

St Fergus Substation

May 2019

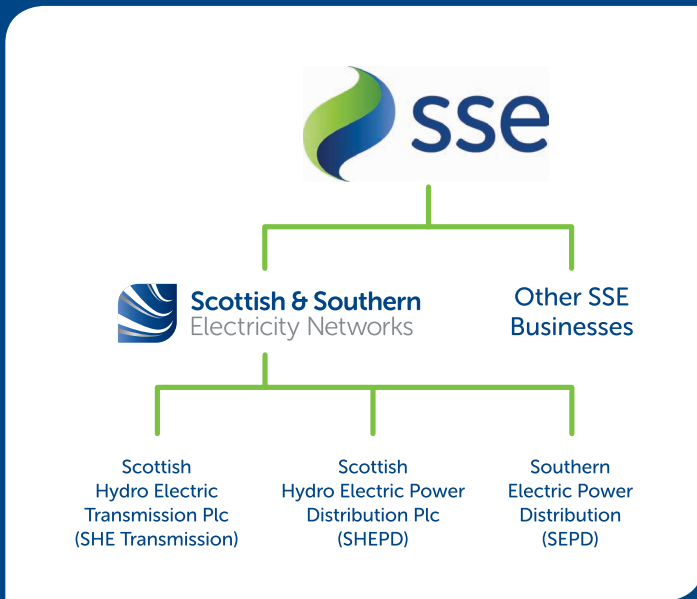


Scottish & Southern
Electricity Networks



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 Overview

Why is a new substation required at St Fergus?

St Fergus Gas Station Substation forms an important part of the SHE-Transmission Network in the North of Scotland. The existing 132/11kV grid transformers were manufactured in 1975 and are reaching the peak of their operational capabilities, triggering the need for them to be replaced.

In addition to the age of the substation equipment, the extreme coastal environment seen at St Fergus has also influenced the plant's longevity. A condition-based assessment has found there to be corrosion present at the transformers.

Due to changes in regulations, it is not possible to install the replacement transformers in the same location as those currently in use, this is due to the transformers now having to be housed inside a building given their location within 2Km of the North East Coast, and increased fire safety requirements.



A site selection report was subsequently commissioned to identify the most suitable option based on operational, technical, economic and environmental assessments. Based on the information detailed in the report, we propose to locate the new 132/11kV St Fergus Gas substation to the West of St Fergus Gas Station and the adjacent A90.

Our Proposed Solution

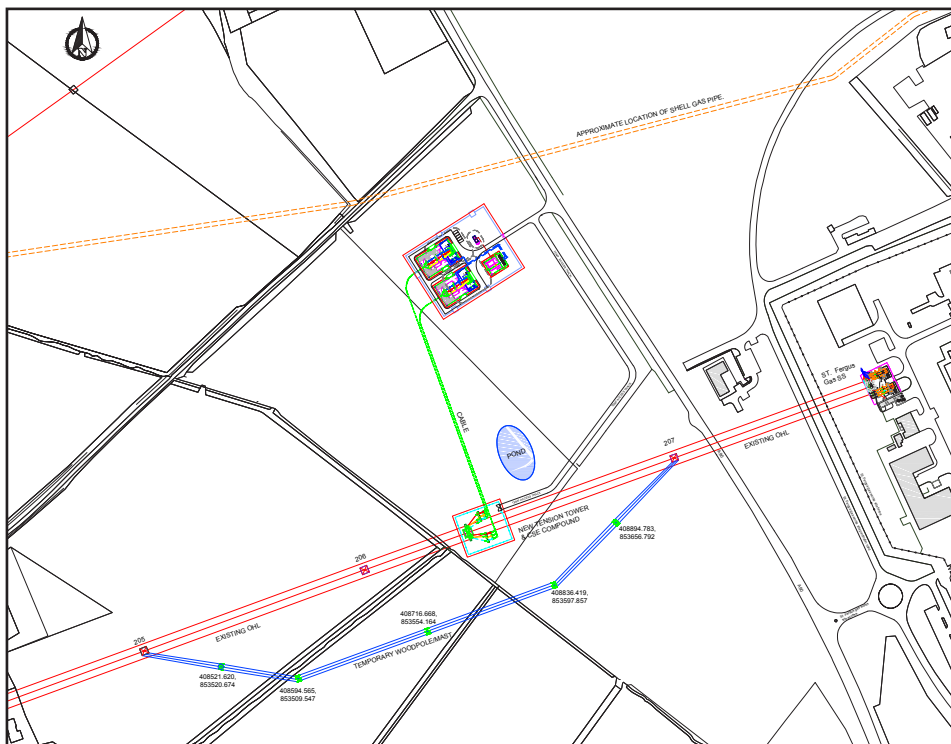
Our proposed site for the relocation of the St Fergus 132/11kV Gas Substation is approximately 400 metres to the West of St Fergus Gas Terminal and the A90 main trunk road.

We propose to establish a temporary construction compound consisting of offices, welfare and storage facilities. This would be located adjacent to the proposed substation location. Once established, works will commence on an access road, exiting the A90 to the new substation, welfare compound and cable sealing end compound. This will enable safe access/egress for the workforce and for members of the public.

Civil works for the substation and cable sealing end platform will be followed by the installation of the new cable sealing end tower to the existing overhead line (OHL) network. Construction of the new substation would commence following completion of the platforms including erection of the two transformer buildings and a control building within the new location. Installation of the two new transformers will then be carried out alongside any additional plant works required completing the installation.

There are two distinct elements of cabling works associated with the project. The first is to connect the new substation to the new cable sealing end tower, this shall be carried out parallel to the substation construction works with connection to the network the final phase of the energisation process.

The second is to enable the existing 11kV customer network to be maintained. This will involve new cables being run between the new and existing substations under the A90 and possible re-routing of existing connections.



Proposed site area

LEGEND:-

- EXISTING OHL
- DIVERTED OHL
- CABLE
- - - SHELL GAS PIPE (APPROXIMATE POSITION)

Project Details

To enable the reinforcement proposals, there is a requirement to undertake development, including public road improvements for transportation of transformers, formation and construction of the new electricity substation and associated overhead line works.

Substation

The substation development works would involve:

- Construction and installation of a substation platform.
- Installation of two 40MVA grid transformers and AIS plant inside buildings.
- Installation of 11kV Gas Insulated Switchgear, Control and Protection systems and LV AC and DC systems in a substation control building



Inside of a GIS substation

Overhead line works

The overhead line diversion works will comprise:

- Construction and installation of a new 132kV tower within a cable sealing end compound.
- Integration of the new tower to the existing 132kV tower route.
- Creation of temporary trident line to divert the existing circuits, so the existing 132kV supplies can be maintained and works can progress in a safe environment without disruption to the existing network



Wooden pole trident line

Road alterations and improvement works

- Creation of a new permanent bellmouth access on the Northbound A90 carriageway to allow access to the substation.
- Creation of access road to the new cable sealing end compound, which will extend from the new substation access road.

Cable works

- Installation of two new buried ducted 132kV cable circuits between the new cable sealing end compound and substation.
- Installation of either two new 11kV transformer feeder circuits or re-routing of the existing 11kV customer connections, between the existing and new substation, which will involve crossing the A90 trunk road.
- Installation of protection communication fibres to extend the existing network



Duct trench for 132kV cable

Screening

Landscaping and screening opportunities will be reviewed once the final location and the visual impact can be considered. This is a decision which will be taken in conjunction with Aberdeenshire Council.

Temporary Construction Compounds

Temporary offices, welfare and storage facilities will be established during the planned construction period. These will be located in close proximity to the substation platform and overhead line access route.

Environmental Considerations

The proposed new substation is being driven by the need to replace the 132/11kV transformers within the existing substation located within the St Fergus Gas Terminal. There is not sufficient space within the St Fergus Gas Grid site to replace these transformers and therefore a location outwith the St Fergus Gas Terminal is being proposed. In progressing the design of this option and seeking consent for the Proposed Development, we are undertaking an environmental appraisal. Initial findings and elements requiring further appraisal as the design develops are set out below:

1. Landscape and Visual

The appearance of the substation and OHL within the landscape, and how it is seen from nearby homes and roads has been carefully considered. The approach to landscape mitigation will be discussed with Aberdeenshire Council during the consenting process. The landscape baseline has a reduced sensitivity to this type of development due to the presence of the St Fergus Gas Terminal which is visible across the study area. Being a coastal location and having a fairly flat topography, long and mid distance views are readily available and the environmental appraisal will consider these.

2. Terrestrial Ecology

The main habitats present at the site are low value improved and semi improved pastures, although there are areas of marshy grassland, standing water and ditches which provide the most valuable habitats in terms of their botanical interest and their value as cover for protected species (nesting birds). No European designated habitats found around the proposed development. There is evidence of badgers using the area. To minimise the effect on terrestrial ecology a preconstruction survey will be implemented, 'tool-box' talks will be held with the contractors and standard measures such as capping of excavations, pipes and possible fencing to exclude badgers from work areas will be undertaken.

3. Ornithology

The proposed substation and OHL lie within enclosed fields used for agriculture. Large numbers of Pink Footed Geese have been recorded using the site for grazing and some Whooper Swan flights have been sighted in the area of the Proposed Development. Both these species are qualifying features of the Loch of Strathbeg Special Protection Area, which is a protected site designated at the European level. Mitigation measures being considered include carrying out as much of the works as possible in summer, so as to minimise and avoid works in the overwintering season. Breeding bird surveys will be undertaken to identify any constraints during the breeding season. A Species Protection Plan for breeding birds would be put in place to minimise potential effects on nesting birds should works be undertaken during the breeding bird season.



Whooper Swan



Pink Footed Goose

Environmental Considerations

4. Noise and Air Quality

Construction noise and air quality effects will be short term, intermittent and the closest residential receptors are approximately 500 m from the site boundary. A baseline noise assessment and noise model has been commissioned. Emissions from site will be controlled through implementation of a Construction Environmental Management Plan, which will incorporate standard construction practices to minimise noise, dust and air emissions. Once operational the substation will not have significant noise or air quality emissions.

5. Hydrology and Soil

The SEPA flood map indicates parts of the Proposed Development (namely the Cable Sealing End compound and cable) are located within a river flood risk area. The wider field around the existing pond is very wet and marshy and the ditch to be crossed by the cable is deep. These aspects will be considered going forward in the final design and micro-siting of the Proposed Development within the field network. A Flood Risk Assessment has been undertaken to understand the effects of this on the flood risk area. There are also some potential groundwater dependent terrestrial ecosystems in the study area and consideration will be given to the potential effects on the project on these features.

6. Cultural Heritage

A Cultural Heritage Desk and Field Study undertaken in November 2018 has established that there is a low potential for archaeology of any date to survive on the Site, notwithstanding agricultural remains. The requirements for mitigation will be determined in consultation with the Archaeology Service at Aberdeenshire Council, this is expected to be a watching brief of the constructions process during earthworks, or possibly pre-commencement investigation work. There are no designated assets within the 500m study area and due to the presence of St Fergus Gas Terminal visibility between the site and the nearest designated assets are prohibited meaning there will be no change on the setting of these designated features.

7. Traffic and Transport

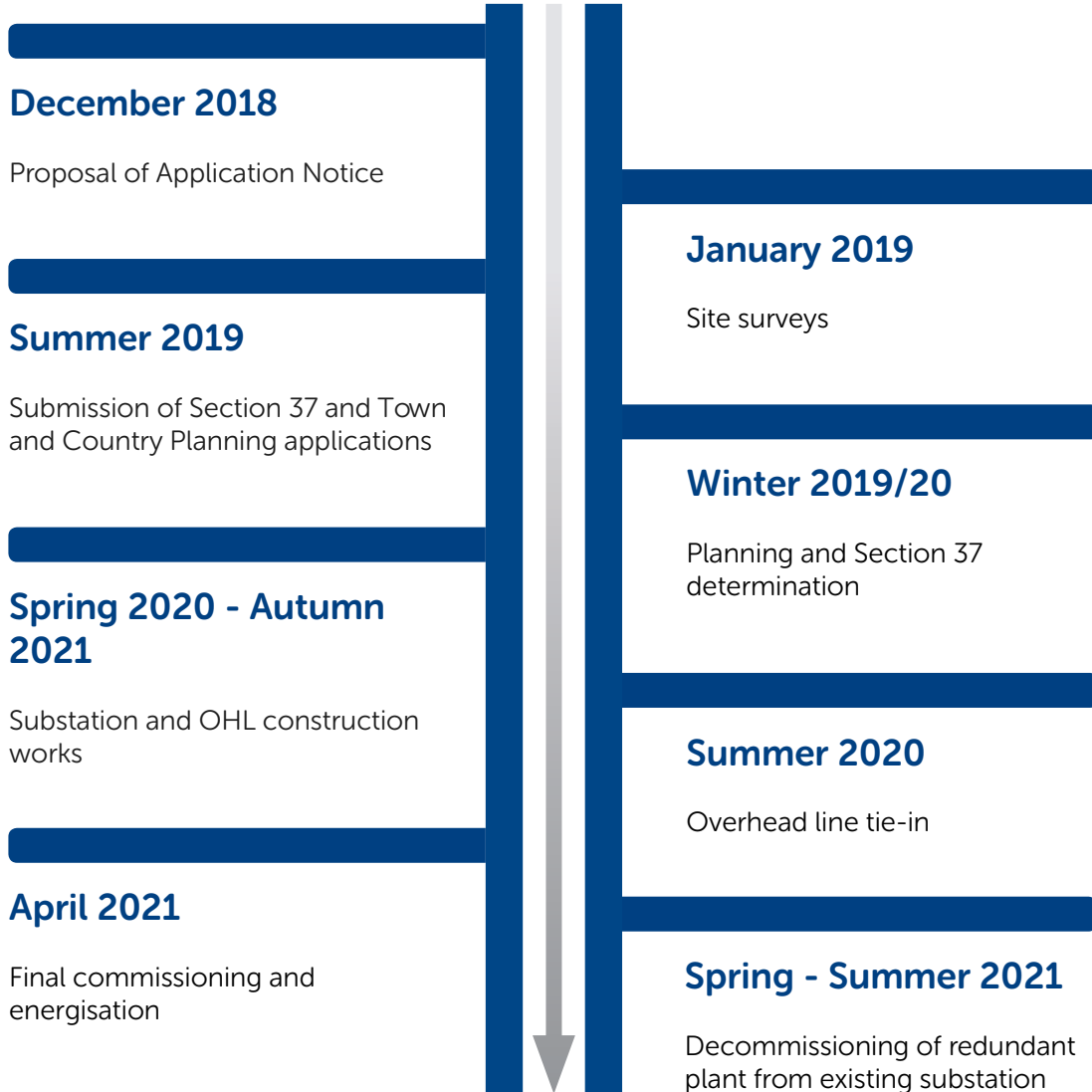
The volume of traffic required by the Proposed Development during construction on an average daily basis is not considered to exceed 1% of the current vehicle flow on the A90. The design of the access from the A90 will comply with relevant highway design standards for the trunk road network and will be agreed in consultation with Transport Scotland. Due to the nature of the Proposed Development, operational traffic will be infrequent, mostly be required for inspection and maintenance. Thus, operational traffic will not be noticeable within the current traffic flows on the A90.

8. Next Steps

Given the relatively small scale of the Proposed Development and the lack of significant environmental effects expected, it is not proposed to submit a formal Environmental Impact Assessment (EIA) Report with the project. Aberdeenshire Council has confirmed that a formal EIA is not required for the Town & Country Planning application. An opinion is yet to be received from the Energy Consents Unit with regards to the requirement for an EIA for the Section 37.



Project Timeline



Planning application

A planning application will be submitted to Aberdeenshire Council for Erection of Electricity Substation Comprising Platform Area, Control Building, Plant Enclosures, Associated Plant & Infrastructure, Ancillary Facilities, Landscape Works and Road Alterations and Improvement Works.

We will also submit an application for consent from the Scottish Government's Energy Consents Unit through Section 37 of the Electricity Act 1989. This will cover the overhead line and associated works including downloads from any new or replacement 132kV tower, and a cable sealing end compound. That application will be submitted around the same time as the planning application.

The development proposals also require some tree felling for the temporary overhead line diversion. These works do not require formal planning consent.

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 works at St Fergus Gas Terminal?
- Do you agree with the proposed substation at St Fergus Gas Terminal?
- Do you have any comments on our chosen location for the St Fergus substation
- 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 knowledge of the proposed works at St Fergus Gas Terminal?

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 **31 May 2019**.

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,
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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/st-fergus-substation

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 project information provided explained the need for the works at St Fergus Gas Terminal?

Yes No Unsure

Q2 Do you agree with the proposed Substation at St Fergus Gas Terminal?

Yes No Unsure

Q3 Do you have any comments on our chosen location for the St Fergus substation?

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 proposed works at St Fergus Gas Terminal?

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.

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

Online: www.ssen-transmission.co.uk/projects/st-fergus-substation

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

Closing date for feedback is 31 May 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/st-fergus-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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