimate tree density, clearance would take a minimum of 260 days and could increase the cost to deliver the scheme by c50%;
- 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 263 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 1 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 Preferred Route to the New Proposed Route. There is also a risk of further delay if a higher number of UXO are found than estimated. The Original Preferred Route has therefore moved to the west of the A819.

1.2 Purpose of the Document

The overall purpose of this document is to inform a face to face and virtual consultation event covering the Proposed Development summarised below, and to aid the overall project understanding for interested parties as well as allowing for potential cumulative effects to be understood.

This Consultation Document describes the different OHL Alignment Deviation Options and invites interested parties to provide their views on the Preferred Alignment put forward in this document.

All comments received will inform SSEN Transmission' selection of a Preferred Alignment to be taken forward for Environmental Impact Assessment (EIA) and more detailed technical assessment prior to submission of an application for consent under section 37 of the Electricity Act 1989, as amended (hereafter referred to as s37 consent).

³ SSEN Transmission 2021. North Argyll 275 kV Overhead Line Reinforcement. Draft Route Options Environmental Report: Inveraray to Creag Dhubh 275 kV Overhead Line (LT194).

⁴ SSEN Transmission 2021. Report on Consultation Craig Dhubh to Inveraray 275kV Connection. September 2021. Available at: <https://www.ssen-transmission.co.uk/projects/creag-dhubh-inveraray-275kv-overhead-line/>



1.3 Document Structure

This report is comprised of the following sections as follows:

1. **Introduction** – provides a summary of the project background, sets out the purpose of the Consultation Document and provides the document structure;
2. **The Proposals** – describes project need, the project overview, and consultation history;
3. **Description of the Alignment Deviation Options** – describes the identification of Alignment Deviation Options and provides a summary of each option;
4. **Comparative Appraisal** – a summary of the environment, engineering and cost topics, followed by a comparative analysis summary and a description of the Preferred Alignment; and
5. **Consultation on the Proposals** – invites comments on the Preferred Alignment and describes the next steps.

The main body of this document is supported by a series of figures and annexes.

2. THE PROPOSALS

2.1 Project Need

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:

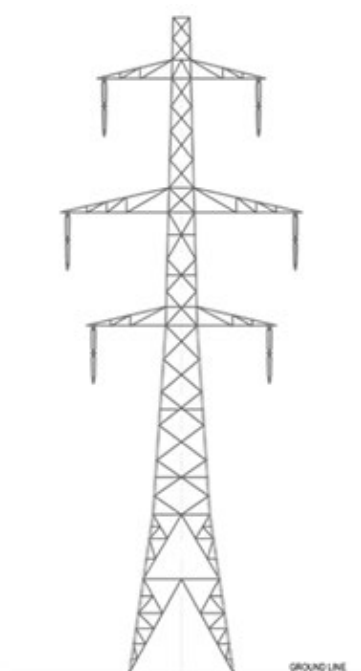
- the development and maintenance of an efficient, coordinated, and cost effective system of electricity transmission;
- facilitating competition in the supply and generation of electricity; and
- ensuring that the security of the network is maintained as the demand and/or generation connections change 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 cost effective 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 connection, are being progressed to provide this additional capacity for new generation connections.

2.2 Proposed Development

The Proposed Development would comprise the construction of 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.

It has been assumed that the Proposed Development 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

2.3 Project History

SSEN Transmission identified six alternative Route Options in the Inveraray area and invited members of the public, statutory consultees and other key stakeholders, to participate in a consultation process on the Route Options running four weeks from June-July 2021.

The consultation process included the publication of a Consultation Document (7 June 2021) to describe the evaluation of the different Route Options and invite interested parties to provide their views. In addition, SSEN Transmission published a Consultation Brochure and Poster and held a Virtual Consultation Event along with live chat sessions. Through the consultation, comments were sought from members of the public, statutory consultees and other key stakeholders on the Original Preferred Route (**Annex A, Figure 2.1**).

Following this consultation SSEN Transmission were made aware of a significant 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.

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 c50%;
- 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 263 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 1 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 Preferred Route to the New Proposed Route. There is also a risk of further delay if a higher number of UXO are found than estimated. The Original Preferred Route has therefore moved to the west of the A819. A Route Update note was issued by SSEN Transmission to statutory and non-statutory consultees in March 2022 providing a summary of the alteration in the Preferred Route.

3. DESCRIPTION OF THE ALIGNMENT DEVIATION OPTIONS

3.1 Study Area

As detailed above, following the route options appraisal undertaken by Ramboll in June 2021, an approximately 500 m wide Original Preferred Route (Route Option DE) was established as the starting point for developing an OHL alignment. However, following consultation on Route Option DE a high risk of unexploded ordnance (UXO) was identified within the route, and Route Option DE became unfeasible. The OHL design contractor, Balfour Beatty (BB), were instructed by SSEN Transmission to develop a new Baseline Alignment for a 275 kV OHL located to the west of the A819.

3.2 Identification of Baseline Alignment

Balfour Beatty (BB) carried out engineering assessments to produce an alignment through the following steps:

- An initial desktop analysis allowed provisional angle points to be selected and marked on maps.
- Provisional ground lines and elevations were reviewed using LIDAR survey data.
- An on-site assessment of the initial alignment and angle points was made, involving traversing the initial alignment to investigate, photograph and record the locations (via hand held GPS) of key features including buildings, roads, public footpaths, water bodies, existing service markers, existing Low Voltage (LV) and High Voltage (HV) OHLs and other infrastructure that may require specific clearance from the Proposed Development.

The information gathered in the site assessment was used to determine the most suitable engineering alignment, hereafter called the 'Baseline Alignment'. The Baseline Alignment aims to provide the optimal alignment, taking account of engineering criteria as summarised in **Table 3.1** below.

Table 3.1: Baseline Alignment – Engineering Appraisal Criteria

Infrastructure Crossing	<p><u>Major Crossings:</u> Review of major crossings (132 kV, 275 kV, Rail, 200 m+ wide river, navigable canal, and hydro/gas pipeline) (Holford Rule 6).</p> <p>Road Crossing: Review number of road crossings.</p>
Ground Conditions	<p><u>Terrain:</u> Review of topography, with a preference for lower gradients and avoiding slope gradients >50% where possible.</p> <p><u>Peat:</u> Site survey to avoid unfavourable ground, such as peat, extensive areas of rocky outcrops and wet areas and water courses/ bodies.</p>
Construction and Maintenance	<p><u>Angle Poles:</u> Review of angle pole requirements. Least number of angle poles is preferable (Holford Rule 3).</p>
Proximity	<p><u>Clearance Distance:</u> Review distance to existing buildings or properties. Aiming at least 100 m distance.</p>

The Baseline Alignment is shown in **Annex A, Figure 3.1**.

3.3 Alignment Deviations Analysis

The next stage comprised the analysis of the Baseline Alignment in terms of the environmental criteria summarised in **Table 3.2** below.

Table 3.2: Baseline Alignment – Environmental Appraisal Criteria

Natural Heritage	Designations, protected species, habitats, ornithology, hydrology, geology.
Cultural Heritage	Designated and non-designated assets.
Proximity to Dwellings	Residential properties.
Landscape and Visual	Designations, landscape character and visual amenity.
Land Use	Agriculture, forestry, and recreation.
Planning	Policy and proposals.

The route selection stage, completed in accordance with the SSEN Transmission OHL routeing process and the Holford Rules, ensured that the areas of highest amenity value were avoided. Therefore, for the majority of the Baseline Alignment, no obvious benefit was identified from alternative alignment options and the Baseline Alignment is confirmed as the Preferred Alignment for the majority. However, two Deviation Options were identified as shown in **Annex 1, Figure 3.2**; these are described briefly below.

3.3.1 Alignment Deviation 1

This option moves the Alignment to the west in the vicinity of Stronmagachan and offers improvements in response to consultee feedback. Moving the Alignment west moves it further away from residential properties. Additionally, it reduces the impact on the working farm by moving the alignment out of the lambing or “in-bye” fields. It also allows the Alignment to avoid being sited on top of a ridge, as the Baseline Alignment is, which may help reduce visual impact from the trunk road and/or local properties.

3.3.2 Alignment Deviation 2

This option extends the section that the new OHL will run in parallel to the existing 132 kV Inveraray to Taynuilt OHL (ITE/ITW) OHL before an angle turns towards Creag Dhubh and offers improvement in response to landowner feedback. The rationale for moving is in theory it reduces the area of land sterilisation by the two OHLs. The area of land between the existing ITE/ITW and the Baseline Alignment will likely be sterilised due to safety concerns about being enclosed between two live lines. Extending the section that the two OHL runs in parallel, minimises the land area between the two lines and therefore limits the extent of sterilisation.

4. COMPARATIVE APPRAISAL

4.1 Introduction

The comparative appraisal for each Alignment Deviation Option has been completed in accordance with SSEN Transmission guidance. The guidance states that each Option should be evaluated with reference to agreed environmental, engineering and cost criteria and should be considered in terms of the potential for the Proposed Development to be constrained. A Red/Amber/Green (RAG) rating has been applied to each criterion with RED indicating a high potential for constraint, AMBER indicating intermediate potential for constrain and GREEN indicating low potential for constraint. It should be noted that a RED or AMBER rating does not necessarily indicate that the Option would be unacceptable, but rather indicates the need for further consideration of the potential to mitigate potentially adverse impacts.

4.2 Comparative Analysis of Baseline Alignment with Deviation 1 and 2

4.2.1 Environmental

The RAG analysis has identified particular sensitivities in relation to those constraints shown in amber in **Table 4.1** below. Many of these do not indicate a preference between the alternative options; however, the preferences that can be drawn out are identified below and are shown in **Figure 5.1 (Annex A)**.

The Baseline Alignment is preferred in relation to:

- Ornithology due to its increased distance from a golden eagle territory;
- Geology as it crosses a lesser area of Class 2 and Class 3 peatland;
- Cultural heritage as it is a greater distance from Kilmun Chapel and Burial Ground thus reducing the potential impact on its setting;
- Landscape character as it is located on higher land within the landscape character types (LCT); and
- Planning.

Alignment Deviation 1 is preferred in relation to:

- Natural heritage as it avoids impacts on Ancient Woodland and oak woodland;
- Hydrology due to its increased distance from private water supplies (PWSs);
- People as it routes further away from the northern cluster of properties (the four Drimfern and two Stronmagachan residences) and is screened from view by local topography in some places;
- Landscape designations as the towers would be visible from a smaller area;
- Visual receptors as it would have fewer impacts on visual receptors; and
- Land use and recreation as it would have fewer visual impacts on recreational receptors.

Alignment Deviation 2 is preferred in relation to:

- Hydrology due to its greater distance from the River Aray.

Deviation 1 and Deviation 2 are both preferred to the equivalent Baseline Alignment sections as outlined above.

Table 4.1: Summary of Environmental RAG Ratings

Alignment options	RAG Impact Rating															
	Natural Heritage					Cultural Heritage		People	Landscape Visual and			Land Use			Planning	
	Designations	Protected Species	Habitats	Ornithology	Hydrology /Geology	Designated Assets	Non-designated Assets	Proximity to Dwellings	Landscape Designations	Landscape Character	Visual Receptors	Agriculture	Forestry	Recreation	Policy	Proposals
Baseline	A	A	G	A	R	A	G	A	A	A	A	G	A	A	G	A
Deviation 1	G	G	G	A	R	A	A	A	A	A	A	G	A	A	A	A
Deviation 2	A	A	G	A	A	A	G	A	A	A	A	G	A	A	G	G

4.2.2 Engineering

Deviation 1 is preferred to the Baseline Alignment as the terrain is preferable with it being flatter enabling longer spans between towers. Additionally, it is preferred as it increases clearance between the OHL and nearby properties.

Deviation 2 is not preferred to the Baseline Alignment as it will require two larger angle towers to achieve the near 90 degree turn to connect to Creag Dhubh. This also affects the angle tower that ties into Creag Dhubh which would similarly be required to be larger. The location of the angle towers also requires an additional span over access tracks which is not preferred as it introduces further risk and additional challenges.

Table 4.2: Summary of Engineering RAG Ratings

Alignment Options	RAG Impact Rating - Engineering					
	Infrastructure Crossing		Ground Condition		Construction and Maintenance	Proximity
	Major Crossings	Road Crossings	Terrain	Peat	Angle Towers	Clearance Distance
Baseline comparable to Deviation 1	A	G	R	G	G	A
Deviation 1	A	G	A	G	A	G
Baseline comparable to Deviation 2	G	G	A	A	A	G
Deviation 2	G	A	A	A	R	A

4.2.3 Cost

Deviation 1 is preferred to the equivalent Baseline Alignment from a cost perspective. It requires one less tower and significantly less felling. This will save the cost of felling the trees and the timber compensation and compensatory planting costs.

Deviation 2 is not preferred to the Baseline Alignment as the substantial angle towers required will be more expensive than those required to construct the Baseline Alignment section.

Table 4.3: Summary of Cost RAG Ratings

Route	RAG Impact Rating – Cost							
	Capital	Diversions	Public Road Improvement	Tree Felling	Land Assembly	Consent Mitigations	Inspections	Maintenance
Baseline comparable to Deviation 1	A	G	G	A	A	A	G	G
Deviation 1	G	G	G	G	G	A	G	G
Baseline comparable to Deviation 2	G	G	G	A	G	A	G	G
Deviation 2	A	G	G	A	G	A	G	G

4.3 Preferred Alignment

From south to north, the Preferred Alignment will comprise of Deviation 1 from the Inverary – Crossaig connection on to the Baseline Alignment and maintain this through to the Creag Dhubh connection. The Preferred Alignment will not make use of Deviation 2.

From an engineering perspective Deviation 1 has been selected over the Baseline Alignment as it makes use of flatter more open terrain and in doing so is able to increase distance from local properties and use less towers. This will also reduce the impact on the local farming operations and residences. Deviation 1 will require less extensive felling, making use of previously felled areas, and should result in an overall less costly and less complex construction. The most challenging section of the alignment is likely to be from where Deviation 1 re-joins the Baseline Alignment until after the new OHL has crossed the existing ITE/ITW.

From an environmental perspective Deviation 1 is preferred over the Baseline Alignment with respect to:

- Natural heritage as it avoids impacts on Ancient Woodland and oak woodland;
- Hydrology due to its increased distance from private water supplies (PWSs);
- People as it routes further away from the northern cluster of properties (the four Drimfern and two Stronmagachan residences) and is screened from view by local topography in some places;
- Landscape designations as the towers would be visible from a smaller area;
- Visual receptors as it would have fewer impacts on visual receptors; and
- Land use and recreation as it would have fewer visual impacts on recreational receptors.

The Preferred Alignment will not make use of Deviation 2 due to the cost and complexities of requiring the larger angle towers capable of achieving near ninety degree turns. The Preferred Alignment aims to balance these constraints and identify an alignment that is safe and practicable to construct.

5. CONSULTATION ON THE PROPOSALS

SSEN Transmission places great importance on, and is committed to, consultation and engagement with all relevant parties, or stakeholders, likely to have an interest in proposals for new projects such as this. Stakeholder consultation and engagement is an essential part of an effective development process.

5.1 Questions for Consideration by Consultees

When providing your comments and feedback, SSEN Transmission would be grateful for your consideration of the questions below:

- Have we explained the need for this Project adequately?
- Have we explained the approach taken to select the Preferred Alignment adequately?
- Are there any factors, or environmental features, that you consider may have been overlooked during the Preferred Alignment selection process?
- Do you feel, on balance, that the Preferred Alignment selected is the most appropriate for further consideration at the EIA and consenting stage?

5.2 Next Steps

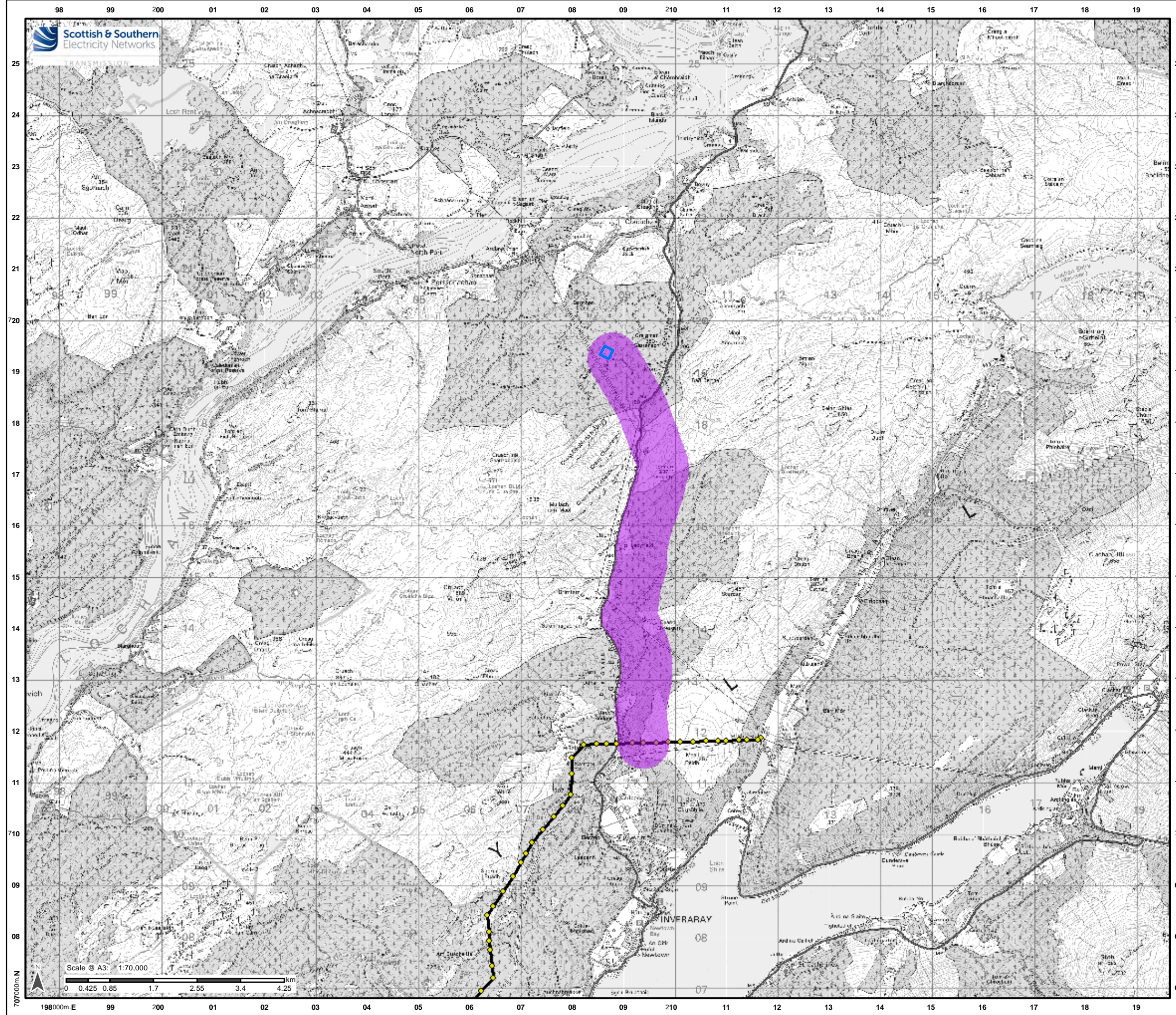
Virtual online and face to face public consultation events will be held, as detailed in the preface of this document. The responses received from these consultation events, and those sought from statutory consultees and other stakeholders, will inform further consideration of the Preferred Alignment put forward, and the identification of a Proposed Alignment to take forward to the next stage on the process.

All comments are requested by **9 May 2022**. A Report on Consultation will be produced which will document the consultations received'

All comments received will inform SSEN Transmission's selection of a Preferred Alignment to be taken forward for EIA and more detailed technical assessment prior to submission of an application for s37 consent.



ANNEX A: FIGURES



Legend

- Original Preferred Route
- Inveraray - Crossaig
- Inveraray - Crossaig OHL
- Proposed Creag Dhubh Substation



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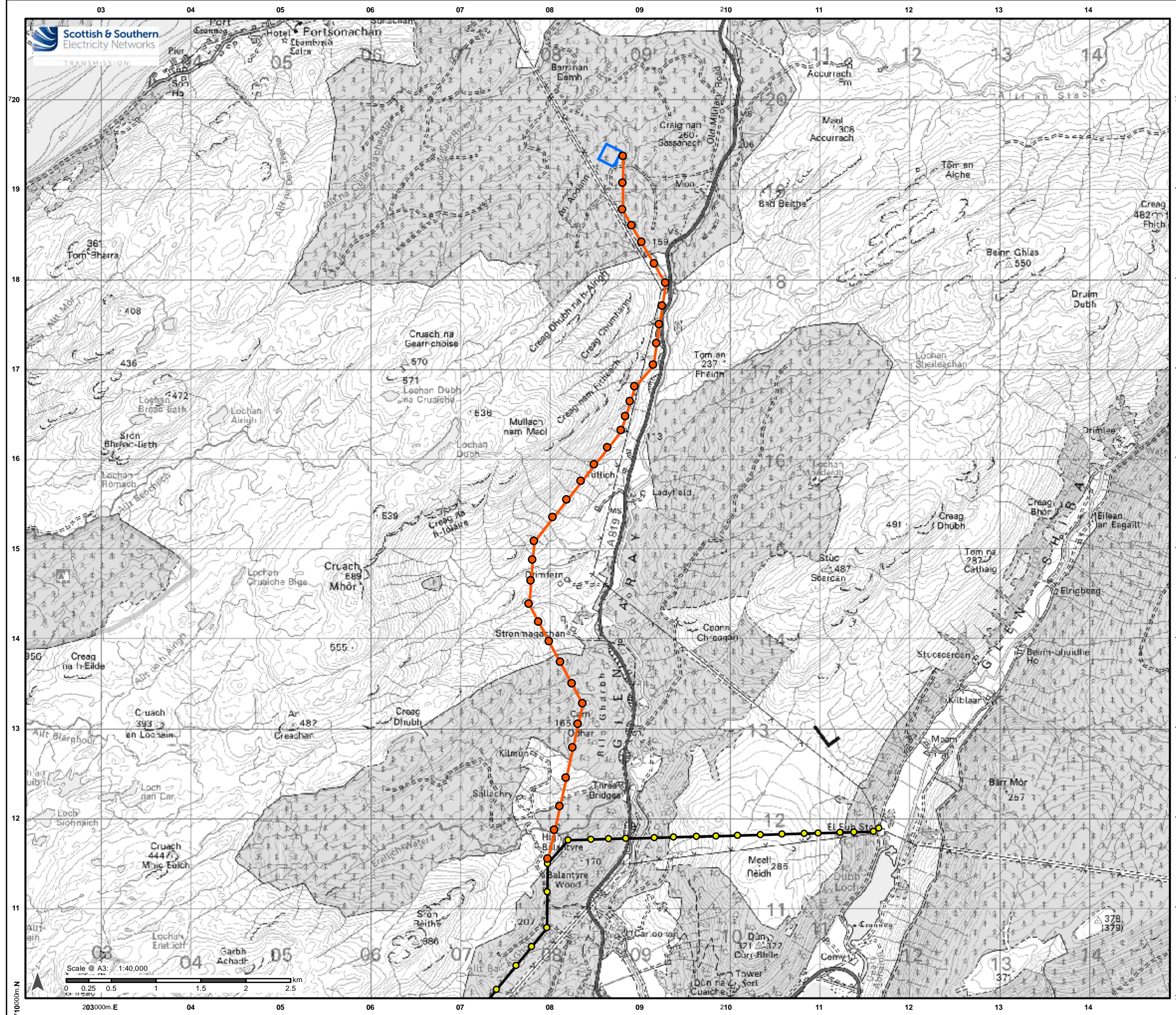
Project No: LT000194
Project: 1620011091

Title: Creag Dhubh to Inveraray 275 kV Overhead Line

Figure 1.1: Original Preferred Route

Drawn by: NJ Date: 05/04/2022

Drawing: R162_11091_Fig1.1_OriginalPreferredRoute_1



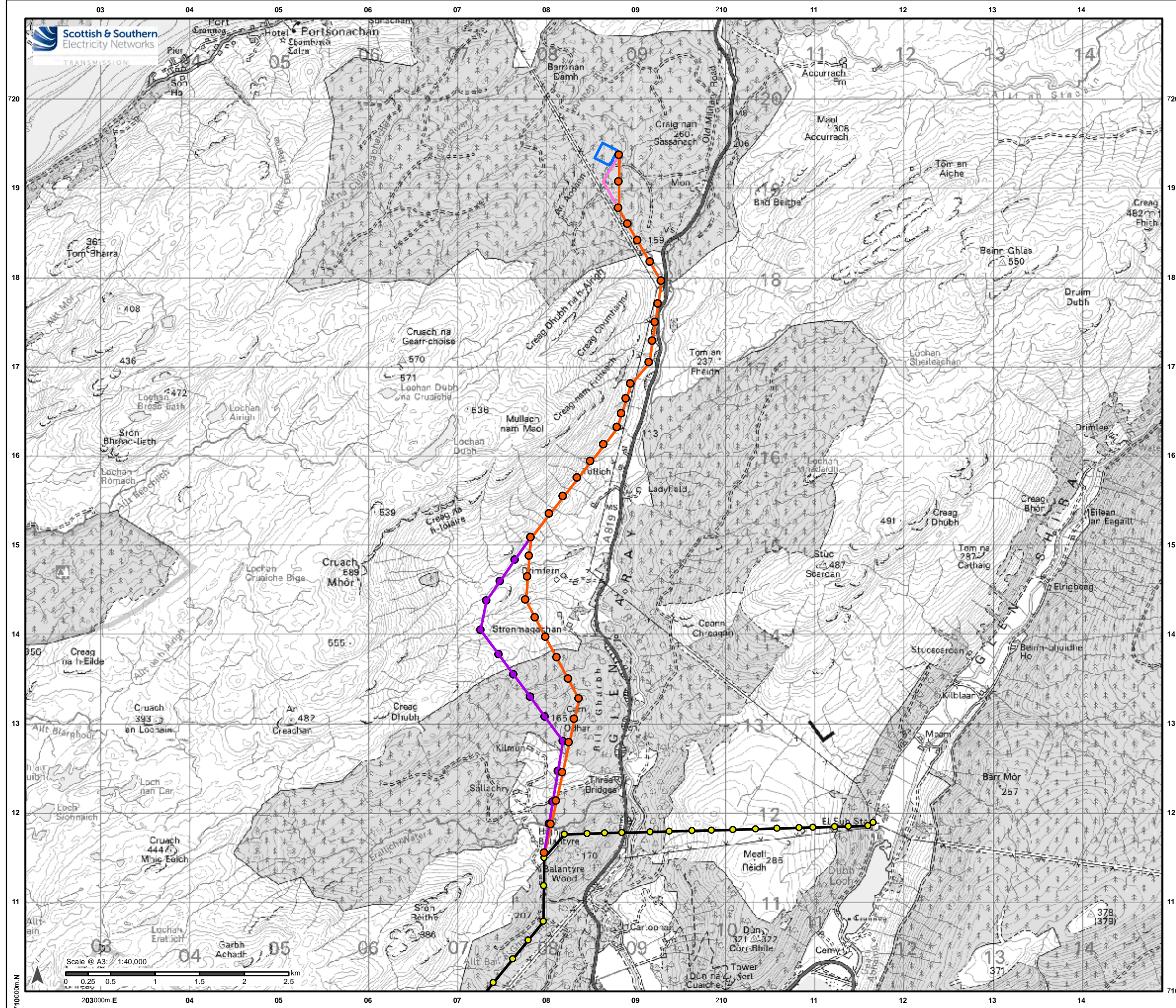
Legend

- Baseline Alignment
- Baseline Alignment Towers
- Inveraray - Crossaig Towers
- Inveraray - Crossaig OHL
- Proposed Creag Dhubh Substation



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Project No:	LT000194
Project:	1620011091
Title:	Creag Dhubh to Inveraray 275 kV Overhead Line
	Figure 3.1: Baseline Alignment
Drawn by:	NJ
Date:	24/03/2022
Drawing:	R162_11091_Fig3.1_BaselineAlignment_1



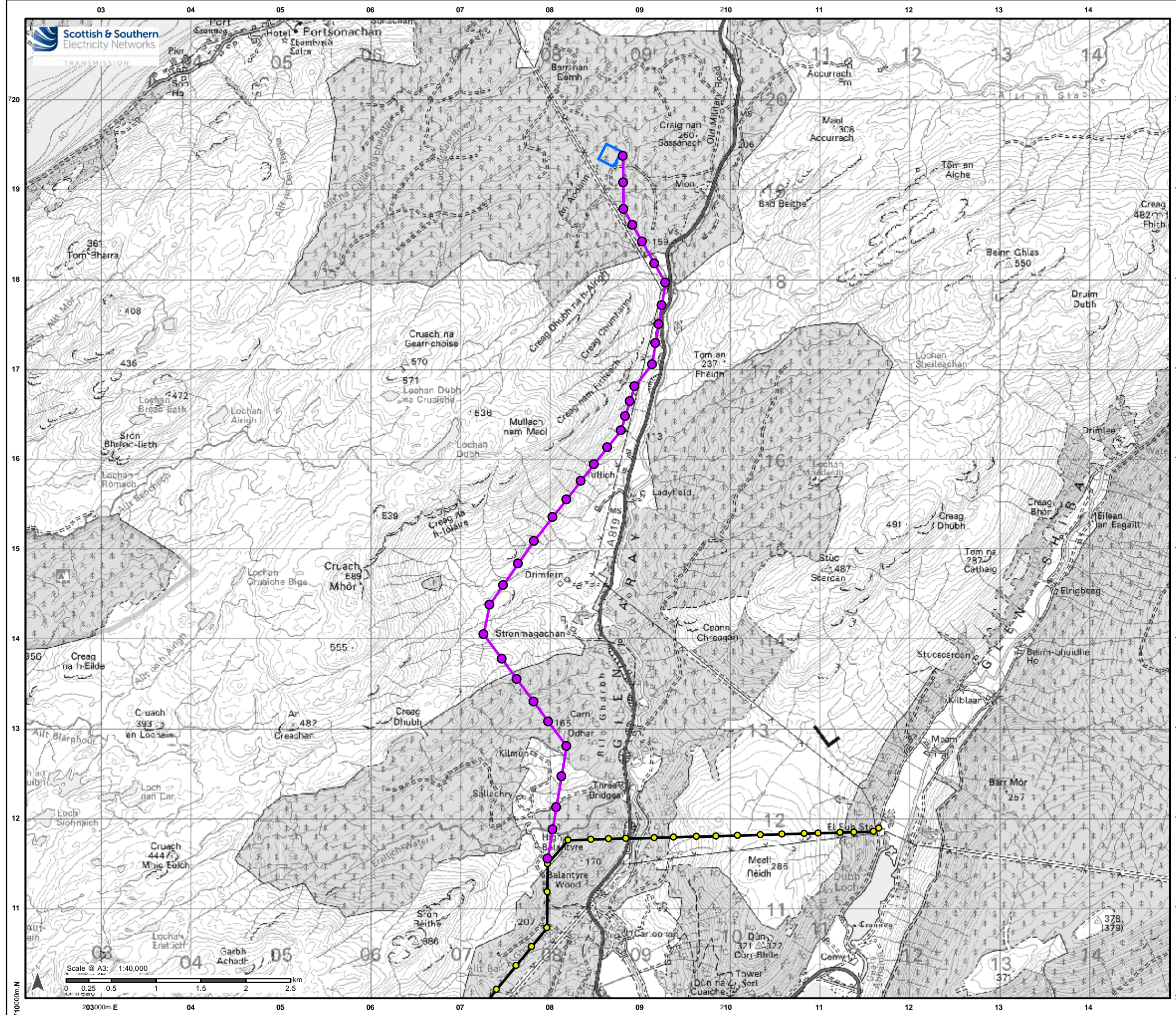
Legend

- Baseline Alignment
- Baseline Alignment
- Deviation 1 Towers
- Deviation 1
- Deviation 2
- Inveraray - Crossaig Towers
- Inveraray - Crossaig OHL
- Proposed Creag Dhubh Substation



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Project:	1620011091
Title:	Creag Dhubh to Inveraray 275 kV Overhead Line
	Figure 3.2: Baseline Alignment with Deviations
Drawn by:	NJ
Date:	24/03/2022
Drawing: R162_11091_Fig3.2_BaselineAlignmentDeviations_1	



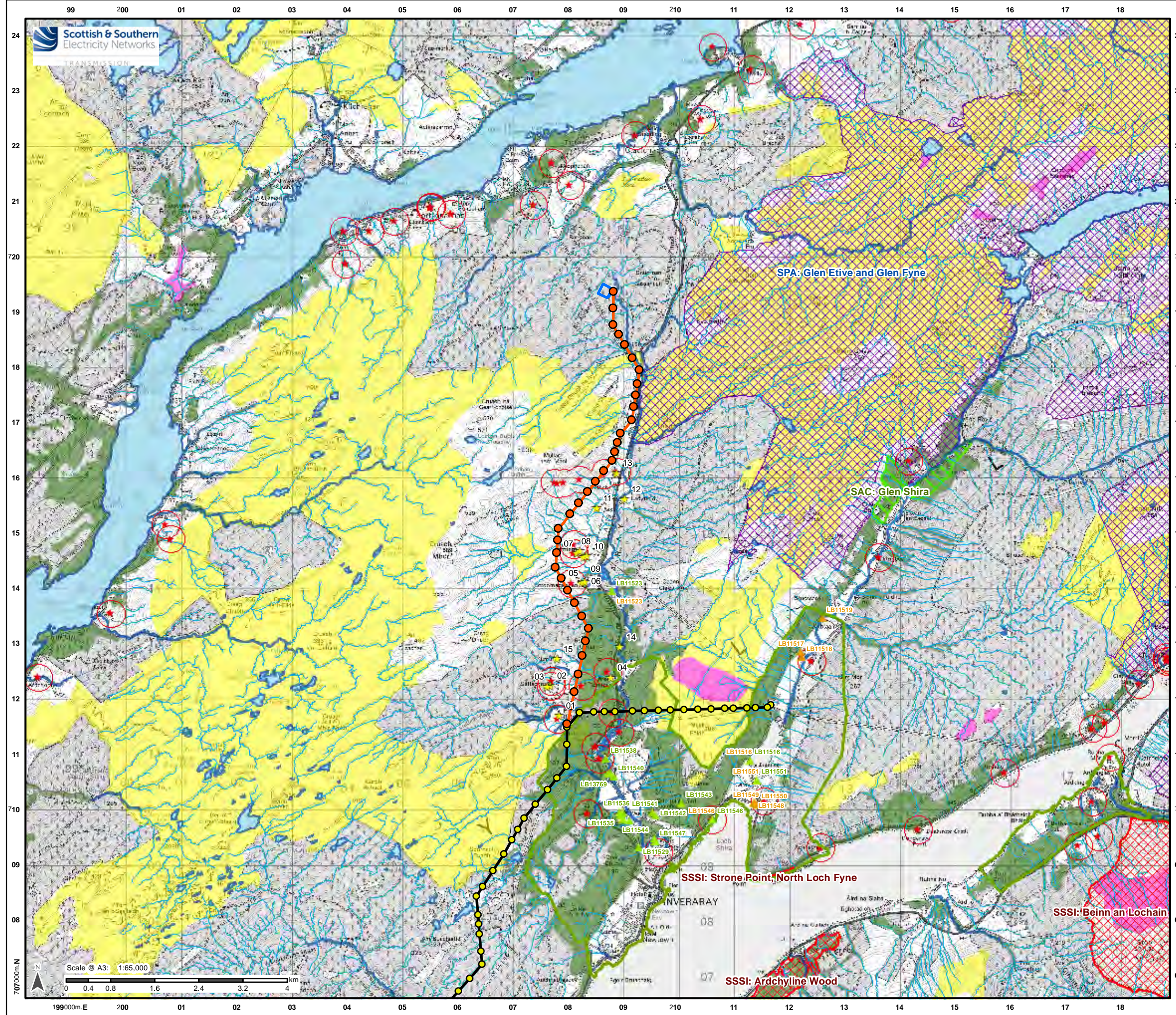
Legend

- Preferred Alignment
- Preferred Alignment Towers
- Inveraray - Crossaig Towers
- Inveraray - Crossaig OHL
- Proposed Creag Dhubh Substation



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Project No: LT000194
 Project: 1620011091
 Title: Creag Dhubh to Inveraray 275 kV Overhead Line
 Figure 4.1: Preferred Alignment
 Drawn by: NJ Date: 24/03/2022
 Drawing: R162_11091_Fig.4.1_PreferredAlignment_1



Legend

- Baseline Alignment
- Baseline Alignment
- Inveraray - Crossaig Towers
- Inveraray - Crossaig OHL
- Proposed Creag Dhubh Substation
- Listed Buildings Route D
- Listed Buildings Route E
- Residential Property
- Private Water Supplies (PWS)
- PWS Buffer (250 m)
- Watercourse
- Waterbody
- Gardens and Designed Landscapes
- Special Area of Conservation
- Special Protection Area
- Site of Special Scientific Interest
- Ancient Woodland Inventory

Peatland Classification

- Class 1
- Class 2



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Project No:	LT000194
Project:	1620011091
Title:	Creag Dhubh to Inveraray 275 kV Overhead Line
	Figure 4.2: Baseline Alignment with Constraints
Drawn by:	NJ
Date:	05/04/2022
Drawing:	R162_11091_Fig4.2_BaselineAlignmentWithConstraints_1