

Consultation Document - Route Selection

LT528 – 529 Balliemeanoch Pump Storage Hydro Overhead Line Grid Connection

September 2026



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GLOSSARY

Term	Definition
Alignment	A centre line of an overhead line, along with location of key angle structures.
Amenity	The natural environment, cultural heritage, landscape and visual quality. Also includes the impact of SHE Transmission's works on communities, such as the effects of noise and disturbance from construction activities.
Conductor	A metallic wire strung from structure to structure, 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.
Environmental Impact Assessment (EIA)	A formal process set out in the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, used to systematically identify, predict, assess and report the likely significant environmental effects of a proposed development. The process includes the preparation of an EIA Report and informs decision-making by the Scottish Ministers.
Gardens and Designed Landscapes (GDLs)	The Inventory of Gardens and Designed Landscapes lists those gardens or designed landscapes which are considered by a panel of experts to be of national importance.
Habitat	Term most accurately meaning the place in which a species lives, but also used to describe plant communities or agglomerations of plant communities.
Kilovolt (kV)	One thousand volts.
Listed Building	Building included on the list of buildings of special architectural or historic interest and afforded statutory protection under the 'Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997' and other planning legislation. Classified categories A – C(s).
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.
National Scenic Area (NSA)	A national level designation applied to those landscapes considered to be of exceptional scenic value.
Overhead line (OHL)	An electric line installed above ground, usually supported by lattice steel towers or poles.
Plantation Woodland	Woodland of any age that obviously originated from planting.
Riparian Woodland	Natural home for plants and animals occurring in a thin strip of land bordering a stream or river.
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. For this project, each indicative route option is approximately 500 m wide. This provides sufficient flexibility to identify and refine potential alignments during the next stage while responding to environmental, engineering and land constraints.
Routeing	The work undertaken which leads to the selection of a proposed alignment, capable of being taken forward into the consenting process under Section 37 of the Electricity Act 1989.

Term	Definition
Scheduled Monument	A monument which has been scheduled by the Scottish Ministers as being of national importance under the terms of the 'Ancient Monuments and Archaeological Areas Act 1979'.
Semi-natural Woodland	Woodland that does not obviously originate from planting. The distribution of species will generally reflect the variations in the site and the soil. Planted trees must account for less than 30% of the canopy composition
Sites of Special Scientific Interest (SSSI)	Areas of national importance. The aim of the SSSI network is to maintain an adequate representation of all natural and semi-natural habitats and native species across Britain.
Span	The section of overhead line between two structures.
Special Area of Conservation (SAC)	An area designated under the EC Habitats Directive to ensure that rare, endangered or vulnerable habitats or species of community interest are either maintained at or restored to a favourable conservation status.
Special Landscape Area (SLA)	Landscapes designated by Argyll and Bute Council which are considered to be of regional/local importance for their scenic qualities.
Special Protection Area (SPA)	An area designated under the Wild Birds Directive (Directive 2009/147/EC) to protect important bird habitats. Implemented under the Wildlife and Countryside Act 1981.
Stakeholders	Organisations and individuals who can affect or are affected by SHE Transmission works.
Study Area	The area within which the corridor, route and alignment study takes place.
Terminal Structure	A structure (tower or pole) required where the line terminates either at a substation or at the beginning and end of an underground cable section.
The National Grid	The electricity transmission network in the Great Britain.
Volts	The international unit of electric potential and electromotive force.
Wild Land Area (WLA)	Those areas comprising the greatest and most extensive areas of wild characteristics within Scotland.

PREFACE

This Consultation Document has been prepared by Ramboll on behalf of Scottish Hydro Electric Transmission plc (SHE Transmission plc), operating and known as Scottish and Southern Electricity Network Transmission (hereafter referred to as 'SSEN Transmission'), to seek comments from all interested parties on the potential route identified for the proposed Balliemeanoch Pump Storage Hydro Overhead Line Grid Connection project.

The Consultation Document is available online at: [Balliemeanoch-pumped-storage-hydro-connection-project](https://www.ssen-transmission.co.uk/balliemeanochpsh)¹.

Public consultation face to face event detailing the proposals described in this document will be held at the following times and location:

Wednesday 23 September 2026

14:00-19:00hrs

Portsonachan Village Hall

Portsonachan

Argyll & Bute

PA33 1BJ

Comments on this document should be sent to:

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All comments are requested by end of day Wednesday 21 October 2026.

¹ <https://www.ssen-transmission.co.uk/balliemeanochpsh>

EXECUTIVE SUMMARY

This Consultation Document invites members of the public, statutory consultees and other key stakeholders to provide comment on the Potential Route for the proposed Balliemanoach Pump Storage Hydro (PSH) Overhead Line (OHL) Grid Connection project ('the Proposed Development').

The Balliemanoach PSH Scheme is a nationally significant, long duration energy storage project designed to deliver up to approximately 1.5 gigawatts (GW) of generating capacity with c.45 GWh of storage, making it the largest pumped storage hydro scheme in Scotland. Subject to consent and commercial agreement, SSEN Transmission is required under its licence obligations to provide a connection to the transmission network. This is anticipated to be achieved via a connection to Creag Dhubh Substation (currently under construction).

A selection process has been undertaken to find a Route Option which seeks to avoid physical, environmental and amenity constraints, and is economically viable, taking into account factors such as altitude, slope, ground conditions and access. SSEN Transmission has identified three route options as follows:

Route Option 1 (RO1) is approximately 4.25 km in length. Commencing at the proposed substation for Balliemanoach PSH Scheme, RO1 extends northeast through mature conifer plantation for approximately 2.28 km. It then turns east and continues for a further 1.97 km before reaching the Creag Dhubh Substation, which is currently under construction.

Route Option 2 (RO2) is approximately 4.05 km in length. Starting at the proposed Balliemanoach PSH Scheme substation, RO2 initially follows northeasterly path of RO1 for 1.44 km. RO2 then takes a more southerly route compared to RO1 through the mature conifer plantation, travelling east for 0.87 km before veering northeast for 1.74 km to reach Creag Dhubh Substation.

Route Option 3 (RO3) is approximately 4.25 km in length. Starting at the proposed Balliemanoach PSH Scheme substation, RO3 initially travels southeast across open moorland for 1.63 km before veering northeast for 2.62 km and travelling through mature conifer plantation to reach Creag Dhubh Substation.

This report presents a comparative analysis of the environmental, engineering and cost criteria of the three route options. From an environmental perspective alone, the potential route is RO1, followed by RO2, with RO3 being least preferred due to its visual prominence and potential impact on blanket bog habitat and Class 2 peat. In engineering terms, the route options perform similarly, though RO2 is preferred with respect to technical considerations such as terrain and access, followed by RO1. From a cost perspective, all route options are very similar, though RO2 is marginally preferred over RO3 and RO1, respectively.

Following comparative environmental, engineering and economic appraisal, RO1 has been identified as the Potential Route for consultation, although, RO2 is also viable. No final decision on the Proposed Route will be made until consultation feedback has been reviewed alongside the continuing technical and environmental assessments.

SSEN Transmission is seeking feedback on the Proposed Development specifically:

1. Have we adequately explained the need for the proposed Balliemanoach Pumped Storage Hydro Connection project?
2. Have we explained the approach taken to select the Potential Route adequately?
3. Are there any factors, or environmental features, that you consider important and should be brought to the attention of the project team?
4. Do you have any other comments (positive or negative) or concerns in relation to the need for the project, the transmission infrastructure requirements or about the potential route?

A Report on Consultation will be published in November 2026 which will document the consultation responses received, and the decisions made in light of these responses, to select a Proposed Route for further design development.

1. INTRODUCTION

1.1 Purpose of Document

- 1.1.1 Scottish Hydro Electric Transmission Plc (SHE Transmission Plc) operating and known as Scottish and Southern Electricity Network Transmission ('SSEN Transmission') is proposing to construct a new approximately 4.5 km 275 kilovolt (kV) overhead line (OHL), to be supported on steel lattice structures, and approximately 0.5 km of 275 kV Underground Cable (UGC), connecting the proposed substation at the Balliemeanoch Pump Storage Hydro (PSH) Scheme with Creag Dhubh Substation (currently under construction) in Argyll and Bute, Scotland ('the Proposed Development').
- 1.1.2 This Consultation Document invites comments from all interested parties on alternatives considered when developing route options, the route options considered (**Figure A-1**, Annex A), the route options appraisal process and selection of the Potential Route.
- 1.1.3 All comments received will inform further consideration of the Potential Route, and subsequent option for its alignment.

1.2 Document Structure

- 1.2.1 This report is structured as follows:
- 1: Introduction – setting out the purpose of the Consultation Document;
 - 2: The Proposed Development – describes the need, strategic alternatives considered, proposed technology solution and typical construction methods;
 - 3: Route Selection Process – sets out the route selection process and methodology that has been applied to date;
 - 4: Description of Routes – describes the route options that have been identified;
 - 5: Comparative Analysis of Routes – analyses each route option against a series of environmental, technical and economic considerations to arrive at a Potential Route;
 - 6: Description of Potential Route – describes the Potential Route identified and summarises the reasons for its selection;
 - 7: Consultation on the Proposals and Next Steps – invites comments on the route assessment process and identification of potential route.
- 1.2.2 This report is supported by a series of figures (see Annex A).

1.3 Next Steps

- 1.3.1 As part of the consultation exercise, comments are sought from members of the public, statutory consultees and other key stakeholders on the Potential Route put forward in this report.
- 1.3.2 A Report on Consultation will be produced which will document the consultation responses received, and the decisions made in light of these.
- 1.3.3 Following identification of a Proposed Route, further technical and environmental surveys will be undertaken to identify a Potential Alignment. Consultation on the Potential Alignment will be undertaken in a similar manner to identification of the Proposed Route, in spring/summer of 2027.

2. THE PROPOSED DEVELOPMENT

2.1 The Need for the Project

- 2.1.1 The Balliemeanoch PSH Scheme is a nationally significant long duration energy storage project designed to deliver up to approximately 1.5 gigawatts (GW) of generating capacity with c.45 GWh of storage, making it the largest pumped storage hydro scheme in Scotland.
- 2.1.2 Subject to consent and commercial agreement, SSEN Transmission is required under its licence obligations to provide a connection for the scheme to the transmission network. This is anticipated to be achieved via a connection to Creag Dhubh Substation (currently under construction).

2.2 Proposed Development Overview

- 2.2.1 The main features of the Proposed Development include approximately 4.5 km of 275 kV OHL commencing at the proposed substation for Balliemeanoch PSH Scheme (to be developed by a third party developer) supported on L8c steel lattice towers (see Plate 2.1). The connection terminates at the Creag Dhubh Substation, which is currently under construction through approximately 0.5 km of 275 kV UGC, and a Cable Sealing End (CSE) Compound. The height of the steel lattice towers is anticipated to be no more than 60 m above ground level (AGL).

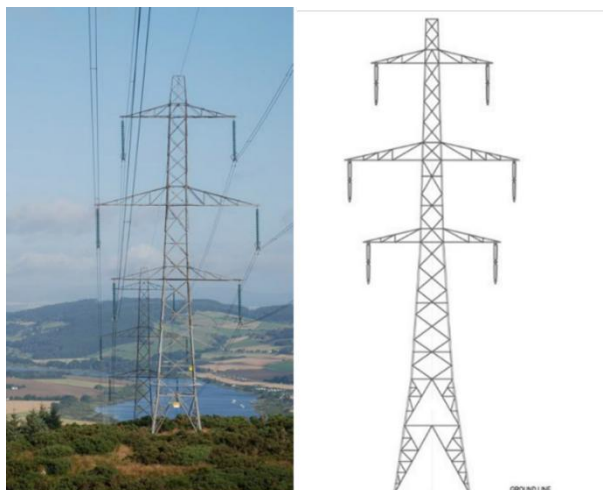


Plate 2.1: Steel Lattice Tower Design

- 2.2.2 The final designation of OHL support type is generally dependent on three main factors: altitude, weather and the topography of the route. The size of supports and span lengths will also vary depending on these factors, with supports being closer together at high altitudes to withstand the effects of greater exposure to high winds, ice and other weather events. The support configuration, height and the distance between supports will therefore only be fully determined after a detailed alignment survey.
- 2.2.3 Near Creag Dhubh Substation, the proposed OHL would transition to UGC at a CSE compound. The UGC would pass beneath the existing 132 kV Inveraray-Taynuilt OHL before terminating within Creag Dhubh Substation, subject to detailed design. A detailed topographical survey will be carried out to identify the proposed positions and heights of each individual tower. The support foundation designs will be supported by ground investigations.

Construction Activities

- 2.2.4 Construction activities are anticipated to consist of six phases, as follows:
- alterations to the existing transmission and distribution networks if required;
 - enabling work (forestry clearance and establishment of temporary construction compound(s);

- erection of support structures;
- conductor stringing (including construction of temporary scaffolding);
- inspections and OHL commissioning; and
- removal of temporary works and site reinstatement.

2.2.5 All construction activities will be undertaken in accordance with a Construction Environmental Management Plan (CEMP), produced by the Principal Contractor and agreed with statutory stakeholders prior to the commencement of construction.

Forestry Removal

2.2.6 The extent of woodland removal which would be required prior to the construction work will be identified and described after the Proposed Alignment has been identified. Removal of sections of commercial forest would be undertaken in consultation with Scottish Forestry and affected landowners.

2.2.7 Any timber removed that is commercially viable would be sold and the remaining forest material would be dealt with in a way that delivers the best practicable environmental outcome. The methods of woodland removal and management of timber would be described in a Woodland Management Document in-line with The UK Forestry Standard² guidance.

Access

2.2.8 Vehicle access will be required to each support structure location during construction to allow excavation and creation of foundations and erection of the support structure. Existing forestry tracks would be used where possible. Preference will be given to lower impact access solutions including the use of low pressure tracked personnel vehicles and temporary track solutions in boggy / soft ground areas to reduce any damage to, and compaction of, the ground.

2.2.9 Access requirements for the Proposed Development will also be dependent upon the type of OHL supports chosen. Consideration of impacts will be undertaken at the alignment stage once the support type has been confirmed. Permanent access to angle / tension pole and tower positions would be desirable for operational and management purposes and for storm control.

Programme

2.2.10 It is anticipated that construction of the Proposed Development would take place over approximately a three-year period, following the granting of consents, although a detailed programming of works would be the responsibility of the Principal Contractor in agreement with SSEN Transmission. Construction is estimated to start in June 2032.

2.3 Alternative Options Considered

2.3.1 Three technology options were considered for the connection between the Balliemanoach PSH Scheme and Creag Dhubh Substation: a full 275 kV OHL solution, a full 275 kV Underground Cable (UGC) solution, and a hybrid OHL/UGC solution.

2.3.2 A full OHL solution was assessed as it is a proven and reliable approach for high-voltage transmission infrastructure, with lower construction and operational costs than a fully underground solution. It would also require less extensive civil engineering works and a smaller permanent footprint. However, overhead infrastructure would be required along the entire route, and some woodland clearance may be necessary.

2.3.3 A full UGC solution was also considered. While this option would reduce the visibility of transmission infrastructure, it would require extensive excavation, cable joint bays and permanent access tracks along the

² The UK Forestry Standard 4th Edition (2017); The Governments' approach to sustainable forestry. [online]. Available at: <https://www.gov.uk/government/publications/the-uk-forestry-standard> [accessed 10/06/26].

route. Due to the challenging terrain, areas of deep peat and sensitive ground conditions, this option would result in greater construction disturbance, increased impacts on soils and peat, and significantly higher costs. It would also require more permanent land take than an overhead line solution.

2.4 Biodiversity Net Gain (BNG)

- 2.4.1 BNG aims to leave biodiversity in a measurably better state than before development. In line with Scottish planning policy, biodiversity considerations have been integrated into the route selection process.
- 2.4.2 A preliminary BNG assessment was undertaken to help identify route options that avoid or reduce impacts on important habitats and maximise opportunities for environmental enhancement. Irreplaceable habitats, such as blanket bog and ancient woodland, were treated as key constraints during route selection, as impacts on these habitats cannot be fully compensated. Details of the Site Optioneering Toolkit and the hotspot map are included in Annex E of the Route Selection Study Report³.
- 2.4.3 SSEN is committed to protecting and enhancing biodiversity. Environmental considerations have informed the development of the Proposed Development and will continue to do so as the design evolves.

2.5 Other Developments

- 2.5.1 A number of electricity transmission projects are being constructed or developed in the wider area around the new Creag Dhubh Substation to support the connection of renewable energy projects and strengthen the electricity network. These include the replacement of the existing Taynuilt to Creag Dhubh OHL, the proposed Creag Dhubh to Dalmally 275 kV OHL connection, and the Creag Dhubh to Inveraray 275 kV OHL. Together, these projects form part of a wider programme of network reinforcement in Argyll.
- 2.5.2 The proximity of these projects to one another has been considered as part of the route selection process, particularly in relation to potential cumulative effects on landscape and visual amenity and the interaction between different pieces of transmission infrastructure.
- 2.5.3 **Figure A-2 Other Developments** illustrates the location of the Proposed Development in the context of other existing, approved, under construction and proposed transmission infrastructure projects in the surrounding area.

³ Route Selection Study Report. LT528-529 Balliemeanoch Pump Storage Hydro Overhead Line Grid Connection. SSEN Transmission, July 2026.

3. DESCRIPTION OF ROUTES

3.1 Route Selection Process

- 3.1.1 The approach to route selection, in identifying and assessing alternative OHL routes, is informed by SSEN Transmission's Routeing Guidance⁴. The guidance develops a process which aims to balance environmental, technical and economic considerations throughout the optioneering process.
- 3.1.2 The standard route selection process follows four principal stages:
- Stage 0: Routeing Strategy Development;
 - Stage 1: Corridor Selection;
 - **Stage 2: Route Selection;** and
 - Stage 3: Alignment Selection.
- 3.1.3 The procedures note that, depending on the scale of the project or character of the area, it may be possible to combine Stages 1 and 2. In this case, given the relatively short distance between the two connection points, together with the fixed location of these connection points, naturally limits the area available for routeing. As a result, Stages 1 and 2 have been combined. In practice, this has been achieved by moving from Stage 0 to Stage 2, with no evaluation of alternative corridors completed.
- 3.1.4 Stage 2, Route Selection, seeks to find a Proposed Route which, where possible, avoids physical, environmental and amenity constraints, is likely to be acceptable to stakeholders, and is economically viable, taking into account factors such as altitude, slope, ground conditions and access. In consideration of these principles, the method of identifying a Potential Route in this study has involved the following four key tasks:
- identification of the baseline situation;
 - identification of route options;
 - environmental analysis of route options; and
 - identification of a Potential Route.
- 3.1.5 On finalisation of the route selection process, SSEN Transmission's Routeing Guidance will be followed as the project progresses through Alignment Selection (Stage 3) and onto the Consenting Process (Stage 4).

3.2 Identification of Route Options

- 3.2.1 A high-level site appraisal was carried out by experienced professionally qualified individuals in various specialist fields to enable an informed combined opinion on how the potential environmental features identified during the baseline studies could influence potential route options. Site appraisals were also undertaken by OHL engineers and other project team members to help inform the technical and economic appraisal of options.
- 3.2.2 For the identification of potential route options for the Proposed Development, a Multi Criteria Analysis (MCA) process was followed, which used GIS to analyse available digital datasets. Digital data were collected to inform the baseline for the route options appraisal. Three route options were identified which took into consideration the most notable constraints. Whilst the routeing process was environmentally design-led, fundamental technical constraints such as terrain were also considered as part of the process.
- 3.2.3 The route options (see **Figure A-1 Site Location and Route Options**) are as follows:
- Route Option 1*
- 3.2.4 Route Option (RO) 1 is approximately 4.25 km in length. Commencing at the proposed substation for Balliemeanoch PSH Scheme, RO1 extends northeast through mature conifer plantation for approximately 2.28

⁴ Scottish & Southern Electricity Networks, 2020. PR-NET-ENV-501: Procedures for Routeing Overhead Lines and Underground Cables of 132 kV and above.

km. It then turns east and continues for a further 1.97 km before reaching the Creag Dhubh Substation, which is currently under construction. RO1 begins at an elevation of approximately 390 m Above Ordnance Datum (AOD) at the Balliemeanoch PSH Scheme, descending to around 290 m AOD at the point where it veers east, before falling further to approximately 205 m AOD at Creag Dhubh Substation.

Route Option 2

- 3.2.5 RO2 is approximately 4.05 km in length. Starting at the proposed Balliemeanoch PSH Scheme substation, RO2 initially follows northeasterly path of RO1 for 1.44 km. RO2 then takes a more southerly route compared to RO1 through the mature conifer plantation, travelling east for 0.87 km before veering northeast for 1.74 km to reach Creag Dhubh Substation. RO2 begins at an elevation of 390 m AOD at the Balliemeanoch PSH Scheme, it drops to 320 m AOD at the point at which it deviates from RO1, and continues to descend to 205 m AOD at Creag Dhubh Substation.

Route Option 3

- 3.2.6 RO3 is approximately 4.25 km in length. Starting at the proposed Balliemeanoch PSH Scheme substation, RO3 initially travels southeast across open moorland for 1.63 km before veering northeast for 2.62 km and travelling through mature conifer plantation to reach Creag Dhubh Substation. RO3 begins at an elevation of 390 m AOD at the Balliemeanoch PSH Scheme and ascends to a maximum altitude of 521 m AOD at the point in which it veers northeast, before descending down to 205 m AOD at Creag Dhubh Substation.

4. COMPARATIVE ANALYSIS OF ROUTES

4.1 Overview and Assumptions

- 4.1.1 The comparative appraisal for each route option has been completed in accordance with the methodology set out in SSEN Transmission guidance. The guidance states that each route 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.
- 4.1.2 The comparative appraisal has been undertaken at an early stage of project development and is based primarily on available desk-based information. Detailed field surveys and site investigations have not yet been completed across the study area. As a result, the findings should be viewed as indicative and proportionate to the current stage of design. In particular:
- route corridors are indicative and do not represent a final alignment;
 - tower locations have not been fixed and will be refined during subsequent design stages;
 - detailed habitat, ornithology and protected species surveys remain to be completed;
 - peat depth and peat condition require further investigation; and
 - forestry felling requirements and access arrangements may change as alignment selection progresses.
- 4.1.3 A Red / Amber / Green (RAG) rating has been applied to each criterion to indicate the potential for each Route Option to be constrained, with RED indicating a high potential for constraint, AMBER indicating intermediate potential for constraint, and GREEN indicating low potential for constraint. It should be noted that a RED or AMBER rating does not necessarily indicate that the route option would be unacceptable in planning terms, but rather indicates the need for further consideration of the potential to mitigate potentially adverse effects. Similarly, a GREEN rating does not necessarily indicate planning acceptability.

4.2 Environmental

Overview

- 4.2.1 The key environmental and consenting constraints identified within the Area of Search are summarised below (see **Figure A-3 Route Options and selected Environmental Features**):
- Protected Species:
 - Potential presence of protected species (including European Protected Species, such as bats and otter) and those identified as priority species on the Scottish Biodiversity List (SBL), such as pine marten, water vole, and red squirrel.
 - Habitats:
 - Presence of Annex I blanket bog habitat.
 - Ornithology:
 - Desk-based surveys have recorded a number of Schedule 1 species under the Wildlife and Countryside Act 1981, as amended (WCA) or red listed Birds of Conservation Concern (BoCC), including golden eagle, white-tailed eagle, hen harrier, osprey, peregrine falcon and barn owl.
 - Hydrology, Hydrogeology and Geology
 - Watercourses and associated hydrological sensitivities.
 - Areas of carbon-rich soils and peatland, including Class 2 peatland.
 - Landscape and Visual
 - Location within the North Argyll Local Landscape Area (LLA).
 - Sensitivity of landscape.

- Sensitivity of and visual receptors (such as the settlements of Kilchrenan and Loch Awe, cultural heritage receptors such as Kilchurn Castle, and transport routes such as the B845 and A85), particularly where skylining or exposure may occur.
- Forestry
 - Areas of commercial conifer plantation forestry requiring potential felling.
- Planning
 - Multiple existing or proposed OHLs in the vicinity of Creag Dhubh Substation.

4.2.2 None of the route options intersect with, or pass in close proximity to, any nationally or regionally designated ecological or ornithological sites. The nearest statutory site is Glen Etive and Glen Fyne SPA, located approximately 1.2km east of all route options. Similarly, no Ancient Woodland has been identified within the route options. All route options have moderate (amber RAG rating) potential to encounter ornithological constraints as they all pass through areas of woodland edge habitat and moorland that could support Schedule 1 (golden eagle, white-tailed eagle, goshawk, hen harrier, and divers), and red listed BoCC (e.g. curlew and black grouse) species. All route options avoid larger watercourses and are situated outside of Drinking Water Protected Areas.

4.2.3 None of the route options would directly affect any designated cultural heritage assets or Listed Buildings, setting impacts are also deemed unlikely due to distance and intervening landscape. All route options have a green RAG rating for likelihood of buried archaeology.

4.2.4 All route options lie on Class 6.3 land (rough grazing), with low agricultural sensitivity. There are no core paths or recreational points of interest within any of the route options. No residential properties are located within 1 km of any route option.

4.2.5 All route options lie largely within the Argyll and Bute Local Landscape Area. All route options have potential to impact its special qualities, although construction impacts would be localised and temporary, and operational effects limited to the immediate vicinity, all routes are assigned an amber rating.

RO1

4.2.6 RO1 intersects areas of woodland, watercourses and potential blanket bog and scrub heathland habitat with the potential to support protected species, presenting a moderate (amber) risk. RO1 is underlain by Class 5 peatland.

4.2.7 All route options lie within Landscape Character Type 40 (Craggy Upland – Argyll) and would introduce a new linear feature, resulting in localised effects on landscape character. RO1 would require more tree felling but would benefit from forestry screening. Annat and Lochawe would have limited views of RO1 (least prominent) and be largely screened from Kilchurn Castle.

4.2.8 RO1 passes through 3.45 km of commercial conifer woodland, requiring corridor clearance and associated felling, with potential for wider windthrow effects

RO2

4.2.9 RO2 intersects areas of woodland, watercourses and potential blanket bog and scrub heathland habitat with the potential to support protected species, presenting a moderate (amber) risk. RO2 is underlain by Class 5 peatland.

4.2.10 All route options lie within Landscape Character Type 40 (Craggy Upland – Argyll) and would introduce a new linear feature, resulting in localised effects on landscape character. RO2 would require more tree felling but

would benefit from forestry screening. Annat and Lochawe would have clear views of RO2 (moderately prominent) and be partially visible from Kilchurn Castle.

- 4.2.11 RO2 passes through 3.31 km of commercial conifer woodland, requiring corridor clearance and associated felling, with potential for wider windthrow effects

RO3

- 4.2.12 RO3 intersects areas of woodland and watercourses with the potential to support protected species, presenting a moderate (amber) risk. RO3 passes through the shortest stretch of woodland, though upon exiting the woodland, it traverses peatland habitats comprising Annex I blanket bog and heathland. 22.28% of RO3 overlaps irreplaceable habitat (blanket bog) resulting in a least preferred (red) RAG rating for Habitat and Biodiversity. RO3 is underlain by higher sensitivity Class 2 peatland, therefore is least preferred with regard to soils.

- 4.2.13 All route options lie within Landscape Character Type 40 (Craggy Upland – Argyll) and would introduce a new linear feature, resulting in localised effects on landscape character. RO3 would be most prominent, crossing more exposed areas and resulting in greater disruption to the undeveloped upland character, therefore it is considered least preferable. Annat and Lochawe would have extensive views of RO3 (most prominent with strong skylining potential) and it would be clearly visible from Kilchurn Castle. Screening from intervening landform and woodland is limited, increasing visibility and interaction with receptors.

- 4.2.14 RO3 passes through a shorter 1.5 km area of commercial conifer woodland, requiring less corridor clearance and associated felling.

Summary

- 4.2.15 RO1 is identified as the environmental potential route as it represents the best overall performing option on balance across environmental topics when compared to RO2 and RO3.

- 4.2.16 While RO1 and RO2 are broadly comparable in terms of environmental constraints, RO1 performs better in key areas, particularly landscape and visual effects. Both routes require similar levels of woodland removal within commercial forestry; however, this can potentially be reduced at the alignment stage by utilising existing forestry breaks and tracks.

- 4.2.17 The key differentiator between RO1 and RO2 is visual impact. RO1 is the least visually prominent option, benefitting from lower-lying topography and more effective screening from existing forestry and landform. As a result, it would generate the lowest overall visibility and the least potential for adverse visual effects. Views from settlements, transport routes, recreational receptors and elevated vantage points would typically be constrained, filtered or limited to brief glimpses. By comparison, RO2 would result in more frequent and clearer views, a greater potential for skylining, and consequently higher levels of visual effect.

- 4.2.18 RO3 is the least preferred route for the following primary reasons:

- the route would result in the greatest loss of and impact on sensitive habitat, in particular Annex I blanket bog habitat;
- while all three routes are likely to have deep peat present, the majority of RO3 is classified as Class 2 (nationally important carbon-rich soils); also includes 22.28% of Annex I blanket bog and heathland (irreplaceable habitat).
- the route is the most elevated and visually prominent of the three options, generating the clearest and most extensive views from settlements, transport routes, recreational paths and elevated vantage points; and
- the route does not benefit from as much screening from commercial forestry and intervening landform as RO1 and RO2.

- 4.2.19 Although RO3 would reduce woodland loss relative to RO1 and RO2, this benefit is outweighed by its significantly greater impacts on peatland, habitats, and visual amenity.
- 4.2.20 Overall, RO1 is favoured because it achieves the most balanced outcome: it avoids the substantial environmental constraints associated with RO3, while also offering clear advantages over RO2 in terms of reduced visibility and visual effects.
- 4.2.21 The findings of the environmental appraisal are summarised in **Table 5.1**.

Table 4.1: Environmental RAG Summary

Route	RAG Impact Rating – Environmental														
	Natural Heritage					Cultural Heritage		People	Landscape and Visual			Land Use			Planning
	Designations	Protected Species	Habitats	Ornithology	Hydrology, Geology & Hydrogeology	Designations	Cultural Heritage Assets	Proximity to Dwellings	Designations	Landscape Character	Visual	Agriculture	Forestry	Recreation	Policy and Proposals
1	Green	Yellow	Yellow	Yellow	Green	Green	Green	Green	Yellow	Yellow	Yellow	Green	Yellow	Green	Yellow
2	Green	Yellow	Yellow	Yellow	Green	Green	Green	Green	Yellow	Yellow	Yellow	Green	Yellow	Green	Yellow
3	Green	Yellow	Red	Yellow	Yellow	Green	Green	Green	Yellow	Yellow	Red	Green	Yellow	Green	Yellow

4.3 Technical

Overview

- 4.3.1 Key engineering constraints identified within the Area of Search are summarised below. Overall, the Area of Search is characterised by the following key constraints:

- Major Crossings
 - The Area of Search requires interaction with existing transmission infrastructure, including the Inveraray – Taynuilt 132 kV OHL.
 - Such crossings require appropriate clearances, specific design solutions and coordination during construction and operation.
- Elevation
 - The Area of Search is located within upland terrain, with elevations generally exceeding 200 m AOD and locally exceeding 400 m – 500 m AOD.
 - Higher elevations are associated with increased exposure to adverse weather conditions.
- Flooding
 - Localised areas of surface water and small watercourse flood risk are present across the Area of Search.
 - These are typically associated with drainage features and may influence tower siting and access design.
- Terrain
 - The terrain is characterised by gently undulating upland landform with localised areas of steeper slopes.
 - Topographical variation may influence routing and construction methods.

- Peatland
 - The Area of Search is underlain by deep peat across much of its extent, including areas of Class 2 and Class 5 peatland.
 - Peatland conditions influence foundation design, access requirements and construction techniques.
- Access
 - Access is partly constrained by distance from existing infrastructure, particularly at the proposed Balliemanoach Substation.
 - Existing forestry tracks provide access across parts of the Area of Search, although additional access provision may be required.

4.3.2 All route options include one major crossing of the existing 132 kV Inveraray-Taynuilt OHL near Creag Dhubh Substation and are given an amber RAG rating. No public road crossings are identified for any route, only access track crossings that are lightly used.

4.3.3 All route options lie entirely above 200 m AOD in upland terrain, with sections exceeding 300 m – 400 m, and RO3 reaching approximately 500 m. All are given a red RAG rating for elevation. Flood risk for all route options is driven by local drainage and surface water processes. Surface water flooding occurs at several locations, with an extent broadly comparable between options, all route options are allocated a Red RAG rating for flooding.

4.3.4 An unexploded ordnance (UXO) desk study found no evidence of UXOs or significant sources of contamination across the route options. All routes pass through deep peat (Class 2 and Class 5), presenting engineering challenges and likely requiring larger foundations and difficult access.

RO1

4.3.5 Flood risk for all route options is driven by local drainage and surface water processes. RO1 follows generally higher ground and shows limited interaction with river flood extents, confined to small areas of low-probability (0.5% annual chance) flooding.

4.3.6 Steep terrain can constrain routing, RO1 has the lowest maximum slope (10.5%) with mostly mild to moderate gradients, assigned an amber RAG rating. RO1 has good access overall, with existing tracks close to most of

the route. All route options are estimated to require approximately seven angle towers and are therefore given a green RAG rating, with no preference between them.

- 4.3.7 All route options are a sufficient distance from properties, wind turbines, communication masts and urban areas, thus are given a green RAG rating for proximity. Route lengths for all three options are comparable.

RO2

- 4.3.8 Flood risk is for all route options is driven by local drainage and surface water processes. RO2 crosses a greater number of drainage features than RO1, resulting in slightly increased interaction with flood extents.
- 4.3.9 Steep terrain can constrain routing, RO2 has a low maximum slope (11.1%) with a larger flatter section than RO1, assigned an amber RAG rating. RO2 has good access overall, with existing tracks close to most of the route.

RO3

- 4.3.10 Flood risk is for all route options is driven by local drainage and surface water processes. RO3 largely avoids main river corridors and remains on elevated ground, resulting in minimal river-flood interaction limited to low-probability areas.
- 4.3.11 Steep terrain can constrain routing, RO3 is steepest (max 16.3%) with a prolonged decline, making it most constrained, assigned an amber RAG rating. RO3 has slightly poorer access overall compared to RO1 and RO2, with an additional section approximately 0.75 km from access, increasing difficulty.

Summary

- 4.3.12 Based on the technical appraisal, all route options scored similarly, the findings of the technical appraisal are summarised in **Table 5.2**. In accordance with the SSEN Transmission's Routeing Guidance ⁵, RO2 is identified as the engineering potential option, having the most favourable terrain and good overall proximity to access. RO1 is considered the second preferred option, with similarly favourable access and terrain. RO3 is the least preferred from an engineering perspective due to more challenging terrain and access requirements, although it remains feasible with a higher associated risk.

Table 4.2: Technical Appraisal RAG Summary

Category	Option 1	Option 2	Option 3
Infrastructure Crossing			
Major Crossings			
Roads			
Environmental Design			
Elevation			
Atmospheric Pollution			
Contaminated Land			
Flooding			
Ground Condition			
Terrain			
Peatland			

⁵ Scottish & Southern Electricity Networks, 2020. PR-NET-ENV-501: Procedures for Routeing Overhead Lines and Underground Cables of 132 kV and above.

Construction and Maintenance			
Access			
Angle Towers			
Proximity			
Clearance Distance			
Windfarms			
Communication Masts			
Urban Developments			
Metallic Pipes			
Other Considerations			
Route Length			
DNO Crossings			
ESQCR			

4.4 Cost

Overview

- 4.4.1 A comparative analysis of the route options against the cost criteria has been undertaken to identify the optimal route option(s). The cost appraisal of each route option is summarised in the sections below.
- 4.4.2 **Table 5.3** summarises the cost appraisal RAG ratings for the three route options. The RAG criteria are based on the lowest-cost option receiving a baseline score of 100%, with each other option expressed as a percentage increase above this baseline. Options below 120% of the baseline are rated Low; options between 120% and 140% are rated Medium; and options above 140% are rated High.

Table 4.3: Cost Appraisal RAG Summary

Cost Consideration	Factor	RAG Impact Rating Per Route		
		1	2	3
Capital	Construction			
	Diversions			
	Public Road Improvements			
	Tree Felling			
	Land Assembly			
	Consent Mitigations			
Operational	Inspections			
	Maintenance			

Summary

- 4.4.3 The more favourable forestry cost rating assigned to RO3 reflects the significantly reduced requirement for forestry clearance when compared with RO1 and RO2. RO3 passes through approximately 1.5 km of

commercial conifer plantation, whereas RO1 and RO2 pass through over 3 km of plantation woodland, resulting in higher anticipated felling and woodland management requirements for those route options

- 4.4.4 With respect to cost, RO2 is identified as marginally preferred. RO3 is marginally more costly, with a Green RAG status at **100.86%** of the cost of RO2. RO1 is the marginally least preferred option from an economic perspective, with a Green RAG status at **101.14%** of the cost of RO2. The cost estimates are predominantly driven by the differences in route length.

5. DESCRIPTION OF THE POTENTIAL ROUTE

5.1 Overview

- 5.1.1 The environmental comparative analysis concludes that RO1 is the Potential Route (see **Figure A-4 Potential Route Option (RO1) and selected Environmental Features**), as it represents the best overall environmental balance across environmental topics when compared to RO2 and RO3. While RO1 and RO2 are broadly comparable in terms of environmental constraints, RO1 performs better in key areas, particularly landscape and visual effects. RO3 is the least preferred option, largely due impacts to blanket bog habitats, Class 2 peatland, and visual amenity. Further detail of the environmental comparative analysis is included in the Environmental Route Selection Report⁶.
- 5.1.2 The engineering comparative analysis concludes that RO2 is preferred when compared to RO1 and RO3, as it represents the best overall balance across engineering topics. RO2 has the most favourable terrain and best overall proximity to access. RO1 is considered the second preferred option, with marginally less favourable access and terrain. RO3 is the least preferred from an engineering perspective due to more challenging terrain and access requirements. Further detail of the engineering comparative analysis is included in the Detailed Engineering Appraisal of Route Options Report⁷.
- 5.1.3 The cost appraisal concludes that RO2 is marginally preferred from a cost perspective. RO3 is estimated to cost 0.86% more than RO2, and RO1 is estimated to cost 1.14% more than RO2. The cost appraisal was predominantly based on the length of each respective route option.
- 5.1.4 The multi-disciplinary appraisal concluded that the environmental benefits of RO1 outweigh the engineering and cost advantages associated with RO2. The engineering and cost differences between RO1 and RO2 are relatively small, whereas the landscape and visual differences are considered more meaningful. This conclusion is driven principally by the lower landscape and visual effects of RO1.
- 5.1.5 Although RO1 is marginally less favourable in engineering and cost terms and would require greater woodland felling than RO3, these constraints are relatively minor and can be effectively managed through design and construction measures. By comparison, the environmental benefits of RO1, particularly in relation to landscape, visual amenity, and ecological receptors, are more substantial and less readily mitigated. Consequently, RO1 is considered to provide the most balanced and sustainable overall outcome.

5.2 Potential Route

- 5.2.1 For the reasons set out above, the Potential Route is **RO1**.
- 5.2.2 RO1 is approximately 4.25 km in length. Commencing at the proposed substation for Balliemanoach PSH Scheme, RO1 extends northeast through mature conifer plantation for approximately 2.28 km. It then turns east and continues for a further 1.97 km before reaching the Creag Dhubh Substation, which is currently under construction. RO1 begins at an elevation of approximately 390 m AOD at the Balliemanoach PSH Scheme, descending to around 290 m AOD at the point where it veers east, before falling further to approximately 205 m AOD at Creag Dhubh Substation.

⁶ SSEN Transmission. Environmental Route Selection Report. LT528 – 529 Balliemanoach Pump Storage Hydro Overhead Line Grid Connection. July 2026. <https://www.ssen-transmission.co.uk/balliemanoachpsh>

⁷ SSEN Transmission. Detailed Engineering Appraisal of Route Options Report. LT528 – 529 Balliemanoach Pump Storage Hydro Overhead Line Grid Connection. June 2026. <https://www.ssen-transmission.co.uk/balliemanoachpsh>

6. CONSULTATION ON THE PROPOSALS

- 6.1.1 SHE Transmission plc places great importance on, and is committed to, consultation and engagement with all 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.

6.1 Questions for Consideration by Consultees

- 6.1.2 When providing your comments and feedback, SHE Transmission would be grateful for your consideration of the questions below:
- Have we adequately explained the need for the proposed Balliemanoach Pumped Storage Hydro Connection project?
 - Have we explained the approach taken to select the Potential Route adequately?
 - Are there any factors, or environmental features, that you consider important and should be brought to the attention of the project team?
 - Do you have any other comments about the Potential Route?

6.2 Next Steps

- 6.2.1 A series of public exhibitions will be held. The responses received, and those sought from statutory consultees and other key stakeholders, will inform further consideration of the route options put forward, and the identification of a Proposed Route to take forward.
- 6.2.2 All comments are requested by **21 October 2026**. A Report on Consultation will be produced which will document the consultations received, and the decisions made in light of these responses.
- Following the identification of a Proposed Route, further technical and environmental surveys would be undertaken to identify a Potential Alignment. Consultation on a Proposed Alignment will be undertaken in a similar manner to the identification of the Proposed Route, in the spring/summer of 2027.

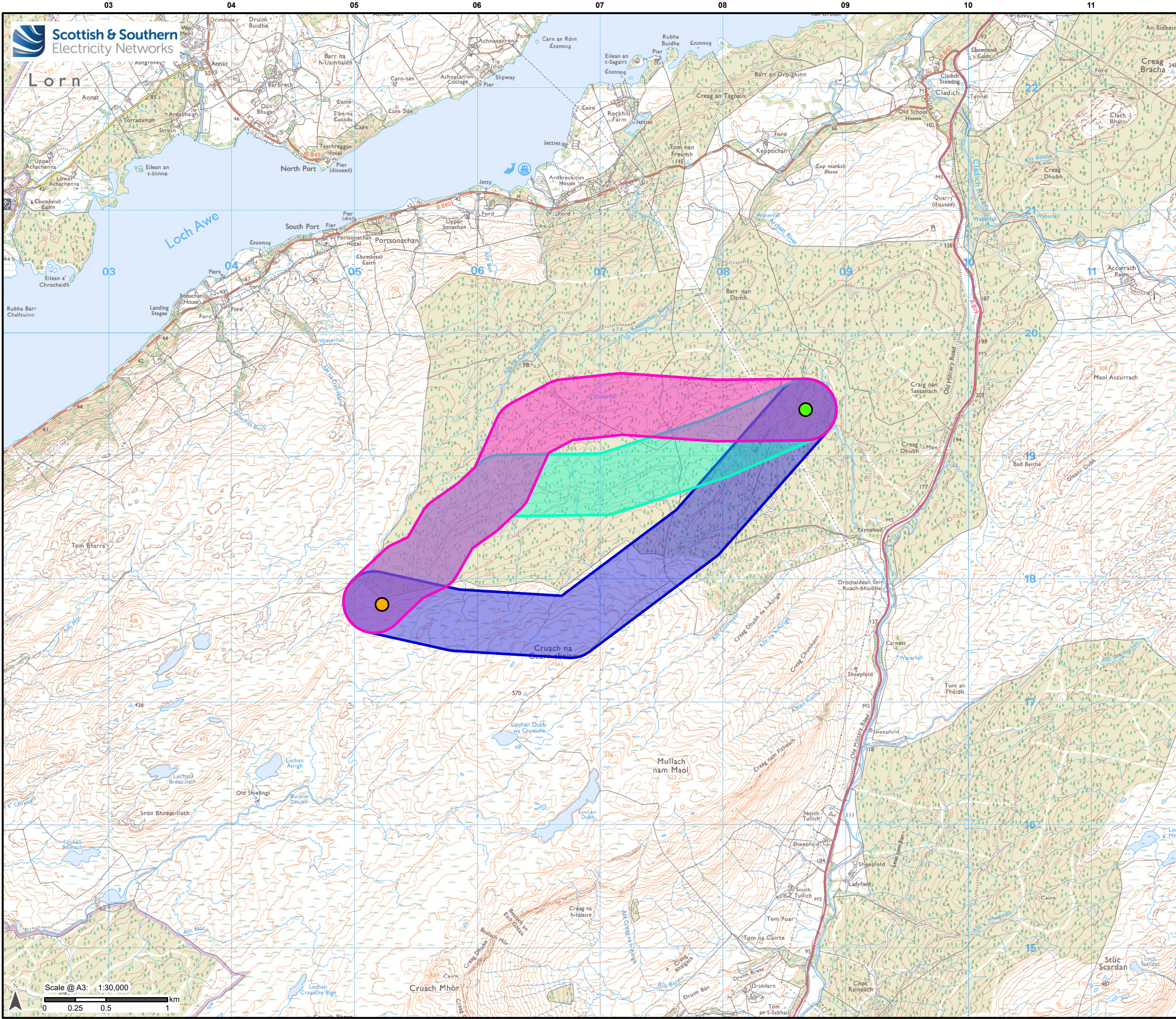
ANNEX A

Figure A-1 Site Location and Route Options

Figure A-2 Other Developments

Figure A-3 Route Options and selected Environmental Features

Figure A-4 Potential Route Option (RO1) and selected Environmental Features



Legend

Route Option 1: 500m Corridor

Route Option 2: 500m Corridor

Route Option 3: 500m Corridor

Balliemanoach PSH Scheme Substation

Creag Dubh Substation



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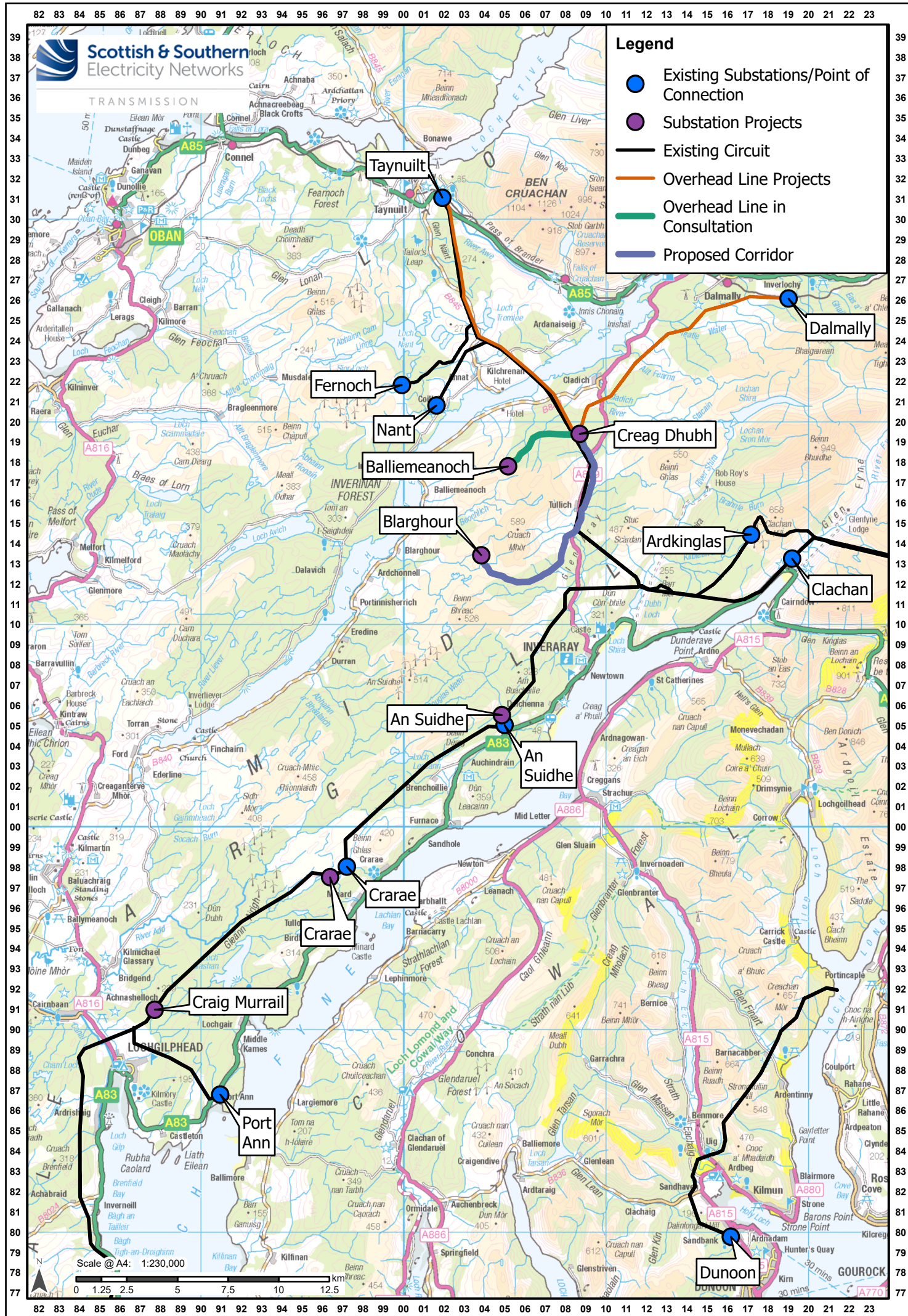
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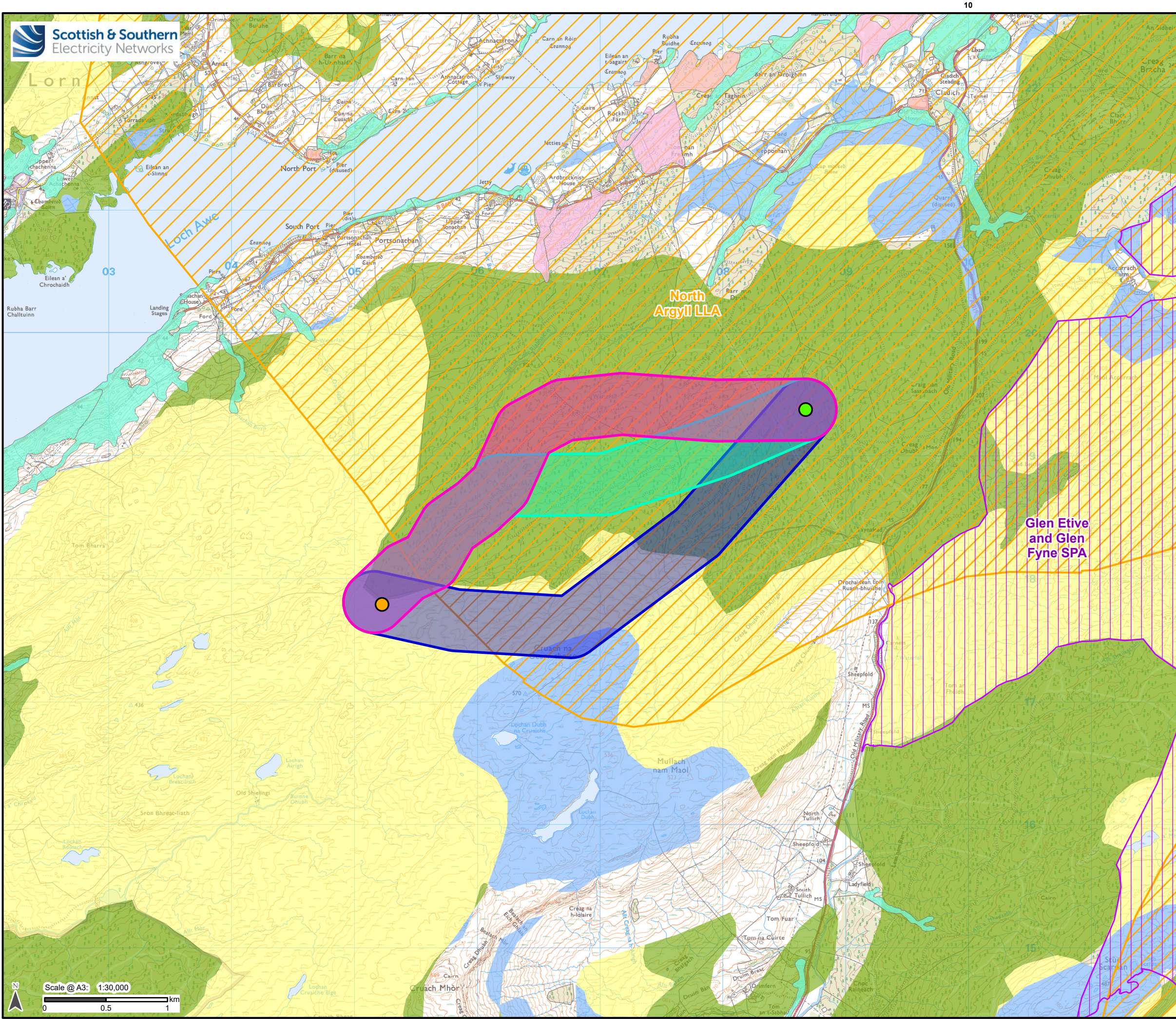
Figure 1: Route Options

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Legend

Route Option 1: 500m Corridor

Route Option 2: 500m Corridor

Route Option 3: 500m Corridor

Balliemanoach PSH Scheme Substation

Creag Dubh Substation

Ecological and Ornithological Designations

Special Protection Areas

Ancient Woodland

Ancient (of semi-natural origin)

Long-Established (of plantation origin)

Other (on Roy map)

Carbon and Peatland Importance

Class 2

Class 3

Class 5

Landscape Designation

Local Landscape Area (formerly known as Area of Panoramic Quality)

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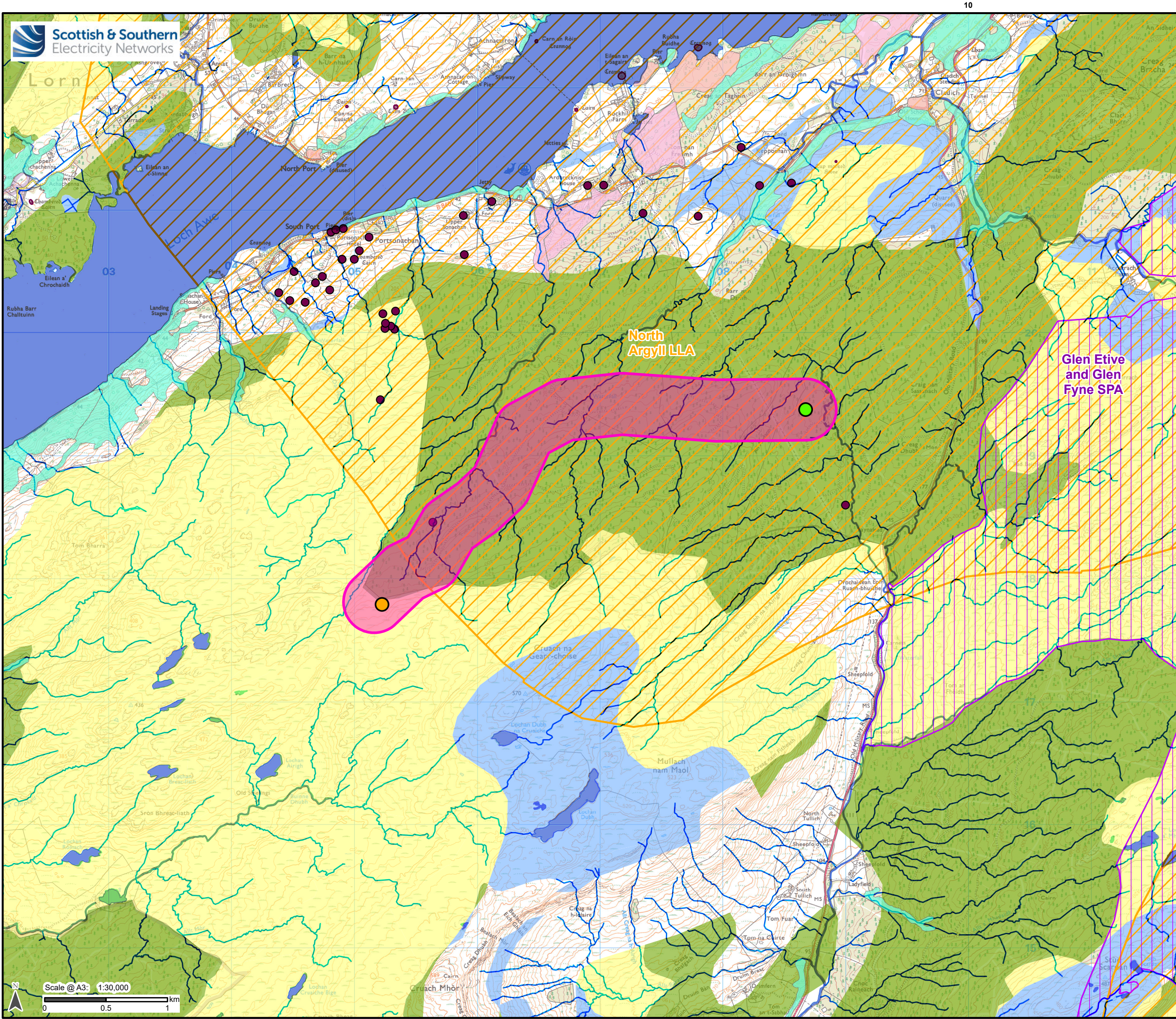
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Figure 3: Environmental Constraints

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Date: 10/09/2026

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Legend

Route Option 1: 500m Corridor

Balliemeanoch PSH Scheme Substation

Creag Dubh Substation

Heritage Constraints

Non-Designated Heritage Asset

Scheduled Monument

Water Features

Watercourse

Waterbody

Ecological and Ornithological Designations

Special Protection Areas

Ancient Woodland

Ancient (of semi-natural origin)

Long-Established (of plantation origin)

Other (on Roy map)

Carbon and Peatland Importance

Class 2

Class 3

Class 5

Landscape Designation

Local Landscape Area (formerly known as Area of Panoramic Quality)

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Project: Balliemeanoch Pump Storage Grid Connection

Title:

Figure 4: Route Option 1 - Environmental Constraints

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