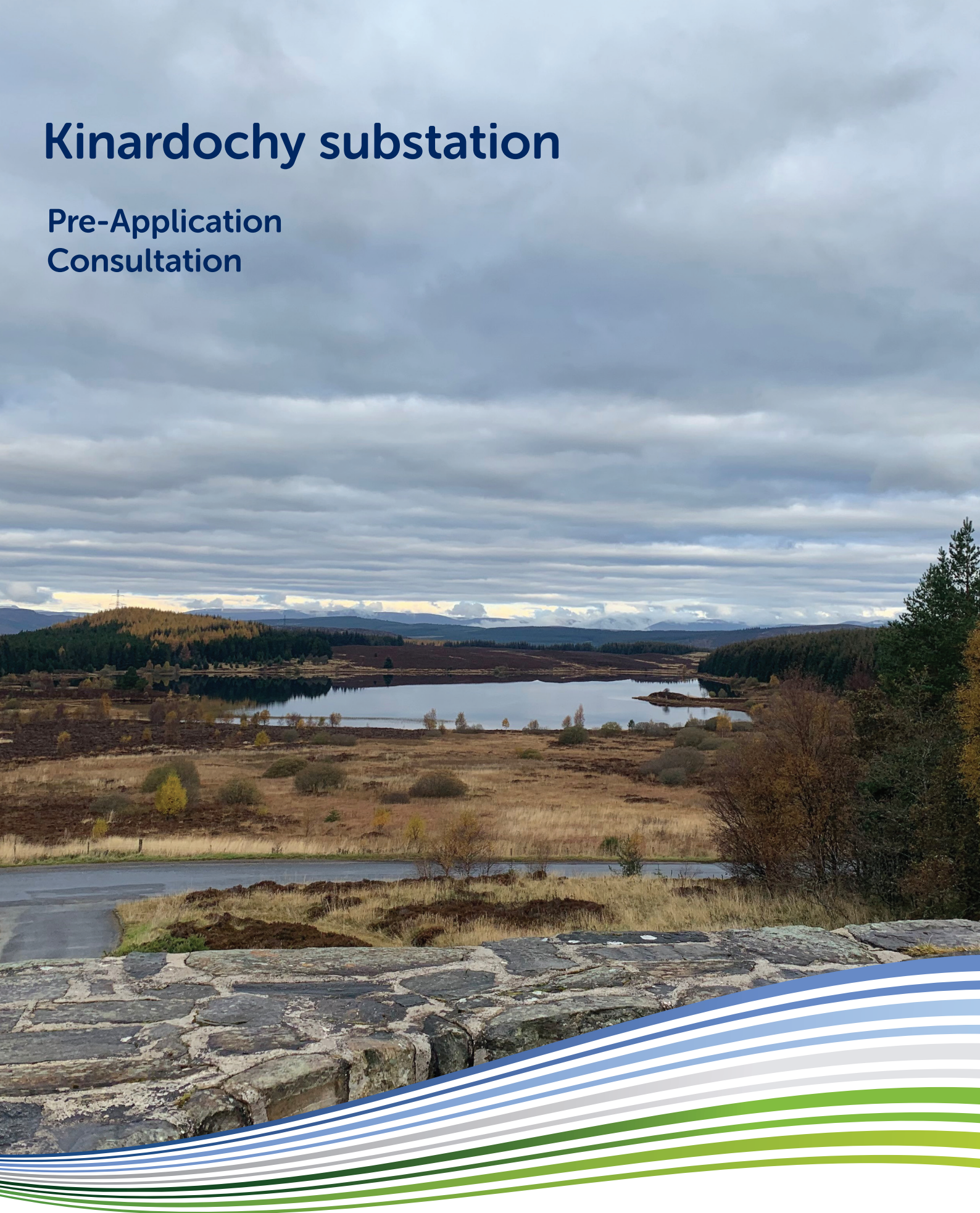


Kinardochy substation

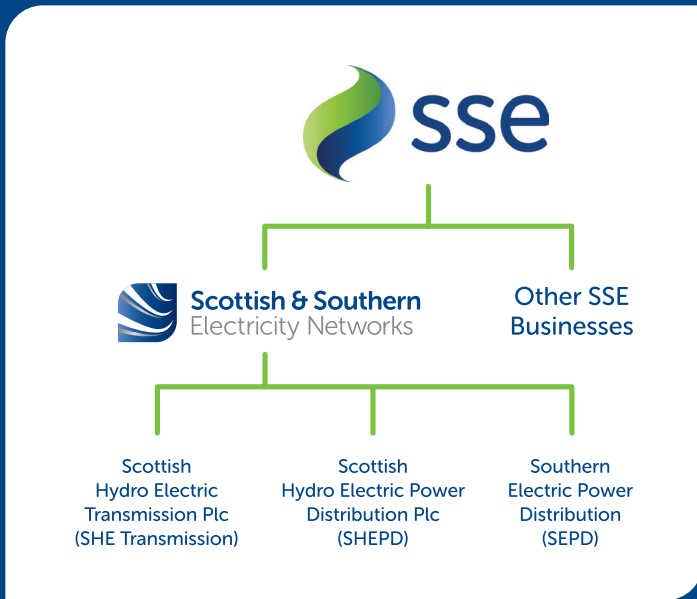
Pre-Application
Consultation



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 lines, 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.

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.

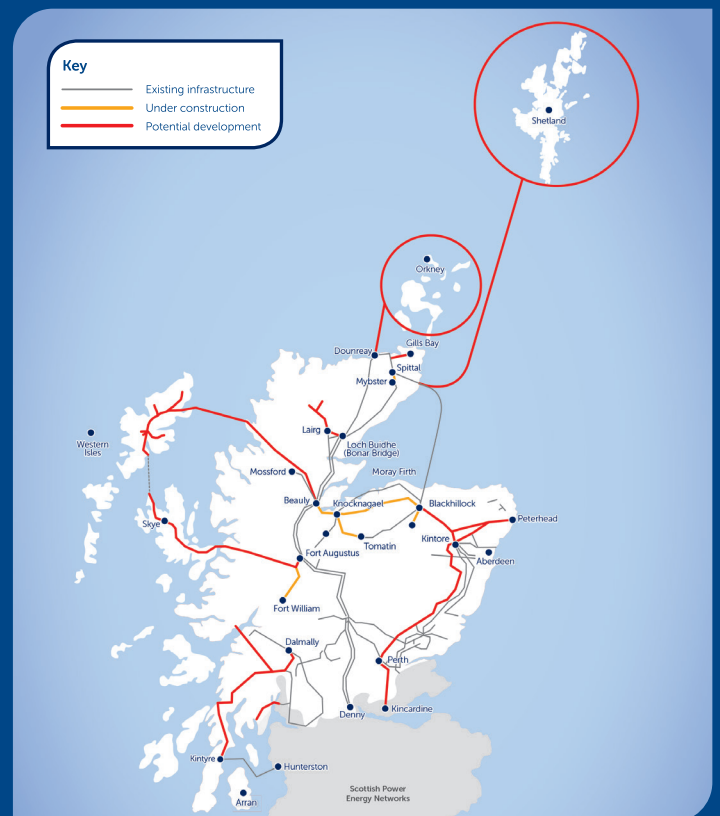
The landscape and environment that contribute to the challenges we face also give the area a rich resource for renewable energy generation. There is a high demand to connect from new wind, hydro and marine generators which rely on Scottish and Southern Electricity Networks to provide a physical link 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.

Overview of Transmission projects



Project need and overview

Project requirement

The power flow on the Beauly – Denny overhead line (OHL) is expected to increase over the next 10 years as more generation connects on the wider system; namely generation towards the west coast, north of Beauly substation and in and around Caithness.

Connecting generation can cause changes to the voltage levels along affected circuits. These changes could mean the network, without intervention, would not meet the voltage requirements set out within the National Energy Transmission System Security and Quality of Supply Standard (NETS SQSS).

Our network and system studies have shown that currently contracted generation will cause such a change, within the Tummel Bridge area, and will require reactive power support to be installed to maintain voltage levels under a number of different system operating scenarios. Reactive power support helps the system by ensuring the voltage levels stay within the required limits and assists in the continuation of the quality and supply of electricity across the network.

To ensure safe, efficient and coordinated operation of our network, it is proposed that a new reactive power substation is connected at the proposed Kinardochoy substation site.

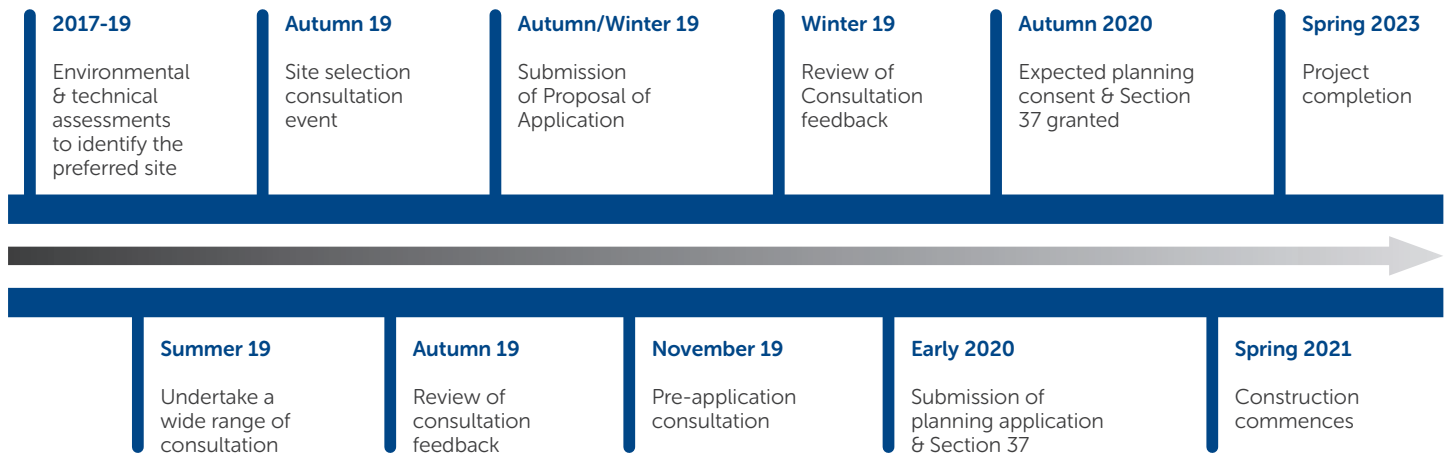
Main elements

This transmission connection will be known as the Kinardochoy substation.

The works will comprise:

- Forestry felling for the substation site.
- Temporary works including a construction compound, laydown and welfare area.
- Formation of a substation site, access track and appropriate landscaping to allow for installation of:
 - Reactive power equipment.
 - A Mechanically Switched Capacitor with Dampening Network (MSCDN).
 - A double busbar arrangement.
- Other electrical infrastructure required to facilitate connection of the substation.
- Dismantling of one OHL tower and replacement with two similar towers to permit a turn in arrangement of the circuits.

Project timeline



Planning application

A proposal of application notice (PAN) was submitted to Perth and Kinross Council on the 8th of October 2019. The proposed development is classed as “National Development” because it is a new substation linking directly to high voltage electricity transmission lines.

This public event forms part of the pre-application consultation and feedback received will inform the forthcoming planning application. We are aiming to submit the planning application to Perth and Kinross Council within the first quarter of 2020, allowing for at least 12 weeks of pre-application consultation. The PAN red line boundary will be rationalised and reduced in size prior to the submission of any planning application. An Environmental Impact Assessment (EIA) screening request has been submitted to Perth and Kinross Council.

In any case there will be a requirement to submit a variety of reports/assessments as part of any planning application. In addition to the proposed substation, there are changes required to the overhead lines (OHL) and towers. These changes will be dealt with via a separate application under Section 37 of the Electricity Act 1989. This application will be submitted to the Scottish Government’s Energy Consent Unit.

There may be a requirement to make improvements to the road network, to facilitate construction traffic and abnormal load movements (i.e. transformer delivery) to the site. If this is the case, this will be covered by a separate planning application(s).

Our proposed solution

Nine potential substation site locations were initially identified, based on proximity to the existing electricity infrastructure, access requirements, and potential environmental constraints. The same substation design and required size of site was used to allow a comparative assessment of the sites to be undertaken.

In August 2019 we presented on our site selection results and our reasons for proceeding with 'Site 4'. We received valuable feedback from the responses to our consultation and since August we have adopted the following changes:

- We understand the concerns raised with regard to taking access from the Schiehalion Road and have removed this from our proposals.
- Similarly, we have opted to remove Compound Area 1 to the north west due to access and visibility.

We have now taken these changes into the design and the following scope of work is being consulted upon.

Substation

The substation will connect into the existing Fort Augustus to Denny overhead line 275kV circuit. The circuits shall be 'turned in' to a new 275kV reactive compensation substation, which shall be built to a 400kV standard.

The substation shall comprise of both Gas Insulated Switchgear (GIS) and Air Insulated Switchgear (AIS), the key components comprise:

- GIS double busbar, Switchgear hall and control building
- Reactive power support equipment including:
 - 100MVar Mechanically Switched Capacitor with Dampening Network (MSCDN)
 - +/-225MVar Static Compensator (STATCOM)
- Interconnecting gas-insulated and air-insulated bars
- Associated electrical infrastructure
- Permanent access track off the B846.

A level platform shall be created to accommodate the electrical plant, structures, internal access and drainage to support operational requirements. As a result, it is anticipated that the construction of the platform will require considerable earthworks to achieve a cut and fill balance of material.

The main buildings within the compound will house the gas insulated switchgear, control building and internal control equipment of the STATCOM. The buildings are proposed to be steel portal frame with external cladding and will be of a maximum height of 16m.

The works will require forestry clearance necessary for the contractor's compound and welfare area, substation platform and permanent access track.

Overhead line tie in

The proposed substation is located adjacent to the existing Fort-Augustus to Denny overhead line, which carries both 275kV and 400kV circuits.

The proposed solution provides a 'turn in' arrangement of the existing 275kV Fort Augustus to Denny circuit.

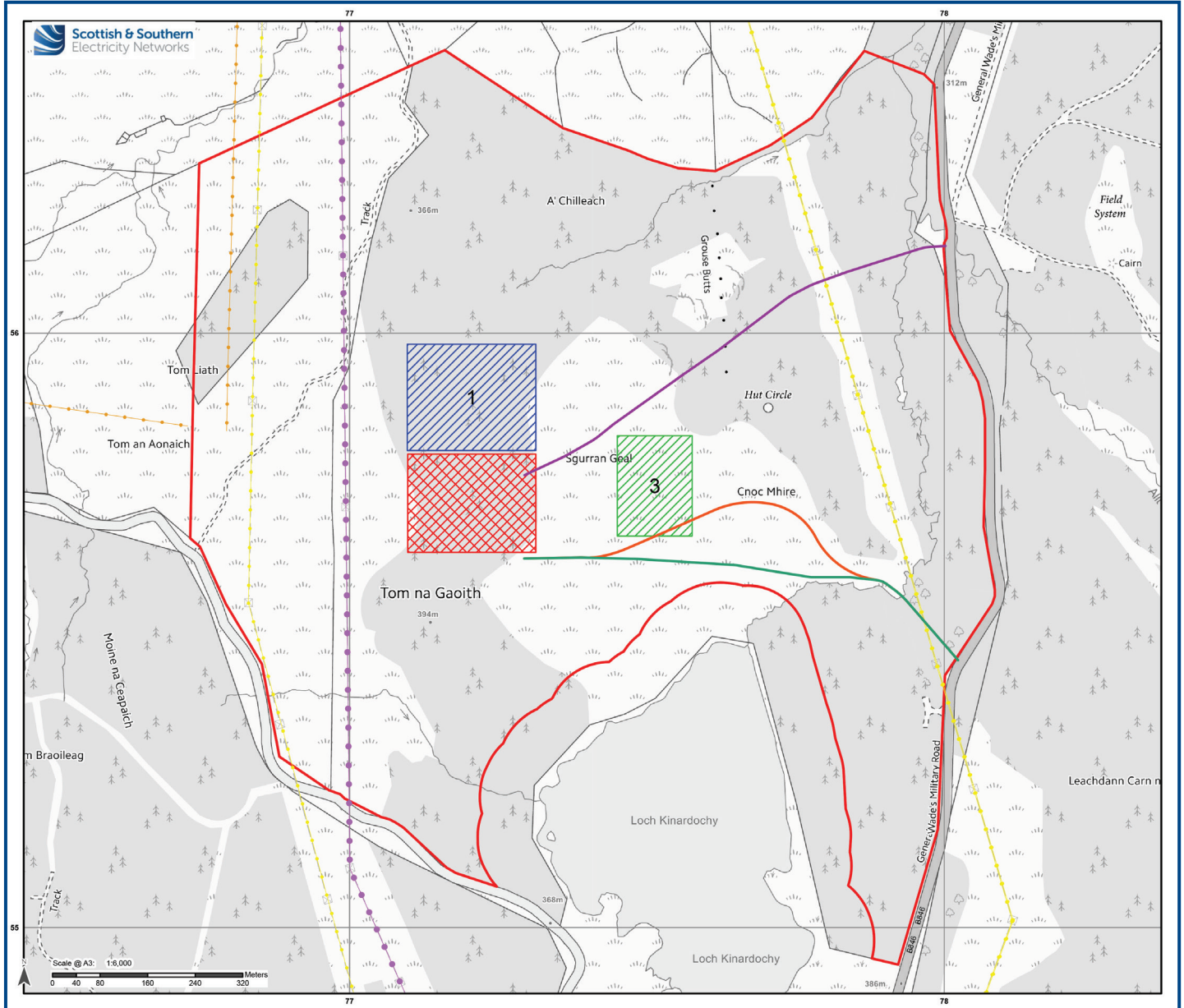
To facilitate the turn in arrangement, the project will require the dismantling of one existing suspension tower and erection of two terminal towers of a similar scale.

The circuits will be turned in via downleads to two termination gantries, which are of a steel lattice construction.

The overhead line works, including diversions shall be applied for under Section 37 of the Electricity Act (1989).

Our proposed location

Proposed site location and access options



Legend

- Proposal of Application Notice Boundary
- Proposed Substation Platform

Construction Laydown Area Options

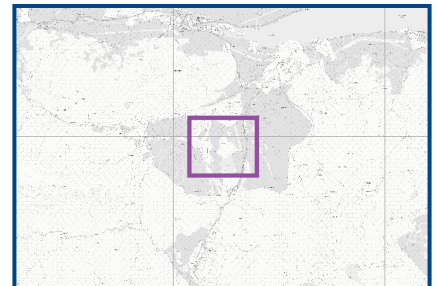
- Laydown Area 1
- Laydown Area 3

Potential Access Track Options

- Access Track 2
- Access Track 3
- Access Track 4

Existing OHL

- 33kV
- 132kV
- 275kV



Key considerations

Landscape and visual

A landscape and visual impact appraisal (LVIA) is currently being undertaken using detailed design information. The LVIA will be one element that informs the final substation design, as well as ensuring appropriate mitigation is incorporated. This can include designing an appropriate site level, using the existing landform features and creation of sympathetic landscaping, for example earth bunds and planting.

A detailed landscaping plan will be submitted as part of the planning application.

SSEN have committed to delivering Biodiversity Net Gain for all projects by 2025 as one of our main sustainability goals. Any planting will be designed to take this into account by utilising native species to screen and enhance the site.



Wildflower Meadow one year after seeding at recently constructed Spittal substation in Caithness

Transport, infrastructure and construction methods

Construction of the substation will require plant and machinery, along with vehicles to transport materials and workers to the site. We anticipate that normal construction traffic will utilise the existing road infrastructure. However, we are undertaking investigations to confirm if improvements are required. A construction traffic management plan shall be produced to outline and manage vehicle movements associated with the development.

The largest plant item to be delivered to the substation will be a Static Compensator (STATCOM) transformer. We are undertaking investigations along various routes to identify the most feasible Abnormal Indivisible Load (AIL) route.

Earthworks

Building the substation platform will require significant volumes of graded stone. Our intention is to retain as much material on site as possible.

This would mean there would be a mass balance of material on site to minimise vehicle movements in the local area, however local sources of stone will be required as part of our development works for the platform design.

The volume of stone required and vehicle movement numbers will be established during the detailed design stage.

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.

Environment

More detailed site surveys by specialists including ecologists and landscape architects are currently underway and this will be used to inform the detailed environmental appraisal and subsequent identified mitigation that will be submitted as part of the consent application.

Landscape and visual amenity

The appearance of the substation within the landscape has been considered at the site selection stage. This included how it would be seen from nearby homes and roads, and longer views. This will be considered further during the development of an appropriate and specific landscaping plan.

The substation would increase the extent of electrical infrastructure within the landscape, but the forested hills will help to screen longer views. The proposed development is not considered to directly affect any designated landscape or wild land areas and any views from the surrounding summits will be at long range.

The proposed site also offers opportunities to use the natural landform features (topography and woodlands) and any views into the proposed development from the nearest residential and amenity areas will be further minimised by appropriate use of landscaping, which may include replanting and sympathetically designed earth bunds where required.



Habitats / Hydrology

There are no sites designated for habitat conservation located either on or close to the site. Loch Kinardochoy is located south of the site boundary. A tributary of Loch Kinardochoy crosses the south-west of the site and the Allt Kinardochoy flows in a northerly direction from the Loch through the east of the site.

Another unnamed watercourse is located in the north of the site and flows in a general northeasterly direction before discharging into the Allt Kinardochoy.

An appropriate site drainage plan for both the construction and operational phases will be developed to ensure no adverse impacts on the surrounding water environment.

The landscaping plan will incorporate specific planting to help achieve a biodiversity net gain at the site.

Forestry

The site is located within an area mostly covered by coniferous woodland plantation, with a small part of it within a glade. Land use within 5km of the site is primarily rural, with large plantation areas located at the east and west. Historical land use on the site has been the same as at present, as shown on the earliest historical maps. Felling will be required to facilitate the development and a woodland assessment will be completed as part of the environmental appraisal. Where felling is required some replacement tree planting will be undertaken as part of the landscaping plan.



Noise

Construction noise is considered to be short term and intermittent and can be controlled through the implementation of a noise management plan, which would include working hours agreed with Perth and Kinross Council. Noise monitoring surveys are scheduled to take place at noise sensitive receptors within the vicinity of the proposed development. The purpose of these surveys is to establish a pre-development baseline prior to noise impact assessments being undertaken. Appropriate operational mitigation measures will be considered dependent on the results of the survey, and subsequent noise assessment.

Protected species

There is limited habitat of interest for protected species at the site due to the types of habitats present. However, we have established species protection plans already agreed with Scottish National Heritage (SNH) and these will be implemented during the construction phase, including pre-construction surveys, to ensure any species in the area are considered and appropriate mitigations put in place.

Notes

What happens now and how do I have my say?

We understand and recognise the value of the feedback provided by members of the public during all engagements and consultations. Without this valuable feedback, the project development team would be unable to progress projects and reach a balanced proposal.

We are keen to receive your views and comments in regards to the following questions:

- Has the requirement for the project been clearly explained?
- Have we explained the approach taken to select the proposed site adequately?
- Are there any additional 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 regarding the proposed substation location and layout?
- Following review of the provided information, how would you describe your understanding of the Kinardocho substation project?
- Overall, how do you feel about the Kinardocho substation project?
- And finally, from your experience to date, can you rate the quality of consultation undertaken on the Kinardocho substation project?

Comments

Your views and comments can be provided to the project team by completing a feedback form or by writing to Louise Anderson, Community Liaison Manager. We will be seeking feedback from members of the public and Statutory Bodies until the 6th December 2019.

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

Community Liaison Manager Louise Anderson



louise.anderson@sse.com



07384 454 233



Louise Anderson
Scottish and Southern
Electricity Networks,
200 Dunkeld Road,
Perth, PH1 3AQ



www.ssen-transmission.co.uk/projects/kinardocho-substation

Information

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

Project Website:

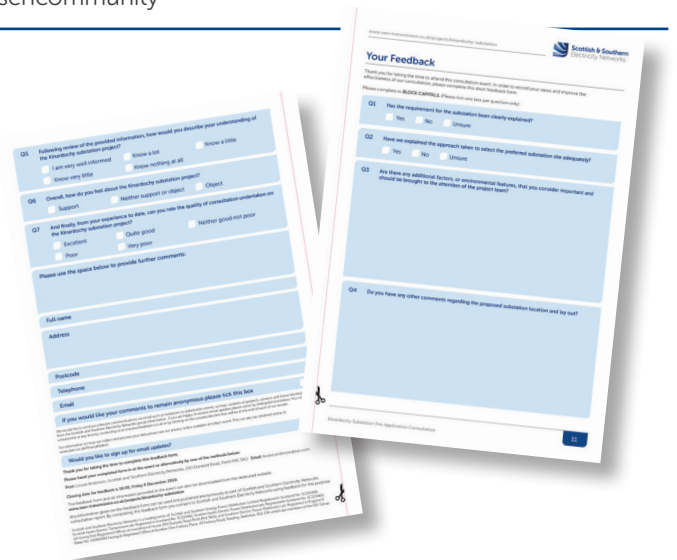
www.ssen-transmission.co.uk/projects/kinardocho-substation

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 substation been clearly explained?

Yes No Unsure

Q2 Have we explained the approach taken to select the preferred substation site adequately?

Yes No Unsure

Q3 Are there any additional factors, or environmental features, that you consider important and should be brought to the attention of the project team?

Q4 Do you have any other comments regarding the proposed substation location and layout?



Q5 Following review of the provided information, how would you describe your understanding of the Kinardochoy substation project?

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

Q6 Overall, how do you feel about the Kinardochoy substation project?

- Support Neither support or object Object

Q7 And finally, from your experience to date, can you rate the quality of consultation undertaken on the Kinardochoy substation 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 your comments to remain anonymous please tick this box

We would like to send you relevant communications via email such as invitations to stakeholder events, surveys, updates on projects, services and future developments from the Scottish and Southern Electricity Networks group listed below. If you are happy to receive email updates please opt in by ticking the box below. You can unsubscribe at any time by contacting us at unsubscribe@sse.co.uk or by clicking on the unsubscribe link that will be at the end of each of our emails.

For information on how we collect and process your data please see our privacy notice available at today's event. This can also be obtained online at www.ssen.co.uk/PrivacyNotice/.

Would you like to sign up for email updates?

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: Louise Anderson, Scottish and Southern Electricity Networks, 200 Dunkeld Road, Perth PH1 3AQ **Email:** louise.anderson@sse.com

Closing date for feedback is 16:00, Friday 6 December 2019.

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

www.ssen-transmission.co.uk/projects/kinardochoy-substation

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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