Introduction

Who we are

Scottish Hydro Electric Transmission Plc (SHE Transmission) is part of the SSE group and owns and maintains the high voltage electricity network that serves 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 SHE Transmission to provide a physical link between the new sources of power and electricity users.

SHE Transmission 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

As we are the only company that owns an electricity transmission network in the north of Scotland we are closely regulated by the energy regulator Ofgem. We are issued with a licence to operate and we must adhere to the terms of the licence. For this reason we operate on a very separate basis to other SSE businesses.

Our licence stipulates that we must develop and maintain an efficient, co-ordinated and economical system of electricity transmission.

Purpose of this public consultation

SHE Transmission are proposing to submit a planning application for our proposed Development of a High Voltage Direct Current Switching Station in Caithness.

As part of a suite of consultations to date, this consultation is intended to inform members of the public of the public of the proposal and allow for feedback and comment on these proposals prior to finalising details for our planning application.

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 wires, underground cables and subsea cables. The transmission network connects large scale generation, primarily renewables, to central and southern Scotland and the rest of Great Britain.

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

Existing infrastructure

Completed

Under construction

Potential development

Advanced planning

Scottish Hydro Electric Power Distribution Plc (SHEPD)
Scottish Hydro Electric (SHE) Transmission is required to develop proposals for a new electrical connection which will link Shetland to the Scottish mainland for the first time. Viking Wind Farm, located on Shetland, has contracted with National Grid plc to connect to the transmission network by 2021. As Shetland is not currently connected to the National Grid, construction of a new subsea cable is required. SHE Transmission has proposed that a High Voltage Direct Current (HVDC) marine cable will run from Weisdale Voe in Shetland to Noss Head in Caithness. The Shetland HVDC circuit would be used primarily to transport large volumes of energy to Caithness and onwards to the Blackhillock Substation in Moray, it could also be used to improve electrical resilience for Shetland. The Blackhillock Substation, near Keith, has a HVDC Converter Station which can change energy from DC to AC for onward transmission via the existing transmission network.

A key element of the project requires the development and construction of a HVDC Switching Station which would connect the Shetland HVDC cable with a HVDC cable presently being constructed between Caithness and Moray. The Switching Station requires to be located close to the HVDC marine cable landfall site, at Noss Head. Given the coastal environment, all the switching station equipment will require to be housed in a building. All connections to the building will be via underground cable, no new overhead lines are required as part of this development.

The Switching Station will become a strategic point in the HVDC network and will allow the flow of power to be switched between different cables, or circuits. The proposed Switching Station at Noss Head will connect three HVDC circuits including: one underground HVDC circuit connecting to Spittal in Caithness, one mainly subsea circuit connecting to Shetland and one mainly subsea circuit connecting to Moray. The project team have also designed space for any future HVDC connections.
The development process

Search to identify multiple potential sites and carry out preliminary assessments

First Pre-Application Consultation
Carry out consultation with the statutory authorities and public on the multiple sites

Consider the feedback from consultation and identify a preferred site

Second Pre-Application Consultation
Carry out consultation with the statutory authorities and public on the outline design

Develop an outline design for the preferred site, including landscaping proposals

Final Pre-Application Consultation
Carry out final pre-application consultation with the statutory authorities and public on the detailed design and environmental assessments

Submit Proposal of Application Notice to the Highland Council

Consider feedback from consultation and continue to develop the design

 Carry out detailed environmental surveys and assessments to inform planning application

Summer 2016

Consider any final feedback on detailed proposals

Submit planning application to the Highland Council

Autumn 2016

October 2016

Submit Need Case and Project Assessment to Ofgem for approval

Statutory Consultation
Highland Council will carry out a statutory consultation following submission during which representations can be made directly to the planning authority

2017

Determination of planning application

Construction phase will be approximately two years

Subject to consents, pre-construction works begin on site

Completion of Switching Station Construction

The chart below shows the main stages of the development process and the opportunities there will be for local people and others to give feedback as site selection, design and environmental work progresses. All dates are indicative at this early stage.
The Site

Preferred construction access (to be determined in consultation with The Highland Council)

Site boundary for planning purposes

Site area once works complete

Site selection

The project development team have selected the preferred site following review of economic, technical and environmental factors, whilst considering the views of members of the public.

All factors were considered in balance throughout the site selection process to arrive at a short-list of four sites in late 2015.

Following these studies, and taking into account feedback received during the public consultations in September 2015 and March 2016, the site as shown above was selected.

In addition, the project team acknowledge that access for construction traffic through the communities of Broadhaven, Papigoe and Staxigoe is possible although not preferred. In light of this, the project development team are investigating alternatives to route construction traffic via Ackergill and along a newly constructed access route.
SHE Transmission’s preferred site is close to the low point on the minor road between the airport and Noss Farm.

It is a landscape of open, gently rolling fields. The building will be partly dug into the slope and the land around mounded up gently to provide a degree of screening, particularly from the minor road to Noss Head.

Given the open nature of the landscape, the building will be quite widely visible – a noticeable addition to the landscape but it will be aligned with the existing field pattern and located away from the scenic coastal views.

The site consists of two arable fields and is used as part of the farm’s rotation programme. However, due to intensive agricultural management, the site is of relatively low ecological interest.

There would be some disturbance to local recreational use of the minor road between Staxigoe and Noss Head during construction.

---

### Key Considerations

#### Advantages
- Relatively low in the landscape, the site would be prominent locally but not particularly intrusive in the wider landscape
- Limited effects on cultural heritage interests
- Little effect on local ecology or wildlife, and the opportunity for some biodiversity improvement
- No specific engineering or technical constraints at the site
- The site is close to the HVDC cable landfall site

#### Disadvantages
- Loss of about ten hectares of agricultural land
- Disruption to minor road during construction
- Relatively widely visible
**Design**

**Building design:** The building will be approximately 21m high at its highest point, 150m long and 50m wide (70’ x 500’ x 165’).

We have prepared the indicative design shown here for our planning application in principle. The final design will be agreed at a detailed planning stage as part of the formal planning process but we seek comment on the design and the colour options prior to our planning submission.

**Site design:** The building will be dug into the slope – between about 3m on the low side and 8m on the high side – and landscape mounds between 3m and 6m high formed around it. This will reduce the apparent height of the building and partially screen it, particularly in views from the road to Noss Head.

Clumps of native trees and scrub will be planted around the building and the grass areas will be seeded as wildflower meadows. In the long term the trees and scrub should provide more screening similar to the trees around Noss Farm. The planting will also provide additional cover for wildlife and the wildflower seeding will increase local biodiversity.
**Viewpoints**

**Visualisations:** The next three boards show the proposed building viewed from the viewpoints shown on the map above. They show the development on completion with the proposed landscape mounding but before any scrub and trees have grown enough to be noticeable.
Visualisations

Viewpoint 1, view from the A99 just north of Thrumster (Colour option A used for demonstration purposes)

Viewpoint 2, view from the A99 southeast of Reiss (Colour option A used for demonstration purposes)
Visualisations

Viewpoint 3, Ackergill (Colour option A used for demonstration purposes)

Viewpoint 4, Staxigoe War Memorial (Colour option A used for demonstration purposes)
Visualisations

Viewpoint 5, from the corner of the minor road to Noss Head (Colour option A used for demonstration purposes)

Viewpoint 6, from the end of the track to Noss Farm (Colour option A used for demonstration purposes)
This board presents the preferred building design with three colour options for your consideration and comment. This viewpoint is 4 – Staxigoe War Memorial. We would appreciate you providing your preference by completing a comments form.
Building Colour Options

Option A: Detailed grey, light roof

Option B: Shades of green, dark roof

Option C: Shades of grey, light roof

This board presents the preferred building design with three colour options for your consideration and comment. This viewpoint is 5 – from the corner of minor road to Noss Head. We would appreciate you providing your preference by completing a comments form.
Building Colour Options

This board presents the preferred building design with three colour options for your consideration and comment. This viewpoint is 6 – from end of track to Noss Farm. We would appreciate you providing your preference by completing a comments form.

Option A: Detailed grey, light roof

Option B: Shades of green, dark roof

Option C: Shades of grey, light roof
What happens next and how do I have my say?

Thank you for taking the time to find out about our proposals for the Caithness HVDC Switching Station.

We appreciate all feedback and thank you for taking the time to provide your comments. You can complete a feedback form today, or you can post it back to us at the address provided. Information can also be provided by our Community Liaison Manager upon request.

Feedback submitted to SHE Transmission as part of the pre-application consultation process will be used to inform our submission to the Highland Council as the relevant Planning Authority. Any feedback received at this stage will be presented in a Pre Application Consultation Report submitted with our planning application. You will also have the opportunity to make formal representation to our planning application once it is submitted. That consultation will be carried out by The Highland Planning Authority. The application will be available to view at the relevant Council Offices and also online through The Highland Councils online planning webpages.

Comments can be submitted as follows:

At the exhibition today
Complete a Comment Form and give it to a member of the team.

By post
Complete a Comments Form and post it to our Liaison Manager (details opposite).

By email
Complete a Comments Form and email it to our Liaison Manager (details opposite).

Information can also be posted out to you by our Liaison Manager upon request.

Please provide any comments to us by 9 September 2016.

Get in touch with our Community Liaison Manager:

Neil Anderson
Email: neil.anderson@sse.com
Phone: 07500 912 506
Write: Neil Anderson
SHE Transmission
Inveralmond House
200 Dunkeld Road
Perth, PH1 3AQ

The project is in the advanced development stage and we openly welcome comments and feedback to help us refine our proposal. We are very keen to ensure that members of the community understand our proposal as it will be taken forward to a planning application made to The Highland Council.

Can you please tell us your preferred colour option as detailed in the three information boards titled ‘Building Options’? Please indicate your preference by ticking a box, below.

Option A: Detailed grey, light roof
Option B: Shades of green, dark roof
Option C: Shades of grey, light roof

Do you have any additional comments in regards to the colour options?

Comments

Thank you for taking the time to attend this Pre Application Consultation.

In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in BLOCK CAPITALS

Name
Address
Telephone
Email

Do you understand the need for the project?

Yes
No

Has the consultation information been clear and easy to understand?

Yes
No

Comments

Comments

Do you have any comments on our preferred proposals for the Caithness HVDC Switching station design?

Comments

Comments

Thank you for taking the time to attend this Pre Application Consultation.

In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in BLOCK CAPITALS

Name
Address
Telephone
Email

Do you understand the need for the project?

Yes
No

Has the consultation information been clear and easy to understand?

Yes
No

Comments

Comments

Do you have any comments on our preferred proposals for the Caithness HVDC Switching station design?

Comments

Comments

Thank you for taking the time to attend this Pre Application Consultation.

In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

Please complete in BLOCK CAPITALS

Name
Address
Telephone
Email

Do you understand the need for the project?

Yes
No

Has the consultation information been clear and easy to understand?

Yes
No

Comments

Comments

Do you have any comments on our preferred proposals for the Caithness HVDC Switching station design?

Comments

Comments