


# Kintore 132kV Asset Replacement project



**Scottish & Southern**  
Electricity Networks

TRANSMISSION



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graph TD; SSE[SSE] --- SSN[Scottish & Southern Electricity Networks]; SSE --- OSB[Other SSE Businesses]; SSN --- SHTP[Scottish Hydro Electric Transmission PLC (SHE Transmission)]; SSN --- SHPD[Scottish Hydro Electric Power Distribution PLC (SHEPD)]; SSN --- SEPDS[Southern Electric Power Distribution (SEPD)];
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The diagram illustrates the corporate structure of SSE. At the top is the SSE logo. A horizontal line below it branches into two vertical lines. The left vertical line leads to the logo and name of Scottish & Southern Electricity Networks. The right vertical line leads to the text 'Other SSE Businesses'. Below the Scottish & Southern Electricity Networks logo, another horizontal line branches into three vertical lines, each leading to a specific business unit: Scottish Hydro Electric Transmission PLC (SHE Transmission), Scottish Hydro Electric Power Distribution PLC (SHEPD), and Southern Electric Power Distribution (SEPD).

**SSE**

**Scottish & Southern Electricity Networks**

**Other SSE Businesses**

**Scottish Hydro Electric Transmission PLC (SHE Transmission)**

**Scottish Hydro Electric Power Distribution PLC (SHEPD)**

**Southern Electric Power Distribution (SEPD)**

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.

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.

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.

**Key**

- Existing infrastructure
- Under construction
- Potential development

The map displays the proposed transmission network for Scottish Power Energy Networks across Scotland. Major cities and towns marked include Glasgow, Edinburgh, Aberdeen, Dundee, Perth, Inverness, and various locations in the Highlands and Islands. The network shows a mix of existing green lines, orange lines under construction, and red lines for potential development. A callout box highlights the Orkney and Shetland islands, showing their connection to the mainland network.



# Project need and overview

Kintore substation is situated approximately 20km North West of Aberdeen and is a critical site on the Electricity Transmission Network. It acts as the connection hub for many other 275kV and 132kV sites in the North East and facilitates power transfer down the East Coast of Scotland.

The 132kV equipment at Kintore is nearing the end of its operational life. Asset data and analysis has shown that the asset should be replaced, and this has been agreed by the energy regulator Ofgem.

The replacement of the 132kV substation will provide a more flexible busbar configuration which will deliver a more robust and reliable 132kV network in the area. One of SSEN Transmission's regulatory obligations is to ensure a safe and reliable network, to fulfil this it is necessary to upgrade the 132kV equipment at the Kintore site. This project outlines the works required to replace the 132kV equipment at Kintore substation. There is another separate project to construct a new 400kV substation to the east of the current substation at Kintore. This project was granted planning approval in July 2021 and construction for that project commenced in August 2021.

## Planning application

The proposed development is classed as "National Development" because it is a new substation linking directly to high voltage electricity transmission lines (132kV and above).

A proposal of application notice was submitted to Aberdeenshire Council on the 22nd June 2021 allowing for pre-application consultation before submission of the planning application.

This public event forms part of the pre-application consultation and feedback received will be considered and included in the Proposal of Application Consultation report which forms an important part of the forthcoming planning application. We are aiming to submit the planning application to Aberdeenshire Council in February 2022.

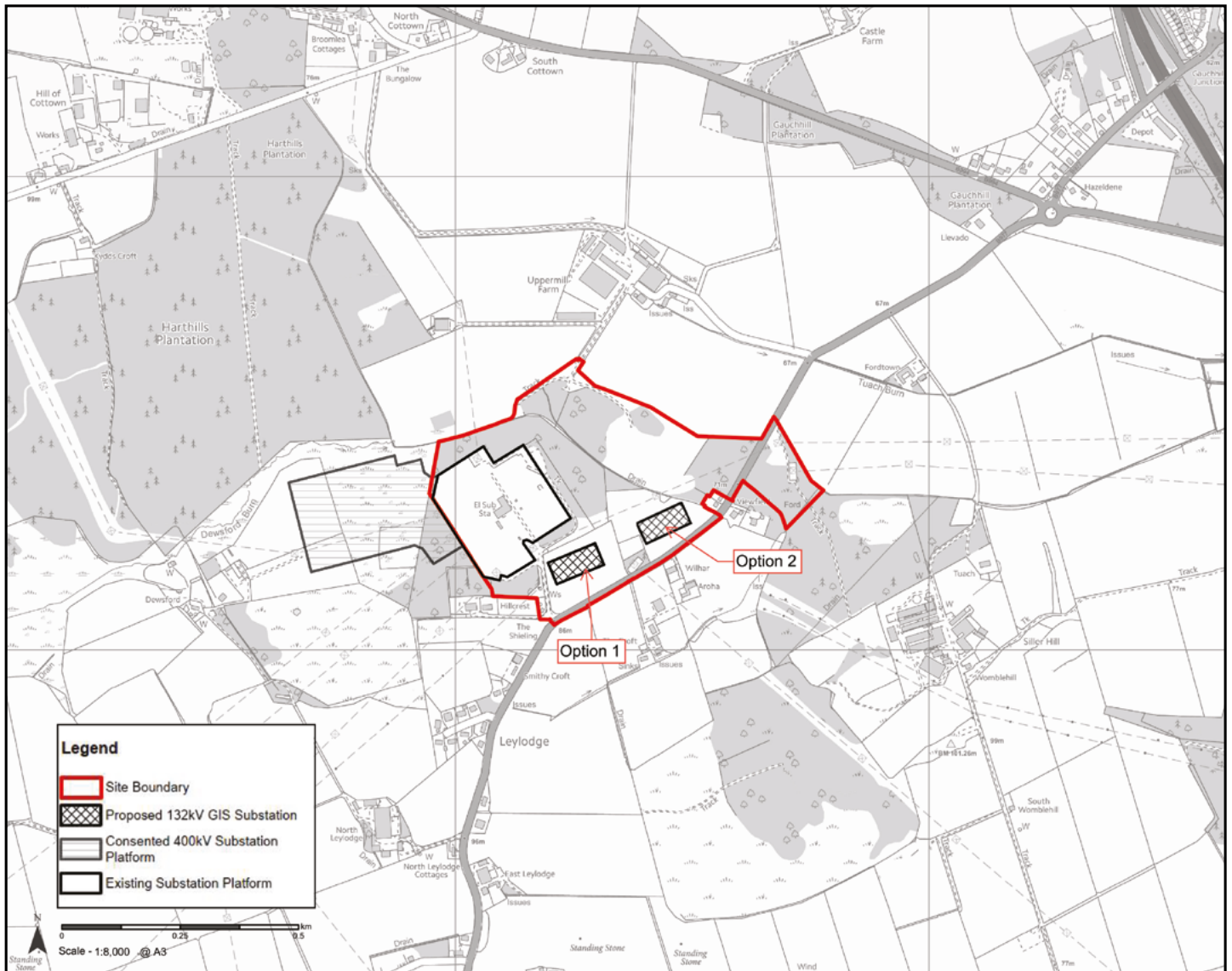
Once feedback has been received and the technical design refined the PoAN red line boundary shown in application ENQ/2021/1029 on Aberdeenshire Council's planning portal will be rationalised and reduced in size, prior to the submission of the planning application.

There will be a requirement to submit a variety of plans as well as environmental reports and assessments as part of any planning application.

Several underground cable connections will be required in order to connect the new substation to the existing substation and the wider electricity network. It is intended to undertake these cabling works under SSEN Transmission's Permitted Development rights.



# Our proposed location



## General consideration

SSEN Transmission require to locate the development adjacent to the existing substation asset for a number of reasons such as; maintaining best value for the GB Consumer, avoiding adjacent environmental constraints, and the location of existing services.

## Preferred Option

SSEN Transmission have selected this as the preferred option taking into account; proximity to the existing site, engineering constraints, the current land use, potential constructibility complications, and the key considerations mentioned on the Key consideration section.

## Alternate Option

SSEN Transmission have modeled this area as a contingency should the preferred option fall through during the refinement of the design.



# Our proposed solution option 1



Existing view from B977 looking east towards the substation



View of Option 1 in the absence of landscaping from B977 looking east towards the substation



Existing view from B977 looking east towards the substation



View of Option 1 in the absence of landscaping from B977 looking west towards the substation

The area of woodland/scrub marked out with the dotted line would be removed as part of the associated cabling works to be undertaken under Permitted Development.



# Our proposed solution option 2



Existing view from B977 looking east towards the substation



View of Option 2 in the absence of landscaping from B977 looking east towards the substation



Existing view from B977 looking east towards the substation



View of Option 2 in the absence of landscaping from B977 looking west towards the substation

# Key considerations

## Landscape and visual

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

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

SSEN have committed to positively contribute to the UN and Scottish Government Biodiversity strategies by achieving an overall 'No Net Loss' on new infrastructure projects gaining consent in 2020 onwards and achieving Biodiversity Net Gain on projects gaining consent in 2025 onwards. Any planting will be designed to take this into account by considering use of native species to screen and enhance the site.

## Noise

A Noise impact assessment is being undertaken to look at the likely impact changes in noise will have on the local area during construction and operation of the proposed substation. This will be a further element that informs the final design of the new station, as well as ensuring appropriate mitigation is incorporated. The replacement of aging equipment within the current substation with new equipment as part of this project should lessen the noise experienced in the local environment.

## 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.

## Technology

The proposed solution is to remove the current 132kV Air Insulated Switchgear (AIS) equipment and replace it with Gas Insulated Switchgear (GIS) housed within a steel-clad building. The Gas Insulated Switchgear proposed for this project would be filled with a "non SF<sub>6</sub>" gas mixture. Which has a significantly reduced carbon footprint than traditional SF<sub>6</sub> filled GIS.

SF<sub>6</sub> (Sulphur Hexafluoride) is used as an electrical insulating material in the GIS and is equivalent to 23,500 times CO<sub>2</sub> by weight. Any leakage of this gas has a significant environmental impact. Using an alternative to SF<sub>6</sub> on this project significantly reduces the potential environmental impact and is part of SSEN Transmission's drive to deliver a Network for Net Zero.

The new transformer in the proposed site, and the replacement transformers within the existing site, will be installed within noise enclosures to reduce the overall noise generated by the substation site.

## Transport, infrastructure and construction methods

Construction of the new 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 new substation will be the Supergrid transformers. We are undertaking investigations along various routes to identify the most feasible Abnormal Indivisible Load (AIL) route.

## Earthworks

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

This would mean material produced onsite would be reused 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.



# Environmental

**Detailed site surveys by specialists including ecologists, hydrologists and landscape architects, are currently underway. The information gained from these surveys will be used to inform the environmental appraisal and subsequently used to identify mitigation that will be submitted as part of the application for consent.**

The methods for these surveys and the detail included in the environmental appraisal will be agreed through ongoing consultation with Aberdeenshire Council and other statutory consultees, such as NatureScot (formerly Scottish Natural Heritage) and Scottish Environmental Protection Agency (SEPA), to ensure a robust assessment of potential environmental impacts.

## Habitats

There are no statutory designated natural heritage sites located within 5km of the site and the closest non statutory site is Cottown Woods Local Nature Conservation Site (LNCS) within 2km. Blocks of long-established (plantation origin) woodland also exist in the area.

The proposed substation is located in a large, enclosed field used for pasture and arable farming. Habitats at the site are otherwise generally composed of grassland surrounded by hedgerows and some woodland blocks.

## Protected Species & Ornithology

Surveys have been carried out to identify any signs of protected species and birds at the site.

There is limited habitat of interest for protected species at the site. Previous bird surveys carried out across the site identified more common species, typically found in farmlands and gardens. SSE have established Species Protection Plans in agreement with NatureScot which will be implemented during the construction phase, supported by pre-construction surveys, designed to ensure any protected species and birds in the area are accounted for and appropriate protective measures put in place such that harm and disturbance are avoided.

## Soils and Hydrology

There are no sites designated for water or geological interest located within 500m of the site.

No private water supplies have been identified at the site, the nearest are around 300m west of the proposed substation.

The proposed site of the substation is not deemed to be at risk of flooding; however, an appropriate site drainage plan for both the construction and operational phases will be developed to ensure no adverse impacts on the water environment. Measures will be included in the site design to ensure the proposed development does not impair surface or groundwater quality.

No peat soil is present at the site and existing topsoil will be safeguarded.

## Landscape and visual amenity

An assessment of potential landscape and visual effects is being conducted, following consultation with statutory consultees. This considers how the proposed development would be experienced within the landscape and seen from properties, routes and other vantage points in the surrounding area. A landscaping plan will be developed to include measures to mitigate potential effects, including the use of planting and earthworks to screen or break up views of the converter station.

The proposed substation would increase the extent of industrial infrastructure within the landscape which is characterised by other such features, including the existing adjacent Kintore substation and the Kintore 400kV substation extension, currently under construction. The proposed development is not considered to directly affect any designated or protected landscapes.

Views of the proposed development would be experienced from nearby receptors in properties, on routes and potentially from local vantage points, and opportunities to mitigate significant effects will be explored through the assessment and landscape design process.

## Cultural heritage

There are no designated cultural heritage sites present within the proposed site. A number are, however, located in the wider area. Most of the records are for medieval or later settlements and agrarian remains, although one of the identified features relates to a prehistoric settlement (a possible hut circle) and there are a number of recorded prehistoric artefact find-spots in the wider area around the Proposed Development site.

## Noise

Noise from electrical infrastructure can cause a degree of disturbance to nearby residences and other sensitive receptors, particularly during the construction phase. A noise management plan would be utilised during construction to control for disturbing noise, including agreement of working hours with Aberdeenshire Council. An assessment of operational noise will also be conducted to determine the likely noise levels at nearby properties and mitigation measures to keep noise to an acceptable level will be agreed with Aberdeenshire Council.



# Notes

# What happens now, 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 need for the project been clearly explained?
- 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 Kintore 132kV Asset Replacement project?
- Overall, how do you feel about the Kintore 132kV Asset Replacement project?
- And finally, from your experience to date, can you rate the quality of consultation undertaken on the Kintore 132kV Asset Replacement project?

Feedback can be submitted online via the project website or via the project Community Liaison Manager:

## Dav Lynch Community Liaison Manager



dav.s.lynch@sse.com



M: 07918404443



200 Dunkeld Road, Perth  
PH1 3AQ



## Additional Information

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

### Project Website:

[www.ssen-transmission.co.uk/projects/kintore-400kv-substation](http://www.ssen-transmission.co.uk/projects/kintore-400kv-substation)

### Find us on Facebook:

SSEN Community

### Follow us on Twitter:

@ssencommunity

## Comments

Your views and comments can be provided to the project team by completing a feedback form or by writing to Dav Lynch, Community Liaison Manager.

**We will be seeking feedback from the members of the public and Statutory Bodies by 22nd November 2021.**

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



## Your Comments

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 project been clearly explained?**

☐

Yes

☐

No

**Q2 Are there any additional factors, or environmental features, that you consider important and should be brought to the attention of the project team?**

☐

Yes

☐

No

**Q3 Do you have any other comments regarding the proposed substation location and layout?**

**Q4 Following review of the provided information, how would you describe your understanding of the Kintore 132kV Asset Replacement project?**

☐

Excellent

☐

Good

☐

Average

☐

Poor



**Q5 Overall, how do you feel about the Kintore 132kV Asset Replacement project?**

**Q6 And finally, from your experience to date, can you rate the quality of consultation undertaken on the Kintore 132kV Asset Replacement project?**

☐ Excellent ☐ Good ☐ Average ☐ Poor

**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:**

Email: [dav.s.lynch@sse.com](mailto:dav.s.lynch@sse.com)

Online: [www.ssen-transmission.co.uk/projects/kintore-400kv-substation](http://www.ssen-transmission.co.uk/projects/kintore-400kv-substation)

Download: Comment forms and all the information from this consultation booklet will also be available to download from the project website.

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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