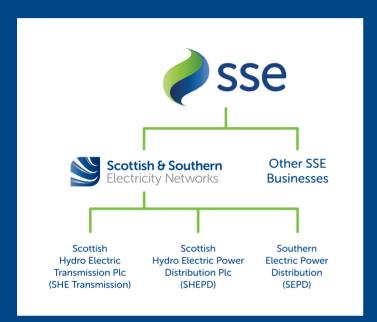
Kintore 400kV Substation Pre-Application Consultation



02	Kintore Information Brochure

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.



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.

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



Project Overview - Kintore 400kV substation

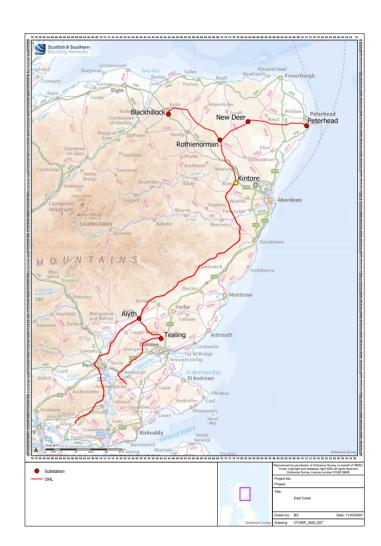
A number of significant projects connecting to the transmission network has triggered the need for a 400kV substation extension at Leylodge, Kintore.

Each year the electricity system operator (National Grid ESO) assesses all proposed networks reinforcements across Great Britain and provides a recommendation on whether these proposals should proceed. This is called the Networks Options Assessment (NOA). The NOA in 2018 and 2019 has provided "Proceed" signals for the east coast and north east network to be reinforced to 400kV operation.

To allow this, the north east and east coast networks require reinforcement via a new substation at Kintore. This involves a phased development of a new substation operating at 400kV, with 'Phase 1' completed to tie in with the network north of Kintore in October 2023 and 'Phase 2' completed for the network south of Kintore energising to 400kV operation in 2026.

To ensure the security and quality of supply of electricity in the transmission network we are proposing several upgrades and reinforcements across the north east and east coast of Scotland. More information on all these developments and the drivers for these proposed works can be found at:

https://www.ssen-transmission.co.uk/information-centre/north-east-east-coast-works





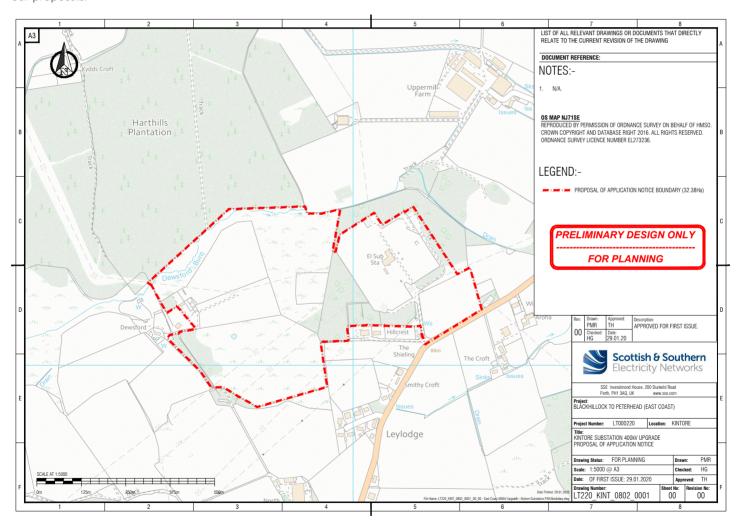
Planning Application

SHE Transmission currently have an existing consent to develop a 400kV substation, which was approved in December 2012 and extended in November 2015. Since this time there have been changes to the needs of the network, which requires us to change our existing plans to ensure that we are delivering the most economic, coordinated and efficient solution for the consumer.

We have consulted with Aberdeenshire Council regarding these changes and following these discussions we will be submitting a new planning application to support our updated proposals. This will allow Aberdeenshire Council to give due consideration to the changes. It also provides an opportunity for consultees and members of the local community to provide to feedback on our proposals.

We are intending on submitting our Town and Country Planning (Scotland) Act 1997 application for consent to Aberdeenshire Council in spring/summer 2020. This will follow our review of the feedback we receive during the consultation period.

The proposed development will also require consent from the Scottish Governments Energy Consent Unit, through section 37 of the Electricity Act 1989. This will cover all aspects relating to the overhead line works associated with our proposals. These works comprise of a limited number of diversions and 'tie ins' which relate to ongoing reinforcements associated with the wider east coast and north east transmission network.



Proposal of Application Notice Boundary

Our Proposed Solution

Proposed solution

Our chosen site for the proposed new substation is on the land north east of Leylodge, Kintore, Aberdeenshire. This site was chosen as it is adjacent to the existing substation in Kintore to which our proposals must electrically connect with.

The following additional factors were considered during the site selection appraisal review of the site for suitability including, ecology, drainage, topography, flood risk, ground conditions, access constraints and proximity to the existing transmission network.

Construction of the substation will require plant and machinery, along with vehicles to transport materials and workers to site. The largest plant items for the substation will be the installation of two 1200 MVA super grid transformers.

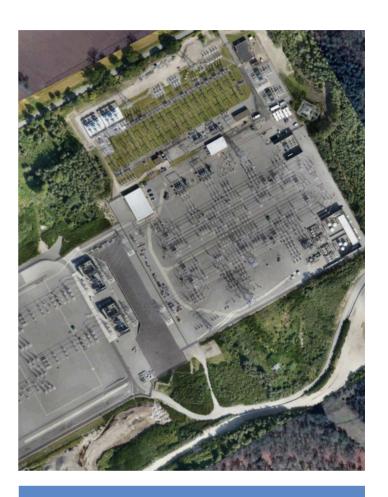
We are currently considering options for our substation design. It is the current view that an Air Insulted Switchgear (AIS) substation will be the preferred solution.

Project Drivers

There are several key drivers which are triggering the need to amend our current proposals at Kintore. Over the coming years we will be proposing several ambitious projects and network reinforcements as we play our part in helping Great Britain transition towards achieving a Network for Net Zero.

There are a number of large renewable energy developments such as Moray East Offshore Windfarm, Moray West Offshore Windfarm, the NorthConnect HVDC Interconnector and Caithness-Moray HVDC link among others, which are driving the need to ensure that the Transmission Network in the north of Scotland can take energy from the source of generation to centres of demand in Scotland and across the rest of Great Britain.

As introduced, all of our proposed major reinforcements are assessed annually by the GB System Operator, National Grid ESO, as part of its Networks Options Assessment (NOA). Each year the NOA process will recommended whether a project should go ahead or not. The NOA process is one of the ways in which we ensure that the projects we proceed with are necessary.



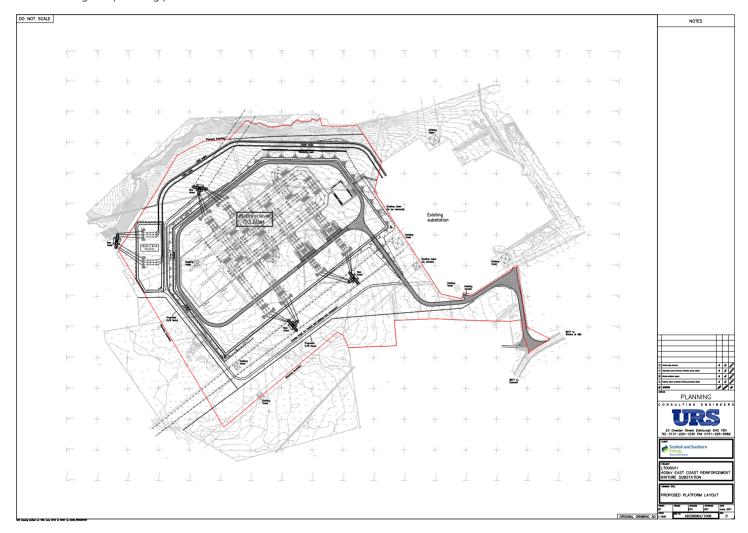
Other works at Kintore

As part of our license condition, we are required to ensure the transmission network is operated as efficiently as possible. As part of regular assessment of our assets, we have identified a need to replace infrastructure which form part of the Kintore 132kV substation due to their age and condition. These works are required to be completed before 2026.

A number of options are being reviewed and it is likely that we will look to develop a new 132kV substation in close proximity to the existing site. This may require reconfiguration of our existing assets and their interconnectivity. We have not concluded our options for a change of the Kintore 132kV busbar and we will be developing our technical solution and programme to meet the asset replacement timescales.

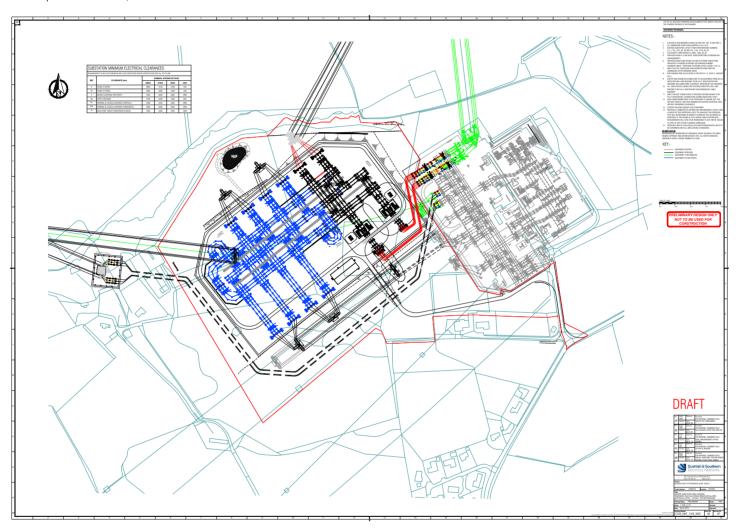
Our Consented Design

In December 2012, SHE Transmission successfully received planning permission from Aberdeenshire council to construct a new substation at Leylodge, Kintore. This consent was then extended in November 2015. The below image depicts the final proposals which were given planning permission at this time.



Our Proposed Design

The consented design has been reviewed with respect to the project drivers and needs for the transmission network for energisation of the north east and east coast 400kV networks in 2023 and 2026 respectively. Some changes have been proposed which allow us to develop an economic, efficient and coordinated solution.



Changes in design

To permit the phased energisation of the Kintore 400kV substation, The above electrical layout has been developed which incorporates the following key changes:

- Additional AIS bays
- Interconnecting cables between the 275kV (existing) and 400kV substation (proposed)
- Repositioning of the substation control building

Project Details

The phased delivery of the Kintore 400kV substation sees two reinforcement projects whose creation includes formation and construction of an electricity substation and associated overhead line works and tie ins. Explanation of project elements in greater details.

Substation

Phase 1: Completion in 2023

- Enabling works and site clearance
- Formation of site and operational access
- Full platform earthworks
- Installation of two line connected 1200MVA 400/275kV super grid transformers
- Construction and installation of a substation control building

Phase 2: Completion in 2026

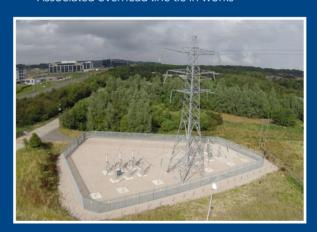
- Completion of the substation platform and civil engineering design for Phase 2
- Installation of the remaining 400kV bays that make up the double busbar



Cable and Overhead Line

Phase 1: Completion in 2023

- Temporary diversion of required overhead lines
- Installation of new 400kV steel lattice towers
- Formation and installation of a cable sealing end compound to permanently divert the Cairnford 275kV circuit
- Installation of 275kV cable around the perimeter of the substation
- Associated overhead line tie in works



Phase 2: Completion in 2026

- Temporary diversion of overhead lines (Fetteresso – Kintore)
- Installation of two new 400kV overhead line towers

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



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 items to be delivered to the substation will be two 400kV Super Grid Transformers.



Earthworks

Building the substation platform will require large 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 may 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



Screening

There may be the need to screen this site to lessen the visual impact of our proposal. This is a decision that will be taken in conjunction with Aberdeenshire Council. At this early stage of the process we do not have detailed designs of screening measures, however if required, these would most likely involve earth bunding and planting a variety of trees around designated areas of the footprint of the site

Environmental Impacts



The current landscape is already influenced by electrical infrastructure (such as the existing 275Kv substation). There are plans to introduce landscape mitigation measures including bunding and new tree planting to help "screen" the development and ensure the overall character of the area is not diminished.

A Landscape and Visual Impact Appraisal (LVIA) will be carried out to understand how the substation and new towers will look in the surrounding area and identify potential effects. This will include how the substation and towers will be seen from residential areas and routeways.



The proposed substation site and surrounding area is dominated by agricultural land and woodland. The site is not located within any sites designated for their natural heritage. Protected species surveys carried out in 2019 confirmed that badgers are present in the area with several badger setts recorded near the proposed development. Further badger monitoring is being carried out in 2020. Species protection plans would be put in place to minimise potential effects to protected species, where required.



Plantation forestry is present to the north of the substation site, part of which falls within the Inventory of Ancient Woodland, and a small block of conifer woodland is present to the south. A tree survey will identify which trees need to be felled or monitored to accommodate the works. Any loss of trees from felling would be offset by the planting of new trees to aid visual screening and for habitat enhancement purposes.



Breeding bird surveys were undertaken at the site in April to July 2019. Thirty seven species were recorded, including seven species of conservation importance (house sparrow, skylark, starling, song thrush, tree pipit, wood warbler and yellow hammer) with no evidence of any protected Schedule 1 or Annex 1 species.



The area was thoroughly investigated for the previous application, which recorded remains of a large enclosure and an adjacent building within the substation footprint. No designated sites were recorded. An archaeological appraisal of the site and its surrounding area would be undertaken to understand the potential effects on the historic environment. Consultation will be carried out with Aberdeenshire Council Archaeology Service to identify any on-site archaeological investigation that would be required before construction works commence and a Written Scheme of Investigation would be prepared which would set out a strategy for archaeological mitigation in advance of the construction works.

Environmental Impacts



The substation site is not in an area identified as being at risk from river flooding. It is intended that Sustainable Urban Drainage Systems would be incorporated into the design to account for any increased surface level water resulting from the development. Previous surveys identified private water supplies in the vicinity of the site. An updated survey has been undertaken to check the private water infrastructure and groundwater abstractions in the area and ensure appropriate mitigation measures are put in place to protect these if necessary. No peat soils have been identified within the footprint of the development. There will be a loss of agricultural soil, but it would remain on site for landscape mitigation.



The substation site is situated predominately on agricultural land with fields generally used for livestock grazing. There would be permanent loss of this land for construction of the substation and access track, along with a small area of woodland. The loss of any trees would be offset through planting of new trees for visual screening purposes.



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 Aberdeenshire Council. Baseline noise monitoring surveys are being undertaken at noise sensitive receptors within the vicinity of the substation site to inform an operational noise assessment. Appropriate mitigation measures will be considered dependent on the results of the assessment.



The construction of the substation will require vehicles to deliver plant, machinery and workers to the site. Access would use the same junction off the B977 (Kintore to Dunecht road) as is used for the existing substation. An appropriate Construction Traffic Management Plan would be developed to ensure road safety for all other road users during the construction works for suitable management of all abnormal loads.



Considering the locations of the proposed OHL diversions, an assessment would be carried out to ensure that the electric and magnetic field strength complies with exposure guideline limits.

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:

- How would you rate the overall quality of information presented at today's consultation event?
- How do you feel regarding our proposals to construct a new 400Kv substation at Leylodge, Kintore?
- Has the requirement for the proposal of a new substation at Leylodge, Kintore been adequately explained?
- Do you feel the project team have given enough consideration to ensure environmental impacts associated with the project are minimised as much as possible?
- Do you have any further comments you would like the project team to consider?

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 Tuesday 31st March

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

Community Liaison Manager, Gary Donlin



gary.donlin@sse.com



07876 837 490



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:

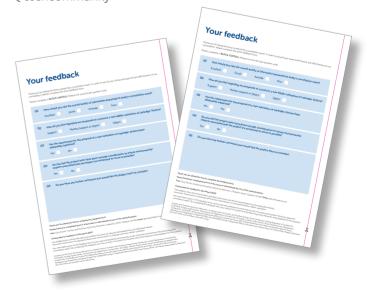
www.ssen-transmission.co.uk/projects/kintore-400kv-substation

Follow us on Twitter:

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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	How would you rate the overall quality of information presented at today's consultation event? Excellent Good Average Poor
Q2	How do you feel regarding our proposals to construct a new 400Kv substation at Leylodge, Kintore? Support Object Object
Q3	Has the requirement for the proposal of a new substation at Leylodge, Kintore been adequately explained? Yes No
Q4	Do you feel the project team have given enough consideration to ensure environmental impacts associated with the project are minimised as much as possible? Yes No
Q5	Do you have any further comments you would like the project team to consider?

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 31st March 2020

The feedback form and all information provided at the event can also be downloaded from the dedicated website: www.ssen-transmission.co.uk/projects/www.ssen-transmission.co.uk/projects/kintore-400kv-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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