

East Coast 400kV Overhead Line Upgrade

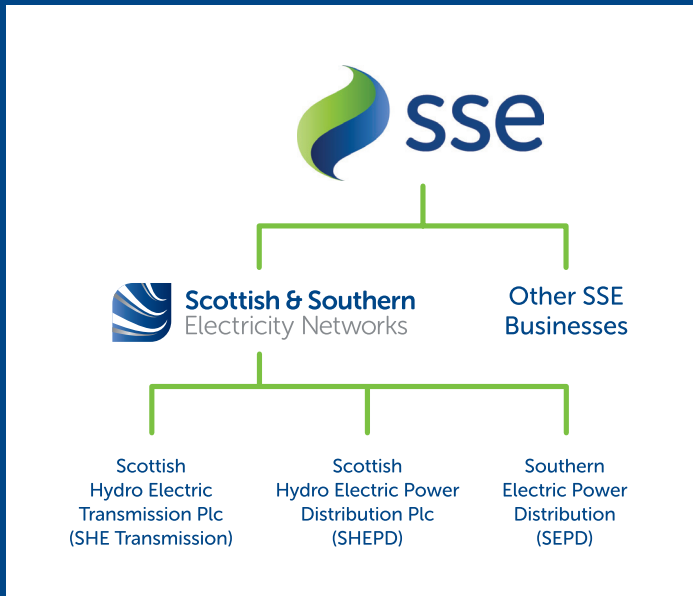
September 2020



Scottish & Southern
Electricity Networks

Who we are

We are Scottish and Southern Electricity Networks, operating under licence as Scottish Hydro Electric Transmission Plc (SHE Transmission) 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. Our 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.

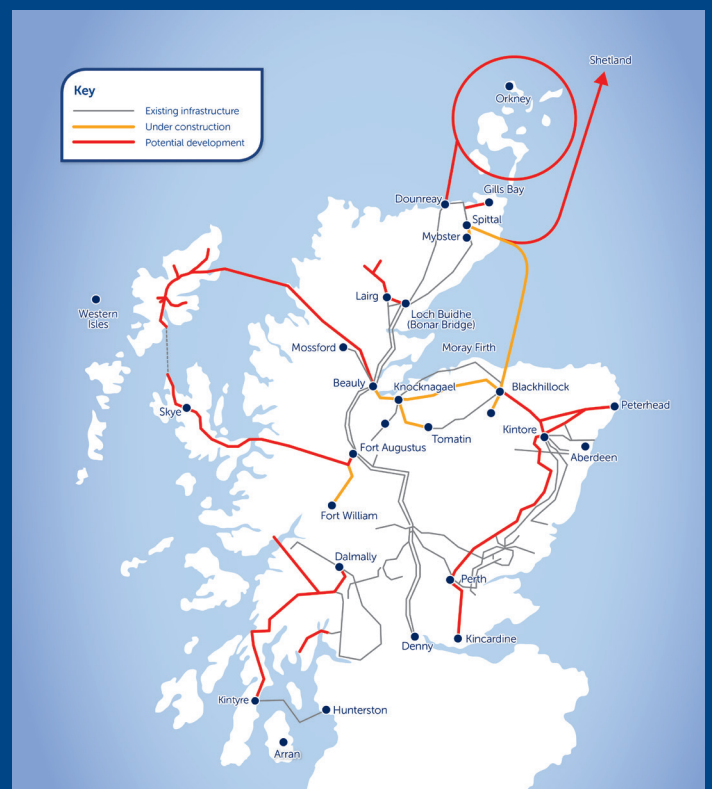
The landscape and environment that contribute to the challenges we face also give the area a rich resource for renewable energy generation. There is a high demand to connect from new wind, hydro and marine generators which rely on Scottish and Southern Electricity Networks to provide a physical link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

As the transmission network provider for the north of Scotland, Scottish and Southern Electricity Networks (SSEN) are responsible for the maintenance of the existing transmission network and also ensuring that the current network can facilitate connection requests from developers when necessary.

The growth of generation in the SSEN area has triggered the need for an upgrade to the East Coast transmission network between Kintore (north-west of Aberdeen) and our boundary with Scottish Power Transmission (SPT) near to Blairingone (east of Stirling).

The East Coast transmission network will be upgraded in two stages.

Stage 1: Upgrade of the existing 275kV network for October 2023

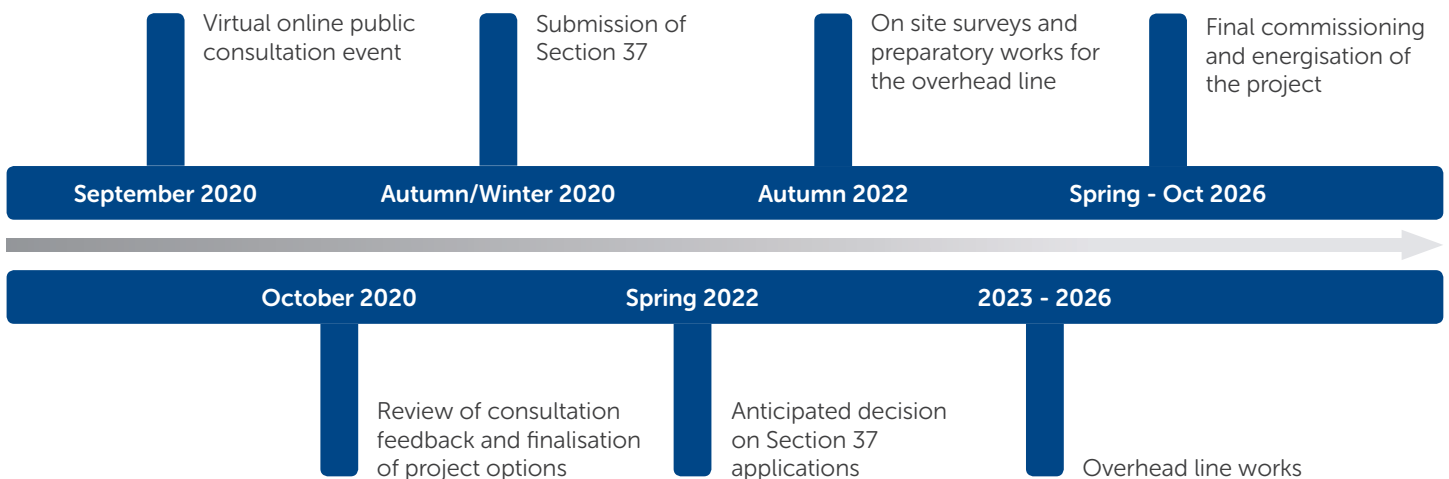
Stage 2: Upgrade of the existing 275kV network to 400kV operation for October 2026.

The East Coast 400kV Overhead Line (OHL) Upgrade is an integral part of the Stage 2 Reinforcement.



Consent application

A Section 37 application will be made under the Electricity Act 1989 for the upgrade of the existing overhead transmission line to operate at 400kV. This will cover all aspects of the overhead line works, including tower extensions, replacement of insulators, conductors, tower and foundation repairs and provision of access tracks to enable these works. This application is made to the Energy Consents Unit of the Scottish Government.



East Coast 400kV OHL Upgrade Route



The OHL upgrade works would involve replacing the conductors, insulators and fittings on the existing overhead line steel lattice towers between Kintore, Fetteresso, Alyth (future substation) up to the border with Scottish Power Transmission (SPT) near to Blairingone (east of Stirling). SPT will carry out similar works on their section of the OHL. This will allow the overhead lines to operate at 400kV.

Project Details - Overhead Lines

Conductor Replacement

The existing conductor is Twin Zebra Aluminium Conductor Steel Reinforced (ACSR) Conductor. This conductor has been in place since the overhead line was constructed in 1963 and 1973 and is due for replacement. The replacement conductor we will use is an All Aluminium Alloy Conductor (AAAC) of stranded construction.



Insulator Replacement

The existing 275kV insulators will be replaced for 400kV insulators. These are slightly longer than the existing insulators as they have more discs. The insulator and conductor replacement will allow the overhead line to transfer a higher capacity of power.

Tower Extensions

The new conductor has a different sag to the existing conductor. Initial studies have identified that some of the towers need to be extended to raise the conductor and ensure statutory safety clearance to ground is maintained. Works are ongoing to determine exact numbers and design of the extensions. Temporary diversions will be used to install the extensions.



Access

To access the towers, we will use a variety of methods including the construction of new stone access tracks, use of existing tracks, laying of trackway panels on favourable terrain or by all-terrain vehicle. We will agree any access requirements with the relevant landowners before commencing works.

Tower refurbishments

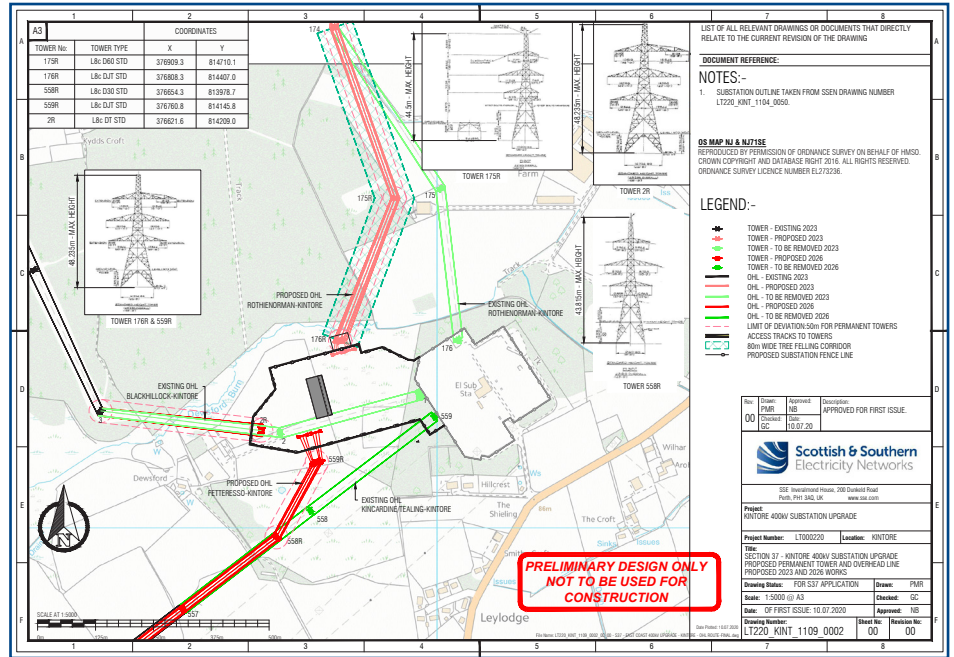
The new conductor is heavier than the existing conductor therefore some of the tower steelwork and foundations will need to be strengthened. The refurbishments and upgrades to the steelwork and foundations will take place ahead of replacing the conductors

OHL Tie In to Substations

Kintore Substation

The OHL connection into the existing Kintore substation will be diverted into the new Kintore 400kV substation via a new OHL tie in.

The new OHL tie in requires the construction of two new towers (558R and 559R) for 2026. A separate Section 37 consent for these works was submitted to the Energy Consents Unit in July 2020.

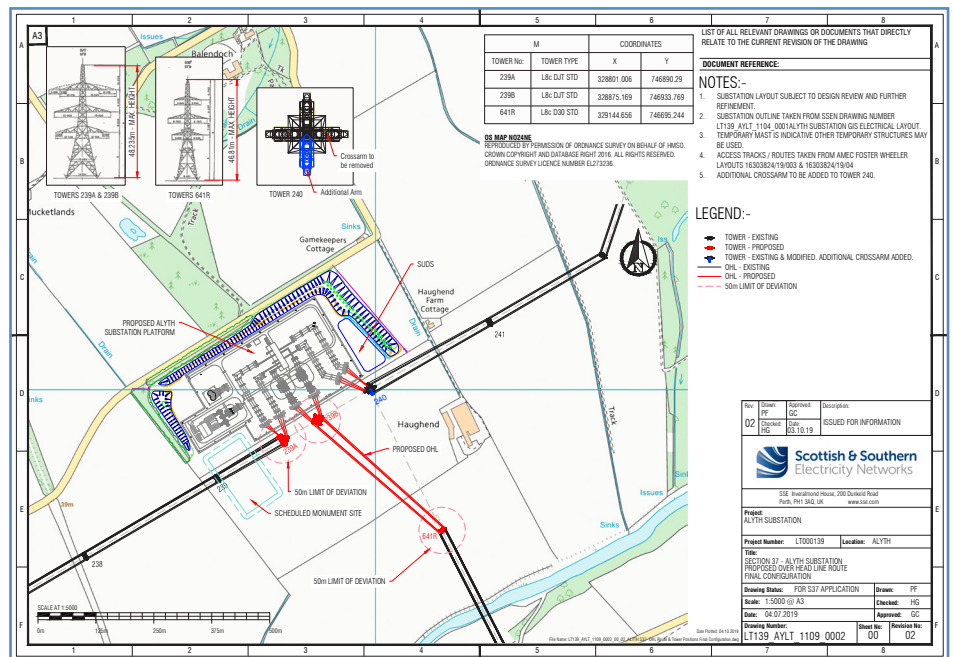


Alyth Substation

Alyth substation is being constructed for Oct 2023.

A Section 37 consent was granted in March 2020 for a new OHL configuration to connect the substation into the network for 2023.

New transformers will be installed and limited pieces of equipment will be replaced to convert the substation to 400kV capability for Oct 2026 but no additional works are required on the OHL.



Fetteresso Substation

New Transformers will be installed and limited pieces of equipment will be replaced to convert the substation to 400kV capability. The current OHL configuration is suitable for 400kV operation and as such no additional OHL works are currently anticipated

Environmental Consideration

This project is proposed as an upgrade to the existing overhead line network between Kintore (north-west of Aberdeen) and Blairingone (east of Stirling) and does not involve the construction or introduction of any new steel lattice towers. An Environmental Impact Assessment is required as part of the Section 37 consent application under the Electricity Act 1989. A Scoping Report has been submitted to the Energy Consents Unit of the Scottish Government to agree which environmental elements should be taken into consideration as part of the assessment.

Ornithology

The overhead line does not pass through any sites designated for ornithological interests, with the closest being Hare Myre, Monk Myre and Stormont Loch Site of Special Scientific Interest (SSSI), which is notified for its non-breeding population of greylag geese. Consultation with relevant organisations has identified the occurrence of several species of conservation concern within the vicinity of the overhead line. This will inform where mitigation measures are required to avoid or minimise effects on these birds during the construction phase.

Water Environment

The overhead line passes over or near to a number of river catchments, watercourses and sites designated for hydrological sensitivities. Several towers located in areas of flood risk but with mitigation measures the project is not anticipated to increase flood risk. Private water supplies will be identified and assessed to determine potential risk to any supplies. Where required, measures will be put in place to ensure that the quality and quantity of water from these supplies would not be adversely affected.

Visual Effects

There would be no material change to the appearance of the overhead line following the reinforcement works as the associated fittings will be visually similar to those present already. Some visual effects would result during the construction from temporary works and as crew and machinery move along the line to replace the conductors and fittings.

Terrestrial and Aquatic Ecology

The overhead line crosses primarily agricultural land, utilised for arable crops and pasture, as well as areas of woodland, moorland, running and standing water. It also passes through a number of biologically designated sites. Targeted surveys and species protection plans would be put in place to minimise potential effects to protected species during construction.



Environmental Considerations cont...

Cultural Heritage

The overhead line crosses a number of designated cultural heritage assets. Further consultation will be required with Statutory Consultees with regards to any direct impacts and suitable mitigation that maybe required. A programme of archaeological works will be implemented, and recommendations provided to minimise the potential effects on assets during construction will be presented in the Construction Environmental Management Plan (CEMP), identifying known cultural heritage assets within close proximity to existing towers and proposed access routes.

Traffic and Transport

A Construction Traffic Management Plan (CTMP) will be developed and used to specify construction traffic routes to suitable roads and appropriately signed diversions, where required during the construction phase of the works. This will be created in agreement with Perth and Kinross, Angus and Aberdeenshire councils.

Noise

Construction noise is considered to be short term and intermittent and will be controlled through the implementation of a Noise Management Plan. An assessment of operational noise will be undertaken, in discussion with the Environmental Health Departments of Perth and Kinross, Angus and Aberdeenshire Council.

Electromagnetic Fields

Electromagnetic Fields (EMF) arise from electric charges and current flow. Exceedance of EMF exposure limits are not expected, but an assessment of the change in EMF strengths due to the overhead line operating at 400kV will be undertaken and the results will be presented alongside and compared with public and occupational exposure limits.



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 project information provided explained the need for the East Coast 400kV Overhead line Upgrade works?
- Have we adequately explained the different parts of the overall project clearly?
- Do you support the decision by SSEN to upgrade the East Coast Transmission Network?
- Do you feel SSEN have given enough consideration to potential impacts on the Environment that this project may have?
- Are there any additional factors, issues or concerns which you wish to bring to the attention of the Project Team regarding our proposal?
- Following your review of the information displayed today, how would you rate your information of the East Coast 400kV Overhead line Upgrade Works?

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 the members of the public and Statutory Bodies until **9th October 2020**.

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



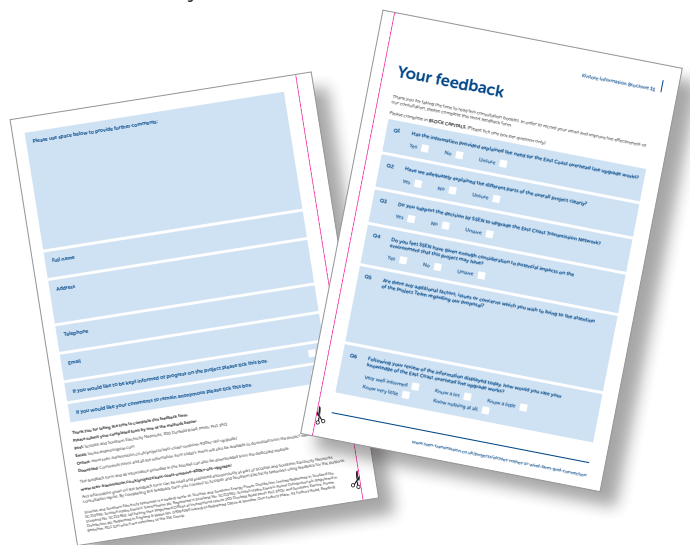
Additional information

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

Project Website: www.ssen-transmission.co.uk/projects/east-coast-onshore-400kv-ohl-upgrade/

Follow us on Twitter:
[@assencommunity](https://twitter.com/assencommunity)

Follow us on Facebook:
[@assencommunity](https://www.facebook.com/assencommunity)



Your feedback

Thank you for taking the time to read this consultation booklet. 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 information provided explained the need for the East Coast overhead line upgrade works?

Yes No Unsure

Q2 Have we adequately explained the different parts of the overall project clearly?

Yes No Unsure

Q3 Do you support the decision by SSEN to upgrade the East Coast Transmission Network?

Yes No Unsure

Q4 Do you feel SSEN have given enough consideration to potential impacts on the environment that this project may have?

Yes No Unsure

Q5 Are there any additional factors, issues or concerns which you wish to bring to the attention of the Project Team regarding our proposal?

Q6 Following your review of the information displayed today, how would you rate your knowledge of the East Coast overhead line upgrade works?

Very well informed Know a lot Know a little
 Know very little Know nothing at all



Please use space below to provide further comments:

Full name

Address

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.

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

Please submit your completed form by one of the methods below:

Post: Scottish and Southern Electricity Networks, 200 Dunkeld Road, Perth, PH1 3AQ

Email: louise.anderson@sse.com

Online: www.ssen-transmission.co.uk/projects/east-coast-onshore-400kv-ohl-upgrade/

Download: Comments forms and all the information from today's event will also be available to download from the project website.

The feedback form and all information provided in this booklet can also be downloaded from the dedicated website:

www.ssen-transmission.co.uk/projects/east-coast-onshore-400kv-ohl-upgrade/

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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