Scottish & Southern Electricity Networks

Project overview

The overall aim of the project is to reinforce the existing transmission network connections in the Argyll region, to enable renewable energy projects to connect to the GB transmission network and to ensure security of supply.

The existing transmission network for Argyll was originally designed to serve a rural area with low demand for electricity.

Requests from renewable generation developers to connect to the network in this area exceed the current capacity of the existing transmission network, meaning a new transmission circuit is required to meet demand from generation developers.

We have been consulting locally on this project (formerly referred to as the North Argyll Project) since March 2016.

The original proposals consisted of a new 275/132kV substation (Creag Dhubh) near to the existing Inveraray to Taynuilt 132kV overhead line, with a new 275kV overhead line circuit between the proposed Creag Dhubh substation and the existing Dalmally Substation.

We presented our preferred overhead alignment from Creag Dhubh substation to the existing Dalmally Switching Station during a consultation event in March 2018.

In recognition of the feedback received (and in combination with previous comments dating back to 2016), we committed to explore underground cable options and assess the potential for alternative overhead line options that would avoid crossing the Strath of Orchy.

We have completed further studies to inform the options assessments and now provide a summary of the alternatives, alongside the preferred overhead line solution from 2018.

Therefore, we are now consulting on three options for this connection:

1. **an overhead line to the existing Dalmally substation.**
2. **a combination of overhead line and underground cable to the existing Dalmally substation.**
3. **an alternative overhead line connection location east of Dalmally and new Switching Station.**

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Project history

March 2016

Project Introduction Consultation

The North Argyll project is introduced to local stakeholders.

We share the project scope and search areas being considered for a new overhead line to connect to the existing Dalmally substation.

October 2016

Route Options Consultation

A preferred route for the new overhead line is shared with the local community alongside alternative options considered. Feedback received in Dalmally specifically indicated a general objection to the project. Community members cited concerns regarding proximity to residential properties, visual impact and the proximity of the project to the existing Scottish Power transmission line. There were requests that the line be undergrounded in Dalmally due to these concerns.

Throughout 2017

Initial Cable Investigations

During analysis and review of all feedback received during the consultation process (including the March 2016 consultations) a decision was made to carry out an investigation into potential underground cabling route options around Dalmally.

January 2018

Cabling Update Meeting Glenorchy and Innishail CC

Members of our project team attended a local Community Council meeting to present the results of a Cable Feasibility Study which took place in 2017.

Three potential options were identified, each constrained by the location, with no clear preference between options.

March 2018

Preferred Alignment Consultation

We share our preferred alignment for the overhead line proposals between the preferred substation site (Creag Dhubh) and Dalmally Switching Station.

The vast majority of feedback received is in objection to the preferred route and subsequent alignment, citing landscape and visual concerns.

May 2019

Further Underground Cabling Investigations Announced

In recognition of the consultation feedback in Dalmally, we announce plans to further explore undergrounding across the Strath of Orchy and appoint a design contractor to conduct ground investigation studies.

Late 2019

Cabling Investigation Results

Two potentially feasible cabling options are identified, however, due to the high risk of environmental pollution and engineering challenges; a decision is made to investigate other potential connection options which would aim to respond to the community's landscape and visual concerns.

Early 2020

Glen Lochy switching station

An alternative connection location, avoiding the Strath of Orchy is identified to the east of Dalmally; which would link to the existing overhead line between Dalmally and Inverarnan substation.

September 2020

Virtual Consultation

Three options presented for consultation:

1. an overhead line from Creag Dhubh to the existing Dalmally substation (preferred solution from 2018),
2. a combination of overhead line and underground cable to the existing Dalmally substation; and
3. an alternative overhead line connection location east of Dalmally and new Switching Station.

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Option 1: Overhead Line (Preferred in 2018)

Option includes:

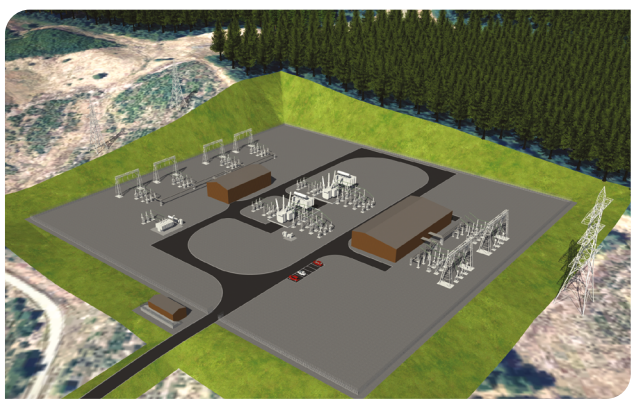
- A new 275/132kV Creag Dhubh substation adjacent to the existing Inveraray to Taynuilt 132kV overhead line.
- A new 275kV overhead line between the proposed Creag Dhubh substation and the existing Dalmally substation (owned and operated by Scottish Power).

Creag Dhubh Substation

For all three options being presented at this consultation, the proposed Creag Dubh substation is required. Throughout 2016, SSEN Transmission consulted on potential locations for the substation and presented the preferred site, by Creag Dhubh, in 2018.

The substation location was selected following thorough appraisal of a range of factors including; ecology, drainage, flood risk, ground conditions, access constraints, connectivity to services, visual amenity and security.

More information on this is available in the March 2018 Consultation Booklet. This would require a Town and Country Planning Application and a pre -application planning consultation will be conducted in 2021.



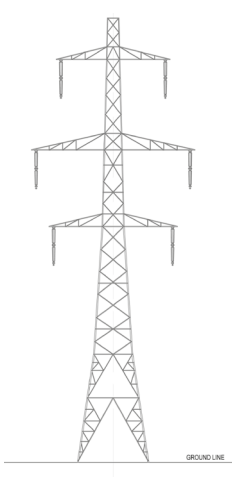
Visualisation of the proposed Creag Dhubh substation

Creag Dhubh – Dalmally substation Overhead Line (OHL)

This overhead line would consist of towers which are typical for the UK; lattice steel structures with six arms. Each of these arms would carry two electrical wires using an insulated unit.

The towers would be approximately 50m high and separated by a span of approximately 300m to 350m.

The alignment, as shown in the accompanying map, runs from Dalmally substation across Strathy of Orchy parallel to the B8077 to the west of Stronmilchan and across the River Orchy. It then turns south-south-west to cross the A85 and railway line close together, to the west of Dalmally village near Croftintuime. The alignment then enters an area dominated by plantation forestry, to the south of the Duncan Ban MacIntyre memorial. It then runs southwest, broadly parallel to the loch shore to Creag Dhubh, south of Achlian. From there it follows roughly parallel to the A819, before turning south of Cladich, to the Creag Dhubh substation.



Proposed L8 (c) Tower Suite

Public Consultation

The preferred overhead line option was presented during public consultation events in March 2018. You can find out more about these proposals by downloading the **March 2018 Consultation Booklet from the project webpage** or by contacting the Community Liaison Manager to request a hard copy.

This option was considered preferable following a technical, environmental and economic assessment. Feedback from this consultation (and previous public engagements) expressed opposition to an additional overhead line at the head of Loch Awe, crossing the Strath of Orchy.

We therefore committed to exploring options for an underground cable to cross the Strath of Orchy. You can find out more about the underground cable options by viewing the Option 2: Underground Cable Routes board.

Potential risks associated with this option:

1. Landscape
2. Visual
3. Residential proximity
4. Ground conditions

Throughout this consultation we have utilised RAG (red amber green) Tables to indicate the level of associated risk:

Performance	Appraisal
Most Preferred	No potential for development to be constrained
	Low potential for the development to be constrained
	Intermediate potential for the development to be constrained
Least Preferred	High potential for the development to be constrained

Environmental Red Amber Green (RAG) assessment for preferred overhead line Route (2017 consultation)	
Landscape	
Visual	
Ecology	
Ornithology	
Cultural Heritage	
Land Use	
Hydrology Geology	

Engineering RAG assessment for preferred overhead line Route (2017 consultation)	
Road Crossings	
Elevation	
Number of Deviations	
Residential Proximity	
Access Routes	
Route Length	
HV Crossings	
Ground Conditions	
Terrain	

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Option 2: Underground Cable Routes

Option includes:

- A new 275/132kV Creag Dhubh substation adjacent to the existing Inveraray to Taynuilt 132kV overhead line.
- A new 275kV overhead line between the proposed Creag Dhubh substation and a sealing end compound.
- Construction of a 275kV sealing end compound (transition from overhead line to cable) located west of Croftintuime.
- A 275 kV underground cable from the sealing end compound to the existing Dalmally substation.

SSEN Transmission completed an initial cable feasibility study in 2017. Following the March 2018 consultation events, we committed to carrying out a further detailed underground cable constructability assessment. To do this, we employed a design and build contractor to complete further studies of the proposed cable routes. Using indicative underground cable alignments it was possible to assess: the potential risks; engineering issues; likely environmental effects; and, estimated costs.

Three route options were identified initially. However, following more detailed review of technical constraints, one (Route A3) was not considered further due to the steep hillside and rocky terrain.. The remaining two options (Route A2 and Route A5) were included in the detailed constructability assessment.

Both route options A2 and A5 would start at a sealing end compound, which would be located to the south west of Croftintuime, south of the Oban to Crianlarich railway. The precise location of the sealing end compound would be determined partly by technical (e.g. ground conditions and terrain) and environmental issues (e.g. habitats affected, potential visual effects).

An example of a Sealing End Compound

Underground Cable Route Option A2

Underground cable route option A2 is approximately 2.8 km in length, from the proposed OHL termination tower to Dalmally substation. The route option starts south west of Croftintuime. From here it progresses northwards, passing under the railway, the A85 and the River Orchy into the open fields west of Whitehouse, west of the B8077 at Stronmilchan. It lies parallel to and west of the B8077, crossing open fields and the forestry area south of the River Strae, then crosses the River Strae to reach Dalmally substation.

Construction of an Underground Cable trench

Underground Cable Route Option A5

Underground cable route option A5 is approximately 3.8 km in length from the proposed termination tower to Dalmally substation. The route option starts south west of Croftintuime and is wider in this location than route A2 to allow consideration of alternative locations for crossing the railway and the A85. For this reason, the route follows the railway and A85, progressing north west to a point south of the confluence of the Rivers Strae and Orchy. From here, it progresses northwards crossing open fields west of the River Strae. It then includes a section of the B8077 between the Allt Mhoilie and the Dalmally substation.

Environmental RAG assessment of Cable Route Options (2019)

Guidance Criteria – Environmental	Option A2	Option A5
Natural Heritage – Designations		
Natural Heritage – Protected Species		
Natural Heritage – Habitats		
Natural Heritage – Ornithology		
Natural Heritage – Hydrology/Geology		
Cultural Heritage – Designations		
Cultural Heritage – Cultural heritage assets		
People – Proximity to Dwellings		
Landscape and Visual – Designations		
Landscape and Visual – Landscape Character		
Landscape and Visual – Visual		
Land Use – Agriculture		
Land Use – Forestry		
Land Use – Recreation		
Planning		

Engineering RAG assessment of Cable Route Options (2019)

Guidance Criteria – Engineering	Option A2	Option A5.1	Option A5.2
Infrastructure crossings			
Road Crossings			
Contaminated Land			
Atmospheric Pollution areas			
Flooding (Operation)			
Trees Root Protection Area			
Terrain			
Peat			
Rock			
Geology, Hydrology and Hydrogeology			
Access			
Angle/Deviations (Cable Bending)			
Flooding (Construction)			
Surface Water			
Circuit Design			
Access			
Link Boxes			
Fault Repairs			
Distance from Constraints			
Distance from Existing Circuits/Network			
Proximity to Windfarms			
Urban Environments			

Appraisal of Underground Cable Route Options

The tables below include the summary of both the environmental and engineering appraisals of underground cable route options.

We appointed a design and build contractor in 2018 to complete an engineering and construction feasibility study and route options appraisal. This study was undertaken for illustrative underground cable alignments, rather than the cable routes; as it was necessary to define a detailed illustrative design to allow the engineering assessment to be completed through comparison of those designs.

Two alignments were identified within route A5, and one alignment within route A2, as shown on the Option 2 Map.

Outcomes

In summary, comparative analysis of the environmental and consenting constraints concludes that there a marginal preference for Underground Cable Route Option A5. From an Engineering perspective, it is concluded that whilst each route option is technically feasible, there is also a marginal preference for A5.

However, each underground cable option has significant engineering challenges and specific risks, particularly regarding flooding and infrastructure crossings.

The identification of these significant risks led SSEN Transmission to consider an alternative solution to a Dalmally switching station connection; one which could be considered environmentally, technically and economically preferable.

This decision also took account of previous feedback received regarding the assessment of the potential for alternative overhead line options that would avoid crossing the Strath of Orchy.

Potential risks associated with this option:

1. Infrastructure crossings
2. Road crossings
3. Flooding
4. Terrain
5. Peat
6. Access

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Option 3: Glen Lochy Overhead Line and Switching Station

Option includes:

- A new 275/132kV Creag Dhubh substation adjacent to the existing Inveraray to Taynuilt 132kV overhead line.
- A new 275kV overhead line between the proposed Creag Dhubh substation and a switching station near Glen Lochy.
- A new Glen Lochy switching station, to connect the new 275kV overhead line with the existing Scottish Power 275kV overhead line between Dalmally and Inverarnan Substation.

In response to public feedback concerning alternative connection options and locations, we have assessed an alternative connection location, 2km east of Dalmally, which would enable a new overhead line connection to the existing Scottish Power 275kV overhead line whilst avoiding the Strath of Orchy.

The route would follow the alignment identified in 2018 from the proposed Creag Dhubh substation for Option 1, however would deviate south of Damally.

Overhead Line Routes

We have identified potential Routes for the new 275kV overhead line. The Route selection process identifies a wide corridor in which a preferred Alignment for the overhead line can be determined. This aims to progress towards a preferred overhead line Alignment in a systematic manner, which is technically feasible, economically viable, and could be anticipated to cause the least disturbance to the environment and to those who live, work and visit the area or use it for recreation.

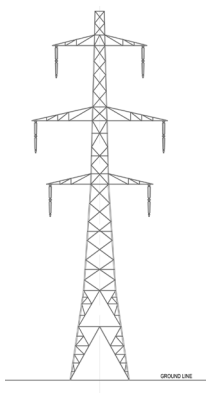
Potential risks associated with this option (of the preferred route):

1. Railway crossings

Environmental RAG assessment of Glen Lochy OHL Route Options (2020)				
Guidance Criteria – Environmental	Route A1	Route A2	Route B1	Route B2
Natural Heritage – Designations				
Natural Heritage – Protected Species, Habitats, Ornithology				
Natural Heritage – Hydrology/Geology				
Cultural Heritage – Cultural Heritage Assets				
People – Proximity to Dwellings				
Landscape and Visual – Designations, Landscape Character, Visual				
Land Use – Agriculture				
Land Use – Forestry				
Land Use – Recreation				
Planning				

Engineering RAG assessment of Glen Lochy OHL Route Options (2020)				
Guidance Criteria – Engineering	Route A1	Route A2	Route B1	Route B2
Altitude				
Terrain				
Waterbodies				
Slope				
Peat				
Rock				
Flooding				
Road Networks				
Access Tracks				
OHL Crossings				
Railway Crossings				
LV/HV Crossings				
Operations & Maintenance				

To view a RAG assessment of the Switching Station options presented, please see the Consultation Document available from **the project website** and the **additional consultation information page.**



Proposed L8 (c) Tower Suite

Switching Station

In order to facilitate the Glen Lochy connection option, we would construct a switching station to connect the proposed overhead line from Creag Dhubh Subsation to Scottish Power's existing 275kV overhead line and subsequently to the UK electricity network.

A switching station essentially creates a central node on the network where multiple lines of the same voltage can connect. Switches at this location allow each line in and out to be controlled without affecting the other lines.

Six different sites were initially identified, although Site 5 was discounted from further assessment due to technical and environmental constraints and therefore has not been included in the consultation materials. Through analysis of the environmental and engineering constraints Site 6 has been identified as the preferred option.

The layout and area requirements used to inform the initial process are based on the largest probable footprint (as indicated on the Glen Lochy Overhead Line and Switching Station map) and also include a buffer around the site to allow for any earthworks and landscaping. Technology options are being developed that will refine the area and size of the switching station with key considerations including environmental impact during both construction and operation.

An example of existing Switching Station equipment at Beauly.

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Next steps

We intend to carry out further public engagement in early 2021 following collation and review of feedback from this event and are keen to receive feedback from as many local interested people as possible.

We are continuing to work on the Glen Lochy option, undertaking further surveys and assessments, as have been done for the other options.

A Report on Consultation will be published in October 2020, which will record feedback received during this consultation exercise; and, the response from SSEN Transmission to the consultation feedback.

We are committed to working closely with all stakeholder groups with a direct interest in the projects design, ensuring transparency and consistency throughout. Whilst there are competing interests, we will clearly explain how we have considered the views of stakeholders and how the various factors influencing decisions have been considered, be they economic implications, environmental designations or visual impact concerns.

Comments

We understand and recognise the value of the feedback provided by members of the public during all engagements and consultations. At this stage of development, we are keen to receive your views and comments regarding the connection options presented, which can be provided to the project team by completing a feedback form, or by writing to Kelly Scott, Community Liaison Manager.

We will be seeking feedback from members of the public and statutory stakeholders until 16:00, Friday 25 September 2020

All received feedback will be assessed and the proposed options adapted where necessary.

Consultation Timeline

Virtual Consultation:
September 2020

Consultation Closes:
25 September 2020

Report on Consultation:
October 2020

Environmental Impact Assessment (EIA) Scoping Begins:
October 2020

Further Consultation:
February 2021

* Please note that these dates are indicative and subject to change

Kelly Scott
Community Liaison Manager

E: kelly.scott@sse.com

M: 07443 772 946

Scottish and Southern Electricity Networks,
1 Waterloo Street,
Glasgow, G2 6AY

Additional Information

Information will also be made available via the project webpage and social media channels:

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Project Website:
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