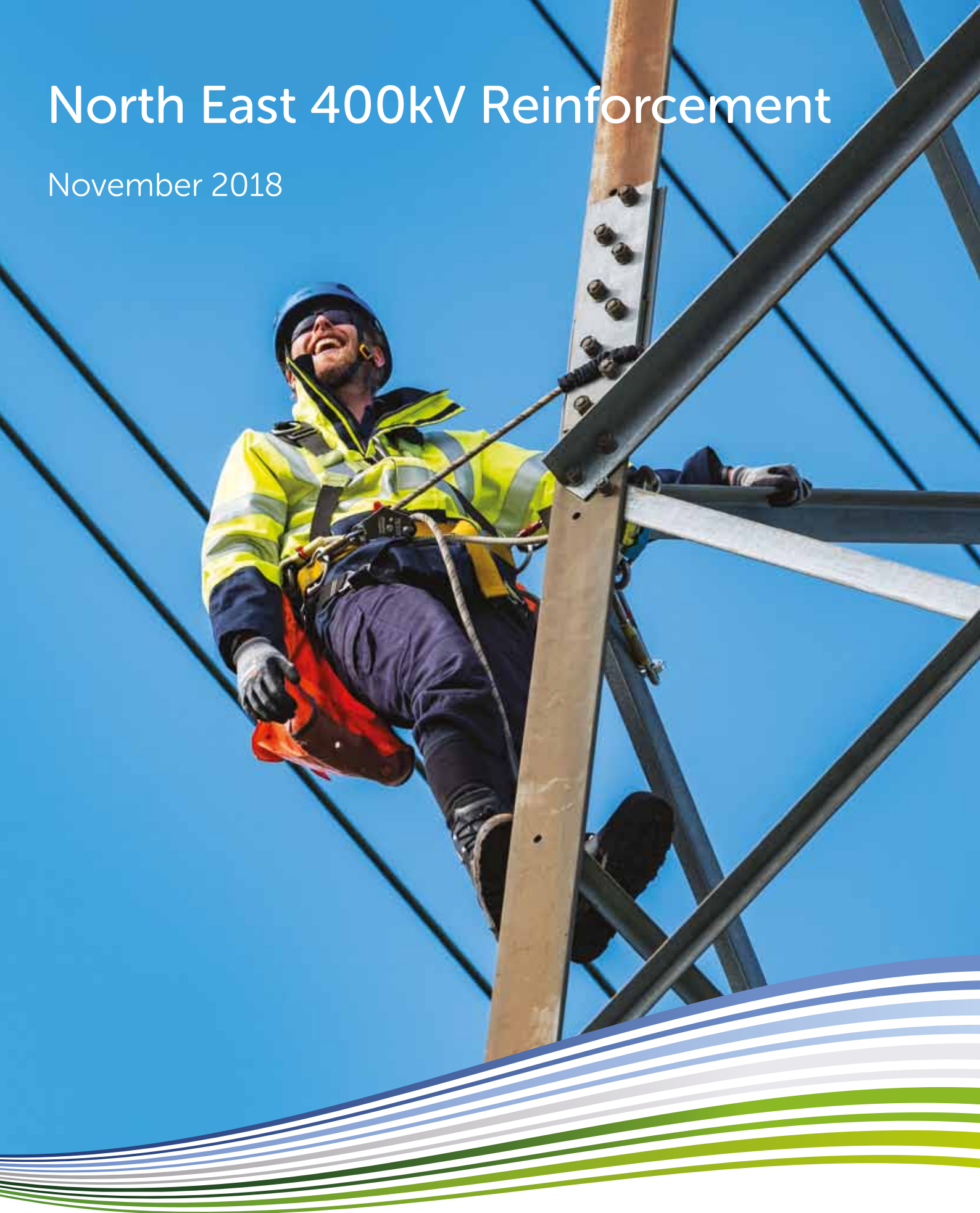


North East 400kV Reinforcement

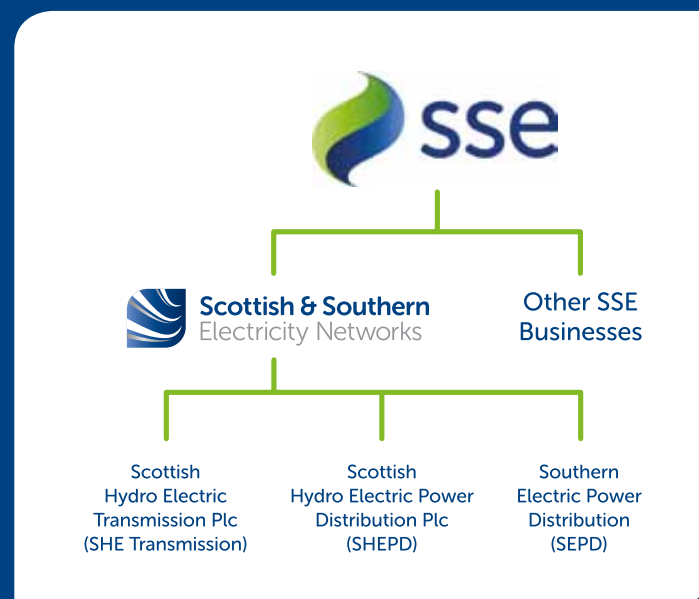
November 2018



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.

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 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 requirement for this project has been necessitated by a planned significant increase in electricity generation capabilities in the north-east of Scotland. Connections for the Moray East Offshore Windfarm, Moray West Offshore Windfarm and the North Connect HVDC Interconnector are required, as well as increased network capacity to accommodate an increase in generation capability at Peterhead Power Station. These projects are currently scheduled to be completed by 2024, with the first connection due in 2021.



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 diversions, replacement of insulators, 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.

For works at the associated substations along the overhead line route, applications will be made under the Town and Country Planning Act for the works required to enable the connection of the overhead lines at 400kV into the substations. These applications are made to the relevant local authority, in this instance Aberdeenshire Council, for determination.



Our Proposed Solution



Map showing the existing overhead line to be upgraded in the North East.

The Overhead Line (OHL) reinforcement works would involve replacing the insulators and fittings on the existing overhead line steel lattice towers between Peterhead, New Deer, Rothienorman, Kintore and Blackhillock as well as reconfiguring a short section of the overhead line to divert it out of Keith substation. This will allow the overhead lines to operate at 400kV.

The works may also include replacing the existing conductors strung along the overhead line route, dependent on the outcome of condition assessments which are currently underway.

Works to accommodate the connection of the overhead lines at 400kV will be required at the substations along the route, these being Peterhead, New Deer, Rothienorman, Kintore and Blackhillock. This will include the replacement of existing equipment and, in some cases, the expansion of the Substations to allow installation of additional new equipment for operation of these substations at 400kV.

Project Details - Overhead Lines

Overhead line reinforcement works

As a minimum, the insulators on the existing overhead line towers will be replaced with new variants suitable to allow the operation of the conductors at an increased voltage of 400kV. This will be required on the overhead lines running between Peterhead, New Deer, Rothienorman, Kintore and Blackhillock substations. Additionally, dependent on the outcome of ongoing surveys, it may be necessary to replace the conductors strung between the towers if their condition merits it.



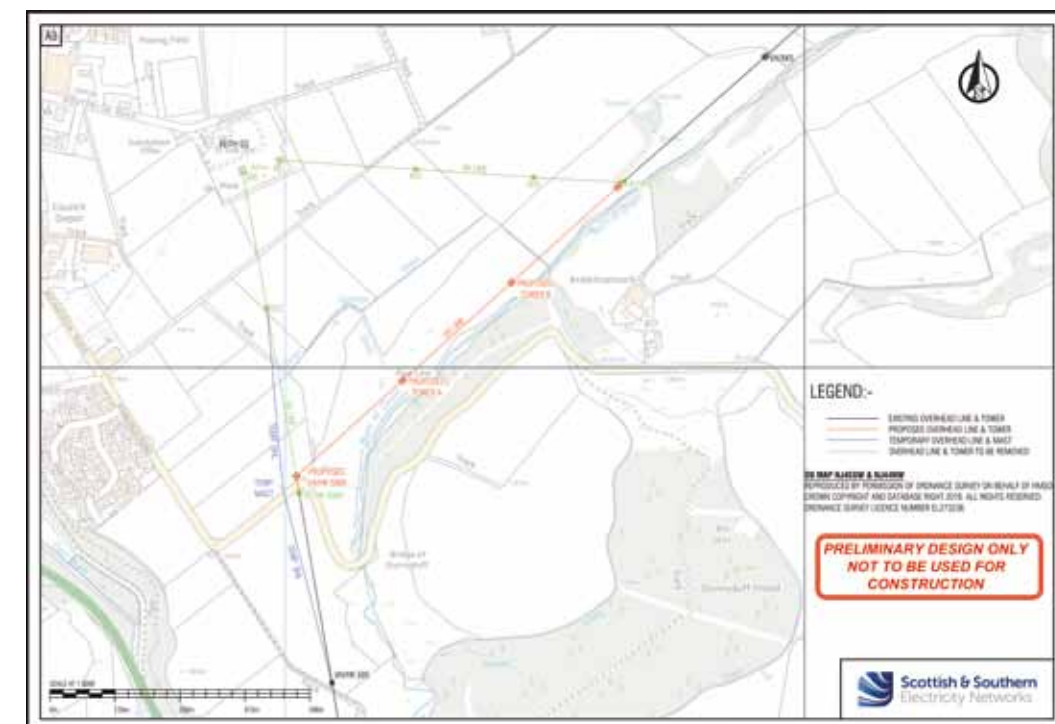
Keith overhead line diversion

The existing line is being diverted past the Keith Substation as this does not form part of the 400kV network, allowing the existing connection to the substation to be removed and a bypass created. This will result in four new towers being installed and seven towers removed which will improve the visual impact of towers and overhead lines in the area. A temporary construction compound will be established near to the Keith Substation site to facilitate these works.

Access to the new tower locations would be established via access tracks. The new towers will require excavations to allow the construction of reinforced concrete foundations to support the towers, as well as the creation of temporary laydown areas to allow the erection of the towers.

Equipment including telehandlers, cranes, tractors, tracked excavators and all terrain vehicles will be required to facilitate these works.

The lines will then be fitted with insulators and conductors strung between them and connected into the existing network.



Proposed overhead line diversion

Project Details - Substations

Kintore Substation Temporary Extension

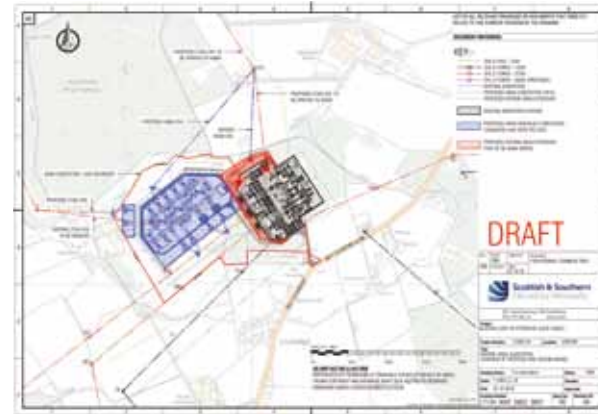
Kintore Substation, currently operational at 275kV, is being extended to enable the incorporation of two Super Grid Transformers, which will allow the substation to connect to the 400kV network.

The extension of the substation platform will require the excavation of the proposed area and the placing of suitable materials to form the extension. The works will involve the construction of new reinforced concrete bunds for the Super Grid Transformers to be placed upon. The construction of the reinforced concrete bunds will necessitate the delivery of steel and concrete to form these. Equipment such as tracked excavators, bulldozers, dump trucks and concrete wagons will be required to facilitate this.

There will be limited reconfiguration works for the Overhead Line connections to enable them to connect to the new Super Grid Transformers.

Delivery of the Super Grid Transformers will be coordinated under the supervision of our specialist abnormal load contractors and Police Scotland. Our neighbours will be advised in advance of any restrictions on road movements once these have been established, however our aim will be to keep any disruption to an absolute minimum and to always provide advance notice of any disruption or road closures.

A temporary construction compound will be established near to the Kintore Substation site to facilitate these works. A new Town and Country Planning application may be required for this temporary extension, subject to the design requirements.



Proposed overhead line diversion

Blackhillock Super Grid Transformer removal

At Blackhillock, the Super Grid Transformers currently step the voltage down from 400kV to 275kV to allow connection to the existing network. The Super Grid Transformers are to be disconnected which will allow a direct connection to the 400kV network.

Removal of the Super Grid Transformers will be coordinated under the supervision of our specialist abnormal load contractors and Police Scotland. Our neighbours will be advised in advance of any restrictions on road movements once these have been established, however our aim will be to keep any disruption to an absolute minimum and to always provide advance notice of any disruption or road closures.



Rothienorman and New Deer Substations

To enable the operation of these substations at 400kV there is a requirement to replace limited pieces of electrical equipment. At Rothienorman there will be a requirement to deliver four new transformers to facilitate operation at 400kV, carried out within the existing footprint of the substation.

Delivery of the Super Grid Transformers to Rothienorman will be coordinated under the supervision of our specialist abnormal load contractors and Police Scotland. Our neighbours will be advised in advance of any restrictions on road movements once these have been established, however our aim will be to keep any disruption to an absolute minimum.

Environmental Considerations

This project is proposed as an upgrade to the existing Overhead Line network in the North East region of Scotland and, excluding the re-alignment of the Overhead Line at Keith Substation, 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.

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 phase of the project as crew and machinery move along the line to replace the conductors and fittings.

Terrestrial Ecology (Habitats and Species)

The overhead line crosses primarily agricultural land, utilised for arable crops and pasture, as well as areas of woodland, forestry, open grassland and marsh. The overhead line does not pass through any sites designated for their natural heritage. Species protection plans would be put in place to minimise potential effects to protected species during construction.

Ornithology

The overhead line does not pass through any sites designated for ornithological interests, with the closest being the Buchan Ness to Collieston Coast Special Protection Areas (SPA) on the Peterhead coast. Targeted bird surveys have identified several species of conservation importance within the vicinity of the overhead line, and these surveys will help inform where mitigation measures are required to minimise effects on these birds during the construction phase.

Water Environment

The overhead line crosses and passes over or near to a number of watercourses, many of which are field drains. The project is not anticipated to increase flood risk at any of these watercourses.

Private water supplies will be identified, and an assessment undertaken to determine potential risk to any supplies. Where required, measures will be identified and put in place to ensure that the quality and quantity of water from these supplies would not be adversely affected.

Cultural Heritage

A Cultural Heritage Management Plan (CHMP) will be produced, identifying known cultural heritage assets that lie within close proximity to existing towers and along, or close to, proposed access routes. Cultural heritage assets would be identified, and recommendations provided to minimise potential effects on assets, where appropriate.

Traffic and Transport

A Construction Traffic Management Plan (CTMP) will be developed and used to control vehicle movements and numbers during the construction phase of the works. This will be created in agreement with Aberdeenshire and Moray 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 Aberdeenshire Council and Moray Council.

Electromagnetic Fields

Electromagnetic Fields (EMF) arise from electric charges and current flow. Significant effects from EMF are not anticipated, but an assessment of the change in electric and magnetic field strengths due to the overhead line operating at 400kV will be undertaken as part of the planning process.



Notes

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 project information provided explained the need for the North East Overhead Line Works?
- Have we adequately explained the different parts of the overall project clearly?
- Do you support the decision by SSEN to upgrade the North East 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 North East 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 Gary Donlin, Community Liaison Manager. We will be seeking feedback from the members of the public and Statutory Bodies until 7th December 2018.

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

Community Liaison Manager Gary Donlin



gary.donlin@sse.com



07384 798 101



Gary Donlin
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:

Project Website:

www.ssen-transmission.co.uk/projects/north-east-400kV

Follow us on Twitter:

@ssencommunity

Follow us on Facebook:

@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 information provided explained the need for the North East 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 North East 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 North East 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

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?

☐

Rothienorman

☐

Peterhead

☐

Keith

☐

Kintore

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: Gary Donlin, Scottish and Southern Electricity Networks, 1 Waterloo Street, Glasgow, G2 6AY **Email:** gary.donlin@sse.com

Closing date for feedback is 7th December 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-east-400kV

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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