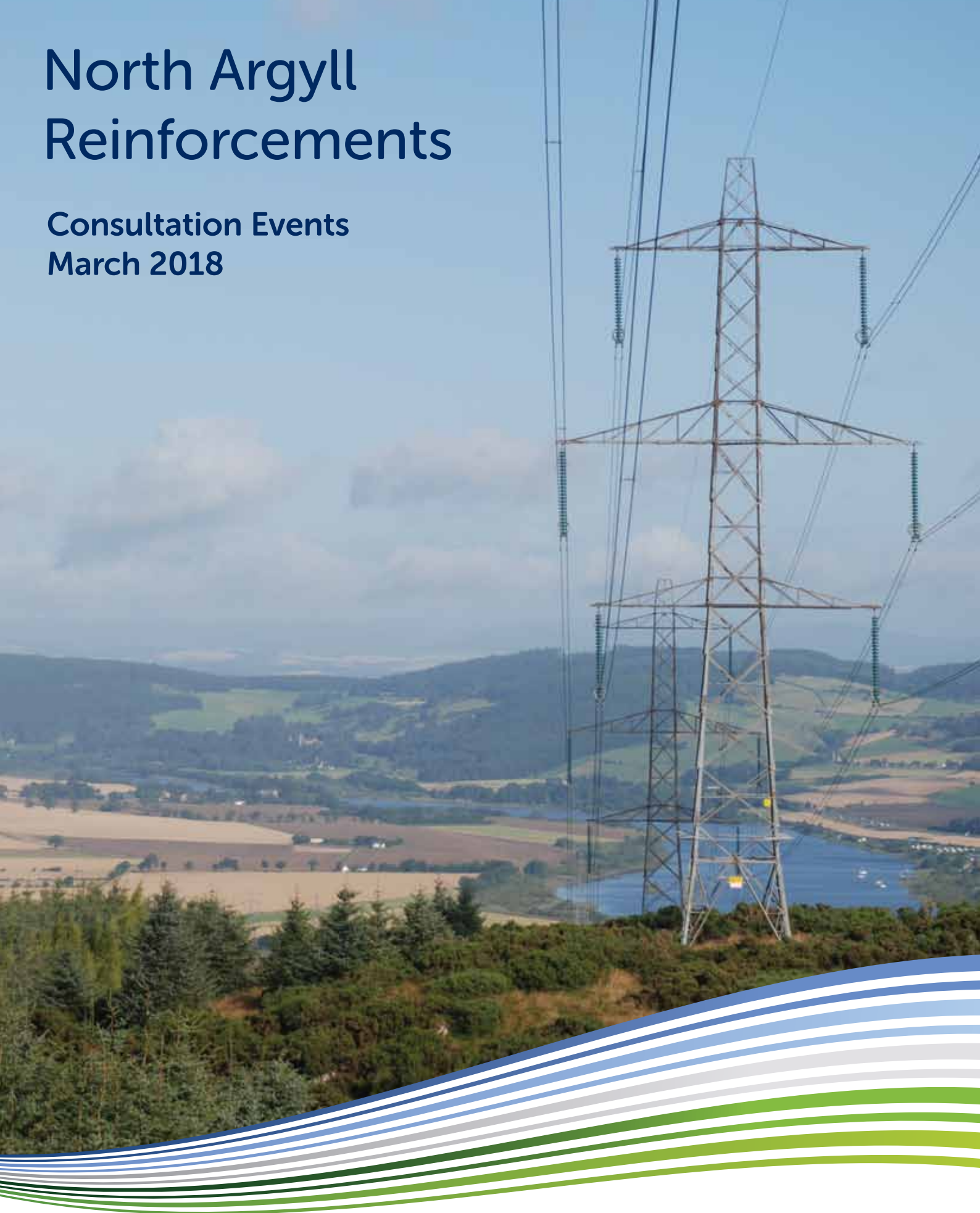


North Argyll Reinforcements

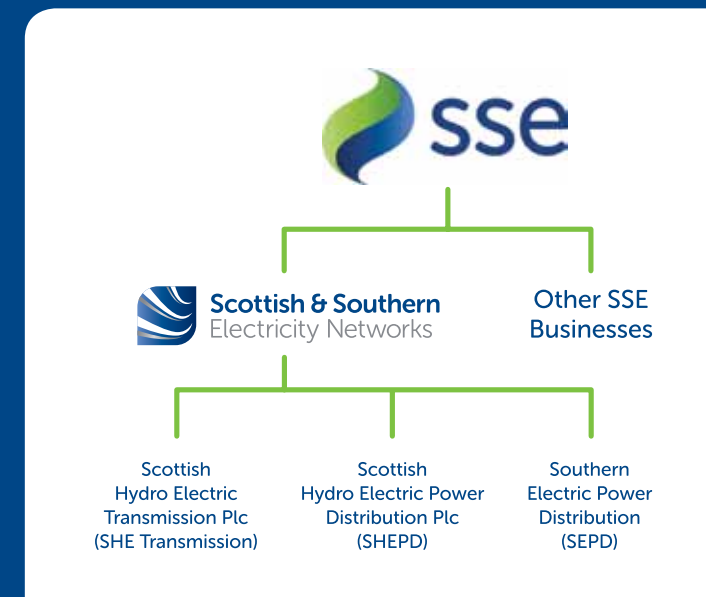
Consultation Events
March 2018



Scottish & Southern
Electricity Networks

Who we are

We are Scottish and Southern Electricity Networks, operating under licence as Scottish Hydro Electric Transmission Plc for the transmission of electricity in the north of Scotland.



What is the difference between Transmission and Distribution?

Electricity Transmission is the transportation of electricity from generating plants to where it is required at centres of demand.

The Electricity Transmission network, or grid, transports electricity at very high voltages through overhead wires, underground cables and subsea cables. The transmission network connects large scale generation, primarily renewables, to central and southern Scotland and the rest of Great Britain. It also helps secure supply by providing reliable connection to the wider network of generation plans.

The Electricity Distribution network is connected into the Transmission network but the voltage is lowered by transformers at electricity substations, and the power is then distributed to homes and businesses through overhead lines or underground cables.

Overview of Transmission projects



In total we maintain about 5,000km of overhead lines and underground cables – easily enough to stretch across the Atlantic from John O'Groats all the way to Boston in the USA.

Our network crosses some of the UK's most challenging terrain – including circuits that are buried under the seabed, are located over 750m above sea level and up to 250km long.

The landscape and environment that contribute to the challenges we face also give the area a rich resource for renewable energy generation. There is a high demand to connect from new wind, hydro and marine generators which rely on Scottish and Southern Electricity Networks to provide a physical link between the new sources of power and electricity users. Scottish and Southern Electricity Networks is delivering a major programme of investment to ensure that the network is ready to meet the needs of our customers in the future.

Our responsibilities

We have a licence for the transmission of electricity in the north of Scotland and we are closely regulated by the energy regulator Ofgem.

Our licence stipulates that we must develop and maintain an efficient, co-ordinated and economical system of electricity transmission.

Project overview

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

The main elements of the project are as follows:

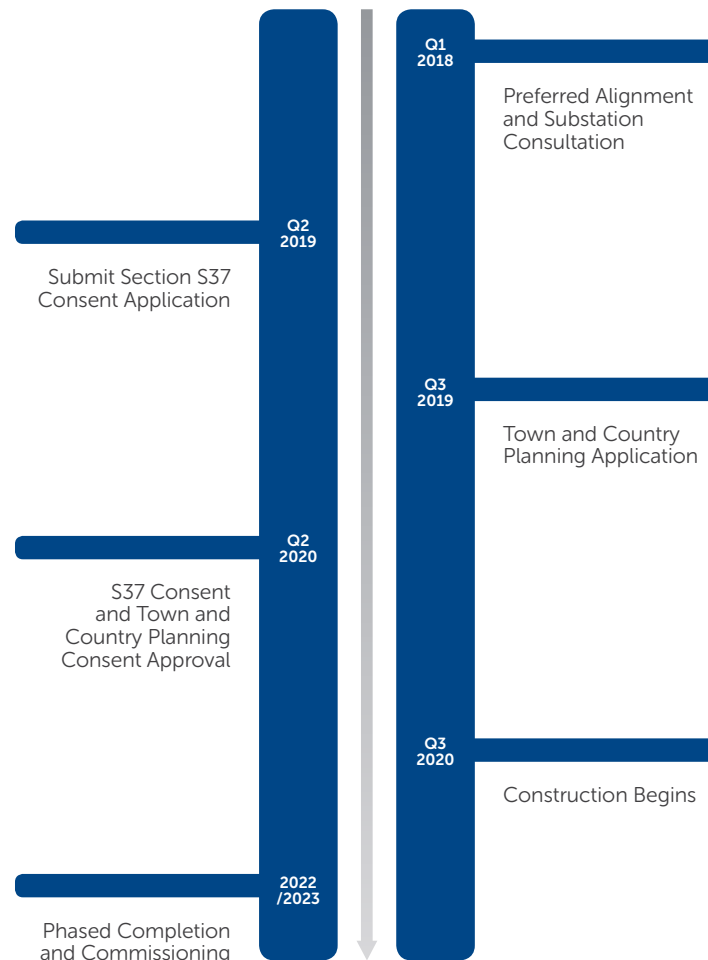
- Construction of a new 275/132kV substation (Creag Dhubh) in close proximity to the existing Inveraray to Taynuilt overhead line.
- Rebuild of the existing 132kV overhead line between Taynuilt and the proposed Creag Dhubh substation.
- Construction of a new 275kV overhead line between the proposed Creag Dhubh substation and the existing Dalmally substation.
- Decommissioning the existing 132kV overhead line between Taynuilt and the proposed Creag Dhubh substation.

Consultation on the preferred substation site

The 132kV and 275kV lines will require connection to the existing network, which will necessitate the construction of a new substation.

Since the last consultations in October 2016 we have reviewed feedback from various parties, as well as undertaking further studies and surveys. This has led to the decision to relocate the proposed site a small distance further south than previously shown.

Project Timeline



Consultation on the preferred alignment

Proposals for the reinforcement of the transmission network in North Argyll were first publicly consulted upon in March 2016 when initial search areas for the overhead lines were highlighted. A second set of events were held in October 2016 to consult on route options for both the new 275kV overhead line to Dalmally and the rebuild of the existing 132kV overhead line between Taynuilt and the proposed new substation.

SSEN has now undertaken an assessment to establish a preferred alignment for the proposed Creag Dhubh – Dalmally overhead line with consideration for technical feasibility, environmental factors, sociological impact and cost. The aim of this consultation will concentrate on seeking feedback on the preferred alignment alongside the proposed Creag Dhubh substation location ahead of further refinement prior to Section 37 Consent and Town and Country Planning submissions.

Previously, consultation was undertaken on an upgrade of the existing 132kV overhead line between Taynuilt and the proposed new substation. SSEN are currently re-assessing this proposed reinforcement and whilst we intend to take this element forward in the near future, at present the project shall remain on hold until further networks assessments are carried out.

Creag Dhubh (North Argyll) Substation

A new 275/132/33kV substation is required to reinforce the SSEN network. The substation will connect onto the existing 132kV network between Inveraray and Taynuilt. It will also connect to the existing Dalmally 275kV substation via a new overhead line, to allow connection to the wider electricity network.

To allow for a reduced substation surface area, gas insulated switchgear (GIS) has been chosen rather than air insulated switchgear (AIS).

One side of the substation will consist of double 275kV busbar GIS including two overhead line bays. The other side will consist of double 132kV busbar GIS including up to four overhead line bays and a grid transformer bay. Both sets of GIS will have two bays to connect to the centrally located supergrid transformers.

The 275/132kV supergrid transformers (SGT) will be rated at 480MVA, with the grid transformer (GT) rated at 90MVA. The final installed dimensions of these items may vary, but can be expected to fit within the following envelopes:

- SGT: 8m (w) x 16m (l) x 10m (h)
- GT: 4m (w) x 7m (l) x 7m (h)

Transport Infrastructure and Construction Methods

Public Routes

During the construction phase of the works existing access routes will be prioritised for use to minimise environmental impact.

Where the works encroach on existing public walking or access routes, minimisation of disruption will be prioritised with temporary diversion routes to be proposed where required. All utilised access tracks will be upgraded to provide adequate passing places.

Earthworks

Building the substation platform which is approximately 186m x 173m in size will require significant volumes of graded stone. Local sources of stone are being investigated as part of our development works into the platform design.

Utilisation of localised sources provides a more sustainable construction method whilst significantly reducing the number of disruptive construction operations.

Traffic Management

A full review is being undertaken to ensure proposed routes are sufficient for the anticipated construction traffic, with use of B roads minimised. All bridges which the option routes cover will be subject to structural capability assessments. Widening of the roads at tight bends may also be undertaken. Strict timetables for road use by construction vehicles will be agreed and adhered to during construction. The transport strategy will endeavour to utilise existing routes and tracks already utilised by local forestry operations.

The main access road for the substation construction works for delivery of material, plant, equipment and workforce will be taken from the A819 via the A85. Any B roads used during construction will be improved to accommodate abnormal loads where necessary and will be maintained as part of our works. We are however investigating the possibility of forming a new road junction for the substation track 0.8km south of the existing access point on the A819.

Laydown and Office

Temporary offices, welfare and storage facilities for the main work force will be established during the planned construction period. These will be located in close proximity to the platform and overhead line access routes. Existing tracks will be adopted and maintained during construction to reduce disruption.

Proposed Substation Location

The substation location has been selected after thorough appraisal of a range of factors including; ecology, drainage, flood risk, ground conditions, access constraints, connectivity to services, visual amenity and security. The proposed site has moved approximately 0.5km south of the previously presented 'Site 1' after initial ground investigation uncovered the presence of significant volumes of environmentally sensitive and technically challenging peatland. Adoption of the current location allows for the delivery of a more environmentally sustainable development and reduces the number of disruptive construction operations.

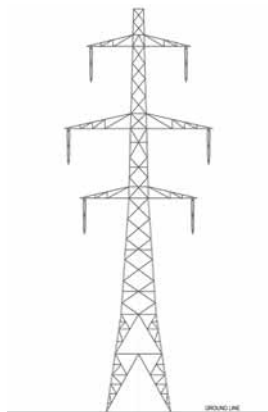


Visualisation of the proposed Creag Dhubh substation

Creag Dhubh to Dalmally Overhead Line Connection

There is requirement for an upgrade to the transmission infrastructure in Argyll due to renewable generation which has been contracted with National Grid within the study area. The Creag Dhubh to Dalmally overhead line connection is part of the proposed solution to enable additional renewable generation to be connected into the network.

The proposed overhead line will consist of towers which are typical for the UK; lattice steel structures with six arms. Each of these arms will carry two electrical wires using an insulated unit. To provide protection from lightning, a single earthwire is attached to the top of the tower. This traditional arrangement is often described as a double circuit arrangement because each side of the tower carries a single electrical circuit.



Proposed L8 (c) Tower Suite

Alignment Selection Process

In March 2016 we held a series of consultation events as part of Stage 1 of the development routeing process, presenting search areas for the overhead lines. Following the feedback received from these Stage 1 events, the development routeing process progressed to Stage 2, where the purpose was to identify a Preferred Route which is considered the optimal opportunity to provide an economically, technically and environmentally sound alignment within it. In October 2016 we presented the Preferred Route and the alternative Route Options at a series of consultation events. Following consideration of the feedback of the Stage 2 consultation events a 500 meter wide Proposed Route was selected.

This consultation event is to present the result of the Stage 3 Alignment Selection process, which has been used to develop a Preferred Alignment for the overhead line. The Preferred Alignment is considered to represent the optimum balance of technical, economic and environmental considerations and has been developed with reference to SHE Transmission's license obligations under the Electricity Act 1989. All comments received during these consultation events will inform selection of an Indicative Proposed Alignment. The Indicative Proposed Alignment will be taken forward into Stage 4 Consenting Process for more detailed Environmental Impact Assessment, prior to submission of an application for consent for a Proposed Alignment under Section 37 of the Electricity Act 1989.

New overhead line towers would be required to operate at 275kV voltage. The average tower height is anticipated to be 47 metres although depending on the angle of the line and extensions required, the height may vary between 40 and 55 metres. The proposed new overhead line connection would be approximately 13 kilometres long comprising of approximately 52 towers with spans between 175-350 metres.

Undergrounding Investigation

Following the last consultation, SSEN undertook a cable feasibility study investigating the possible cable options around Dalmally. The cable circuit would be a double circuit, operating at 275kV (1030MVA) and be sized at approx. 2000mm² (Aluminium). This would mean that two cables per phase would be required (i.e. 14 cables in total (6 power cables & 1 fibre cable on the first circuit and 6 power cables & 1 fibre cable on the second circuit). To install a cable circuit of this size, a work easement of approx. 35m would be required to allow storage of the topsoil, subsoil and a running track alongside the cable excavation during construction.

Three different underground cable routes were returned. The first would be in the corridor 'A3' and would run the cable around the rear of Stronmilchan and adjacent to the existing overhead line route. The second would be in the corridor 'A2', which would cross under the River Orchy and then across the front of Stronmilchan, before connecting into Dalmally substation. Finally, the third would start off in corridor 'A2' before changing direction and running along the A85 road for a significant length, before crossing the River Orchy and then connecting into Dalmally substation.

Due to the varying ground conditions such as a mixture of peat bog, heathland and pasture land in each route, Horizontal Directional Drilling (HDD) would be required. This technique utilises a large drilling rig to bore holes underground to support installation of a duct and HV cables. A combination of Bentonite and water is used to lubricate the drill and this fluid must be carefully managed during drilling operations.

The existing road infrastructure around Stronmilchan would not support the transport of the heavy construction machinery and delivery vehicles required for the HDD operations. A temporary haul road would have to be installed to service the construction works whilst works on the A85 would require traffic management, such as temporary traffic lights, single lane closures and potentially full road closures.

All of these cable routes would require a sealing end compound to be constructed to allow connection from the overhead line into underground cables. While the final position of this compound would have to be investigated further, it would have to be constructed close to the A85 to allow access for operational and maintenance purposes.

Environment

Landscape and Visual

All of the alignment options in the area of Scottish Power's substation at Dalmally were considered likely to result in landscape effects, due to the high value of the landscape; as recognised by its designation in the Local Development Plan as an Area of Panoramic Quality. In addition, all options would have cumulative landscape and visual effects in combination with the existing Scottish Power 275kV line from Dalmally to Glenfalloch.

All alignment options were considered likely to result in visual effects, because of the proximity of visual receptors at: Dalmally, Stronmilchan and Croftintuime; tourists on the A85 and Oban railway; visitors to Kilchurn Castle; and, recreational users of the surrounding hills including those at Ben Cruachan and Cruachan Dam.

The Preferred Alignment, crossing the Strath of Orchy, is considered to be a good landscape fit in terms of the Holford Rules; because it follows the edge of the valley, so that whilst the overhead line would affect the landscape locally, it would have a relatively limited effect on the wider landscape.

The Preferred Alignment has the potential to cause visual effects on the properties in Stronmilchan, many of which are positioned to take advantage of the view down the Strath of Orchy towards Loch Awe; therefore individual tower positioning and visual screening is a key consideration in this area.



Ornithology



The Preferred Alignment is adjacent to the Glen Etive and Glen Fyne Special Protection Area (SPA), designated for breeding golden eagle. Under the requirements of the Habitat Regulations it is necessary to consider whether the Preferred Alignment will have significant effects upon the SPA. A Habitat Regulations Appraisal (HRA) screening assessment will be undertaken during the EIA reporting process to determine the potential for likely significant effects on the SPA.

The Preferred Alignment avoids entering the Glen Etive and Glen Fyne SPA by following the SPA boundary. A greater separation distance from the SPA is not possible, due to the presence at this location of the sensitive Rocky Mosaic Landscape Character Type.

Historic Sites

The Preferred Alignment was developed to reduce the setting impact on Tom a'Chaisteal Dun, which is a Scheduled Monument, whilst still avoiding the Glen Etive and Glen Fyne SPA. The Preferred Alignment avoids crossing the SPA and passes 'behind' the Tom a'Chaisteal Dun, away from the view to the loch to reduce the potential effect on the setting of the Scheduled Monument.

The Preferred Alignment would be partially visible from Kilchurn Castle, which is a Scheduled Monument; but it would be visible in wider landscape views, filtered by the trees along the A85, the railway and the river banks, and back-clothed by the hillside.

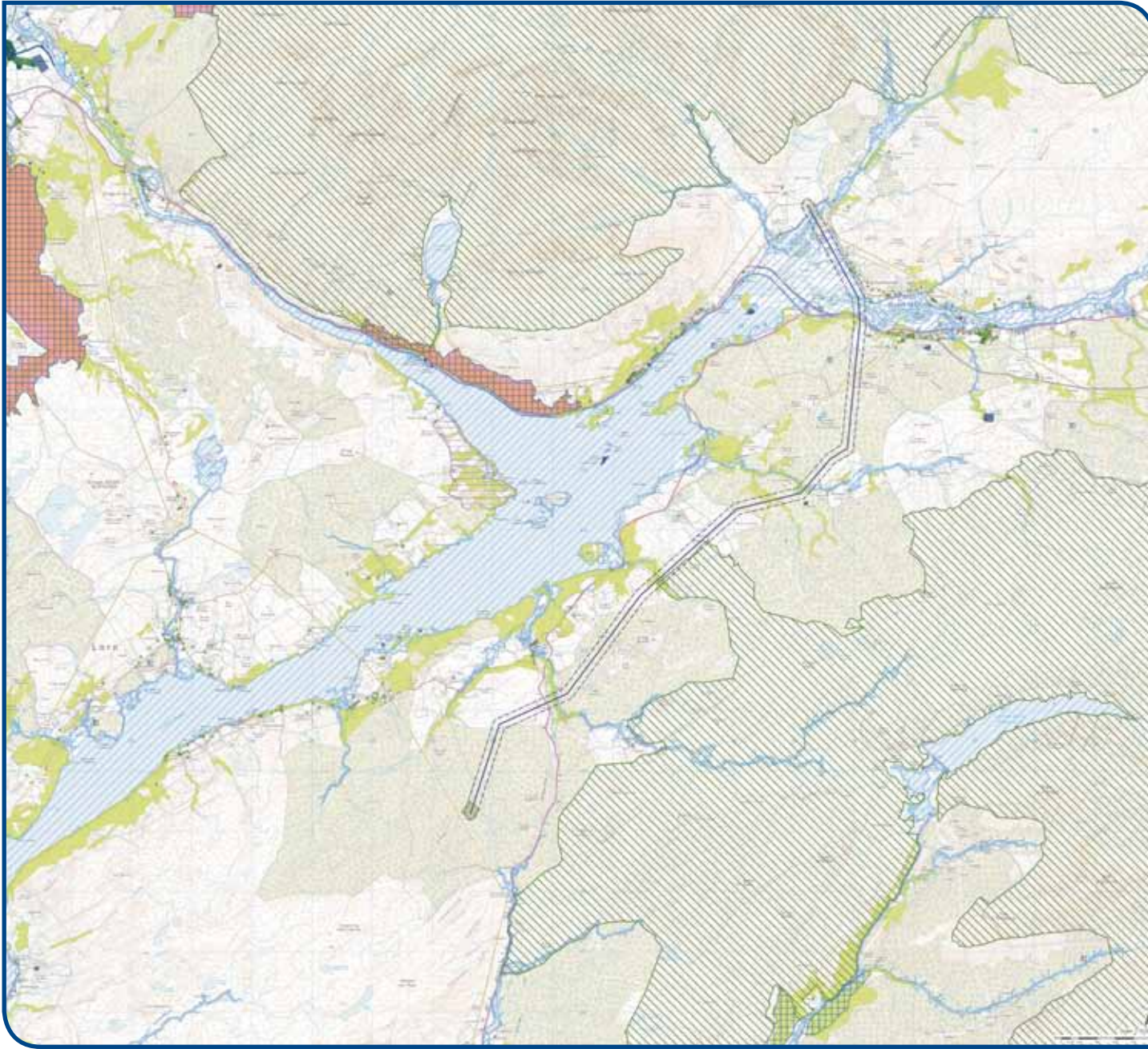
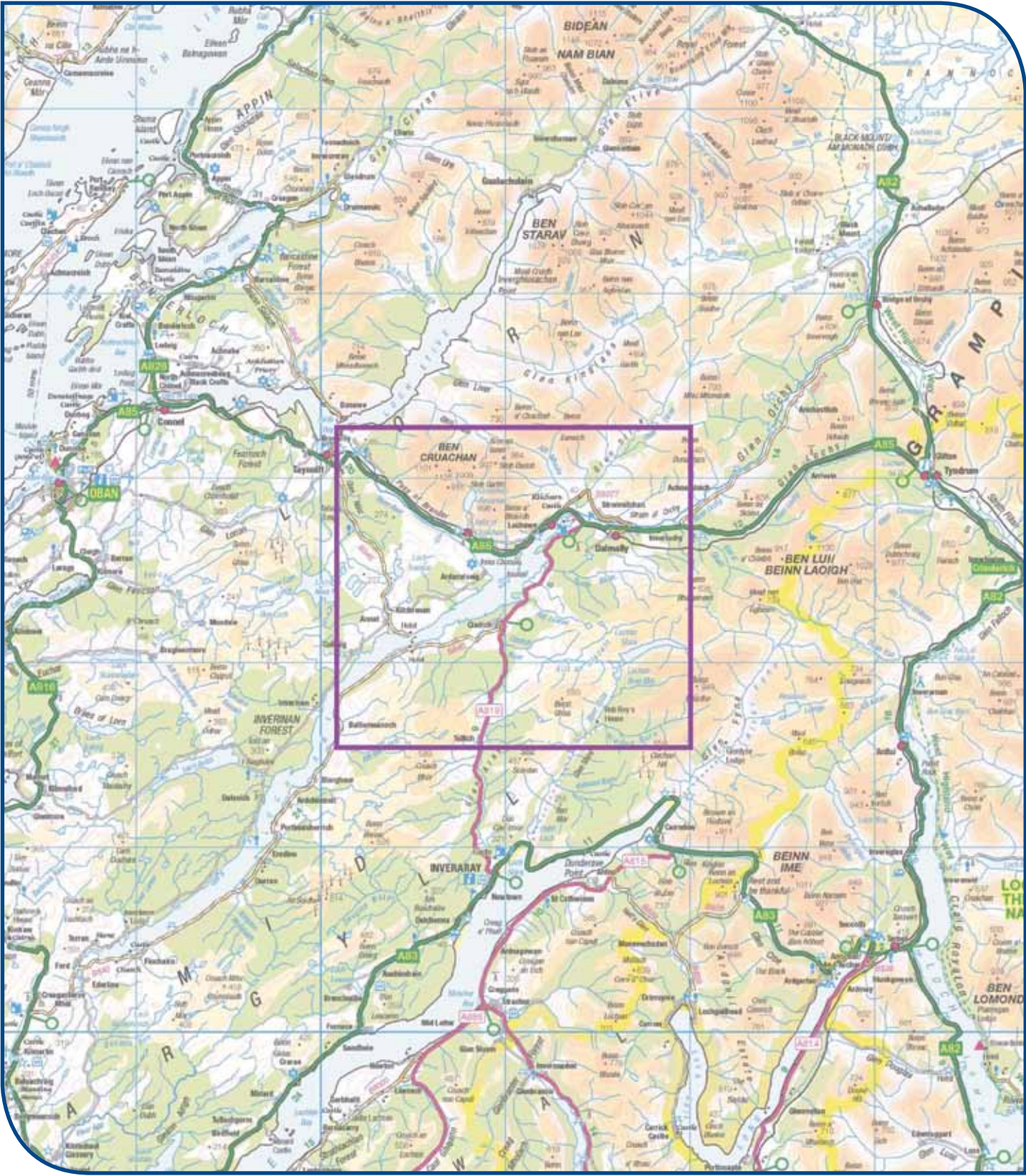


Flood Risk

The Preferred Alignment, north of the A85, is characterised by SEPA as having a high likelihood of river flooding, notably the northern section between the River Strae and River Orchy, Teatle Water, Allt Fearn and the Cladich River. This area also contains known peat deposits.

Construction of the overhead line in this area of high flood risk, presents potential pollution risks during construction. This is due to the potential for the construction site to become flooded and mobilise concrete, soil, sediment and peat into the flooded river channel, which will discharge into Loch Awe. The potentially significant effects of flooding on construction activities will be assessed in the EIA Report and commitments made to mitigate those effects.

Overhead line route



- Key**
- Preferred Alignment
 - Preferred Substation Site
 - Limits of Deviation (100m)
 - Existing Electricity Transmission Line
 - Residential Properties
 - Listed Buildings - A
 - Listed Buildings - B
 - Listed Buildings - C
 - Special Protection Area (SPA)
 - Special Areas of Conservation (SAC)
 - Sites of Special Scientific Interest (SSSI)
 - Conservation Areas
 - Gardens and Designed Landscapes
 - Scheduled Ancient Monuments
 - Ancient Woodland Inventory
 - Flooding Risk - River

What happens now and how do I have my say?

We understand and recognise the value of feedback provided by members of the public during all engagements and consultations. This valuable feedback is essential in assisting the development team to progress projects and to reach a balanced proposal.

We are keen to receive your views and comments in regards to the following questions contained within the feedback form:

- Are there any factors that should be brought to the attention of the project team in regards to the preferred alignment or substation location?
- Have we been clear in providing the reasons for our preferred route alignment?

Comments can be submitted as follows:

At the exhibition today:

Complete a Comment Form and place it in the box provided

Online:

Complete a Comment Form online by visiting the project webpage:
www.ssen-transmission.co.uk/projects/north-argyll

By post:

Complete a Comments Form and post it to our Liaison Manager (details adjacent).

By email:

Complete a Comments Form and email it to our Liaison Manager (details adjacent).

Feedback

The closing date for feedback forms regarding this consultation is 16:00, Friday 27th April 2018.

Please make your comments as specific as possible in order to help us consider them in relation to our proposals. Once all feedback has been received, it will be reviewed and used to assist further project refinement.

We appreciate all feedback and thank you for taking the time to provide your comments.

Get in touch with our Community Liaison Manager: Kelly Scott



kelly.scott@sse.com



07443 772 946



Kelly Scott
SHE Transmission
1 Waterloo Street
Glasgow
G2 6AY



Information

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

Project Website:

www.ssen-transmission.co.uk/projects/north-argyll

Find us on Facebook:

SSEN Community

Follow us on Twitter:

@ssencommunity



Your Feedback

Thank you for taking the time to attend this consultation event. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in **BLOCK CAPITALS**. (Please tick one box per question only)

Q1 Has the requirement for the project been clearly explained?

☐ Yes ☐ No ☐ Unsure

Q2 Have we adequately explained the approach taken to select an overhead line as the preferred technology?

☐ Yes ☐ No ☐ Unsure

Q3 Have we adequately explained the approach taken to select the preferred route alignment for the overhead line?

☐ Yes ☐ No ☐ Unsure

Q4 Are there any factors, or important points that should be brought to the attention of the Project Development Team in regards to the preferred route alignment?

Q5 Have we adequately explained the approach taken to select the preferred site for the Creag Dhubh substation?

☐ Yes ☐ No ☐ Unsure

Q6 Are there any factors, or important points that should be brought to the attention of the Project Development Team in regards to the preferred substation site?

Q7 Following review of the provided information, how would you describe your understanding of the North Argyll Reinforcements project?

☐ I am very well informed ☐ Know a lot ☐ Know a little
☐ Know very little ☐ Know nothing at all



Q8 Overall, how would you describe your reaction to the North Argyll Reinforcements Project?

☐

Support

☐

Neither support nor object

☐

Object

Q9 And finally, from your experience to date, can you rate the quality of the consultation undertaken on the North Argyll Reinforcements project?

☐

Excellent

☐

Quite good

☐

Neither good not poor

☐

Poor

☐

Very poor

Please use the space below to provide further comments:

Full name

Address

Postcode

Telephone

Email

If you would like to be kept informed of progress on the project please tick this box.

☐

If you would like your comments to remain anonymous please tick this box.

☐

Which event did you attend?

☐

Taynuilt

☐

Kilchrenan

☐

Portsonachan

☐

Dalmally

☐

Did not attend an event

Thank you for taking the time to complete this feedback form.

Please hand your completed form in at the event or alternatively by one of the methods below:

Post: Kelly Scott, SHE Transmission plc, Inveralmond House, 200 Dunkeld Rd, Perth, PH1 3AQ **Email:** kelly.scott@sse.com

Closing date for feedback is 16:00, Friday 27th April 2018

The feedback form and all information provided at the event can also be downloaded from the dedicated website:

www.ssen-transmission.co.uk/projects/north-argyll

Any information given on the feedback form can be used and published anonymously as part of Scottish and Southern Electricity Networks consultation report. By completing this feedback form you consent to Scottish and Southern Electricity Networks using feedback for this purpose.

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