

Eastern HVDC Link

Pre-application consultation

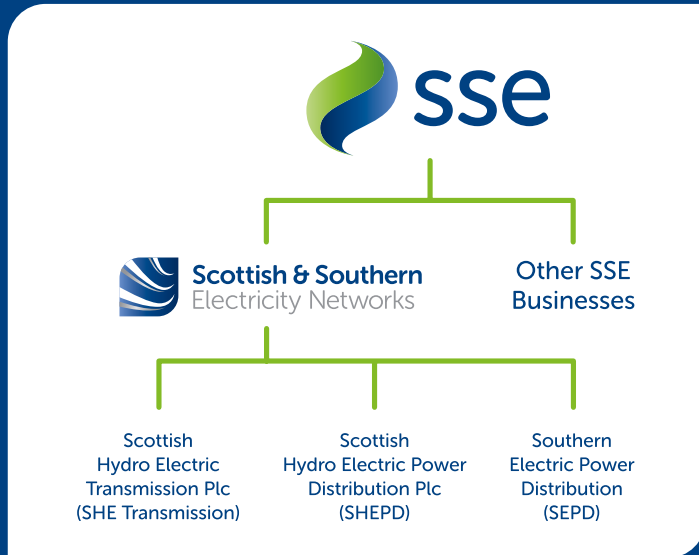


Scottish & Southern
Electricity Networks

TRANSMISSION

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 plants.

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.

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.

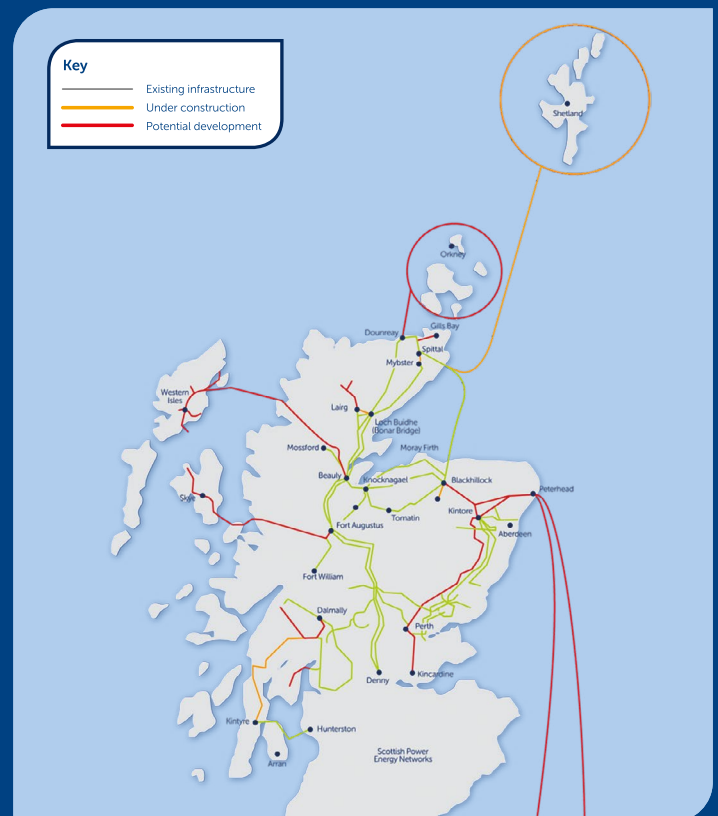
The landscape and environment that contribute to the challenges we face also give the area a rich resource for renewable energy generation. There is a high demand to connect from new wind, hydro and marine generators which rely on Scottish and Southern Electricity Networks to provide a physical link 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.

Overview of Transmission Projects



Project need

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).

As part of the NOA process, reinforcement proposals have been submitted to National Grid ESO proposing upgrades to the Scottish Hydro Electric Transmission (SHE-Transmission) network on the east coast of Scotland, this is initially through 275kV and 400kV upgrades to the existing onshore overhead line (OHL) network, supplemented by new substations where required.

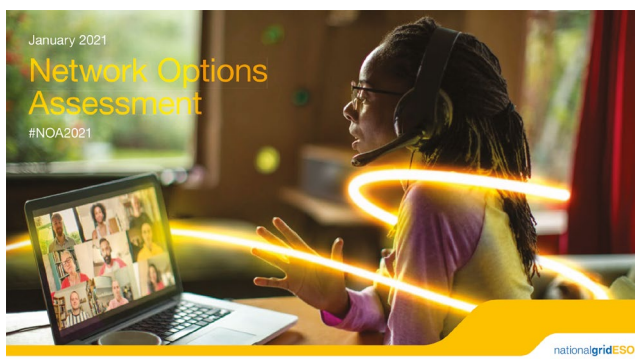
However, these upgrades are not enough to accommodate all incoming generation currently being forecast.

Therefore, an option for a subsea High Voltage Direct Current (HVDC) link from Peterhead into National Grid's transmission ownership area, allowing the electricity to bypass multiple transmission boundaries and alleviate congestion in the north east, has been proposed in addition to the onshore options.

The Eastern HVDC Link was first conceived in 2011 and at this time an extensive site selection study was undertaken; including consultation with statutory consultees, interested bodies and the public to identify a site for a converter station which is required as part of this overall project.

At this time a preferred site was selected in Peterhead, which is the same site identified as part of these proposed works, however following preparation of a detailed design and completion of a draft Environmental Assessment to support a planning application, the project was put on hold before a planning application was submitted, due to changes in network capacity requirements.

Following the current forecasted increase in source of renewable generation, the Eastern HVDC Link Project has been subject to "Proceed" signals from the Network Options Assessment in the 2018, 2019 and 2020 reports.



Project drivers

The current 'Proceed' signal in the 2018 to 2021 NOA Reports is due to a vast increase in connections of renewable sources of energy across the north east and east coast of Scotland; there is now a requirement to upgrade the transmission network to cope with this.

More specifically, the requirement for these projects has been driven by Moray East Offshore Windfarm, Moray West Offshore Windfarm and the North Connect HVDC Interconnector, with the first connection due in 2021.

There is also the need to accommodate an increase in generation capacity at Peterhead Power Station, along with incoming connections from the Caithness - Moray HVDC Link as well as accommodating the current generators already connected to the transmission network. Once completed, these reinforcements will allow for the safe, economic and efficient transfer of power to areas of demand further south, as well as strengthening the local transmission network.

Project partners

This project will be managed by three separate Transmission Operator (TO) across Great Britain. SHE-Transmission as the TO for northern Scotland, Scottish Power Transmission plc (SPT) as the TO for the central belt and south of Scotland, and National Grid Electricity Transmission plc ('National Grid') as the TO for England and Wales, are working together to develop the project.

There are currently proposals for two Eastern HVDC Links, the responsibility of these projects is separated between SHE-Transmission, SPT and National Grid.

The link between Peterhead and Selby will be jointly developed by SHE-Transmission and National Grid and this is the link that we will focus on within this brochure. The second Eastern HVDC Link will run from Torness to Hawthorn Pit and will be jointly developed by SPT and National Grid, should you have any questions regarding this project then please do get in touch and we can put you in contact with the relevant colleague from SPT or National Grid.



SP TRANSMISSION

nationalgrid

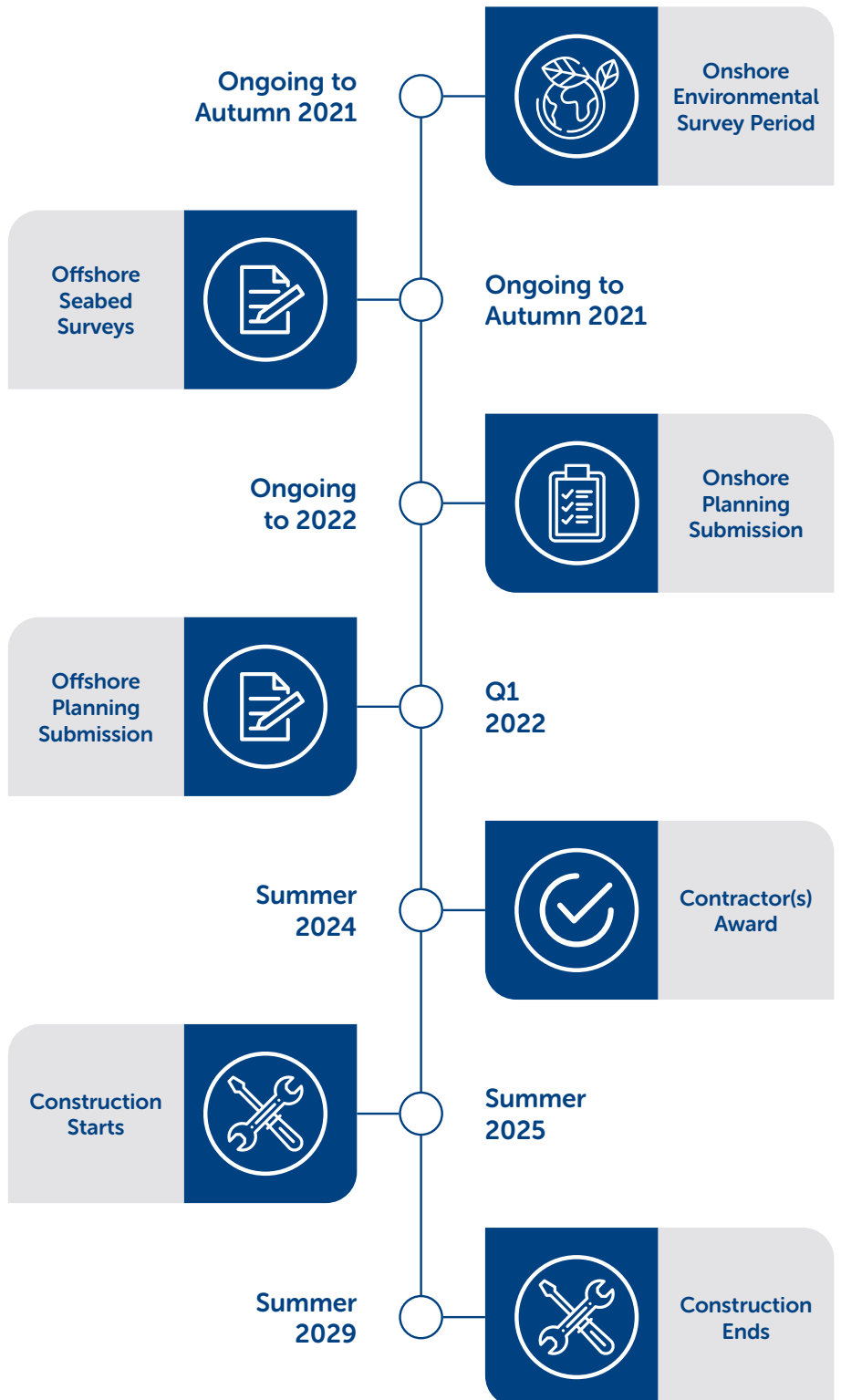
Project overview



The link between Peterhead in Aberdeenshire and Selby in North Yorkshire is needed for 2029 and will comprise:

- Approximately 440km of subsea cable between landfall sites in Aberdeenshire and East Riding of Yorkshire.
- Approximately 2km of onshore underground DC cable from the landfall near Peterhead to a new converter station nearby.
- New converter station at Boddam, Peterhead.
- Approximately 1km of underground AC cables between the new converter station and Peterhead 400kV substation.
- Enabling works at the Peterhead 400kV substation (currently under construction).

Project timeline



* Distances are approximate and will be refined as the detail of the proposed works is refined.

Project overview

Planning application

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

A proposal of application notice (PAN) was submitted to Aberdeenshire Council on the 13th of May 2021 allowing for at least 12 weeks of pre-application consultation.

This public event forms part of the pre-application consultation and feedback received will be included in the Proposal of Application Consultation report which form an important part of the forthcoming planning application.

We are aiming to submit the planning application to Aberdeenshire Council within the first quarter of 2022. The PAN red line boundary shown on the literature will be rationalised and reduced in size prior to the submission of any 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.

There may be a requirement to make improvements to the road network, to facilitate construction traffic and abnormal load movements (i.e. transformer delivery) which will require agreement with Aberdeenshire Planning and Roads departments in advance of works commencing on site.

We are intending to submit our onshore planning application no later than the end of February 2022.

In addition to the proposed converter station, there are changes required to the overhead lines (OHL) and towers. These changes will be dealt with via a separate application under Section 37 of the Electricity Act 1989 which will be submitted to the Scottish Government’s Energy Consent Unit around the same time as the planning application.

It is worth noting that there will be a requirement to connect the converter station with the subsea cable at the landfall point. This part of the project will be installed using our Permitted Development Rights and as such no planning application will be submitted.

A planning application will be submitted to Marine Scotland and the MMO for the subsea cable. A separate public consultation will be undertaken by SSEN and National Grid to provide further details of the proposed offshore works.

Our proposed solution

Several converter station sites were initially identified, based on proximity to the existing electricity infrastructure, access requirements, and potential environmental constraints. The same converter station design and required size of site was used to allow a comparative assessment of the sites to be undertaken.

In October 2020 we presented our preferred site and asked for feedback on the two layouts within the site. This site was previously selected for development of the converter station when looked at in 2011/2012 and our follow up review of this process and additional site selection surveys, it was still deemed the preferable location.

We received valuable feedback from the responses to our consultation and since October we have adopted the following changes:

- We understand the concerns raised with the ‘East’ layout option being too close to the A90 road and we have developed the ‘West’ option which is further away.

We have now taken the changes into the design and the following scope of work is being consulted upon.

Converter station

The converter station will comprise of the following key components:

- Converter valves and controls
- Converter Building
- Converter Transformers
- Transformer Cooling
- DC smooth reactors
- Valve cooling banks
- AC Filters
- Associated electrical infrastructure
- Permanent access track.

A level platform shall be created to accommodate the electrical plant, structures, internal access and drainage to support operational requirements. As a result, it is anticipated that the construction of the platform will require considerable earthworks to achieve a cut and fill balance of material.

The main buildings within the construction compound will contain all main HV equipment. Secondary plants such as the valve cooling plant and control cabinet will be located in rooms equipped with climate control technology within the main buildings. The buildings are proposed to be steel portal frame with external cladding and will be of a maximum height of 30m.

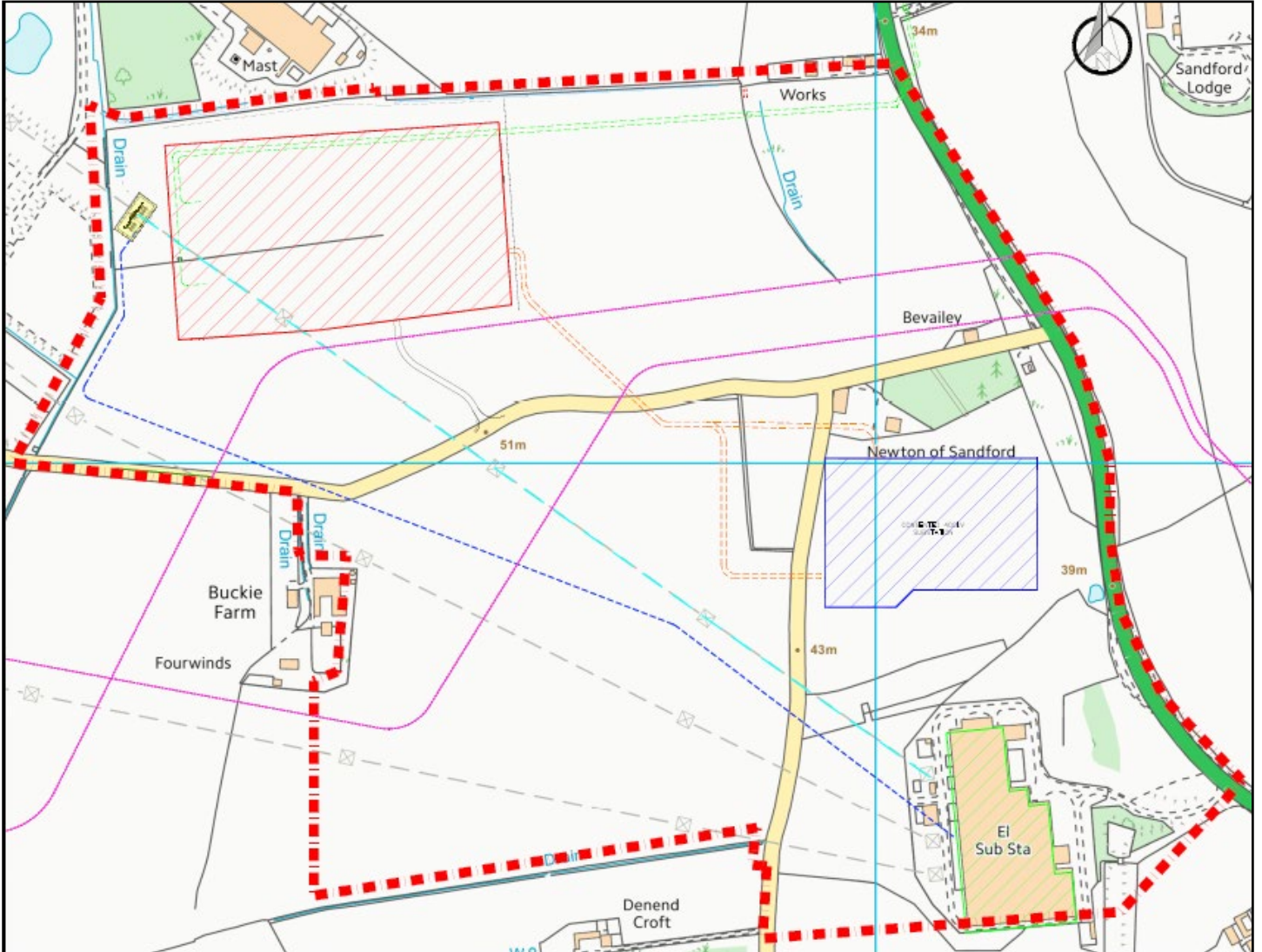
To facilitate the converter station, the project will require one of the existing overhead line towers to be undergrounded and a new sealing end platform installed. The overhead line works, including diversions shall be applied for under Section 37 of the Electricity Act (1989).

Underground cable connection works

The associated cable connection works for the Peterhead converter station will comprise the following:

- Approximately 440km of subsea cable between landfall sites in Aberdeenshire and East Riding of Yorkshire.
- Approximately 2km of onshore underground DC cable from the landfall near Peterhead to a new converter station nearby.
- Approximately 1km of underground AC cables between the new converter station and Peterhead substation.

Our proposed location



Key considerations

Landscape and visual

A landscape and visual impact appraisal (LVIA) is currently being undertaken. The LVIA will be one element that informs the final converter station 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 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.

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.

Transport, infrastructure and construction methods

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

Earthworks

Building the converter station platform will require significant 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 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.



This view includes the consented Peterhead 400kV Substation and associated infrastructure. Although not shown, this view would also include landscape mitigation for the 400kV substation and fewer overhead lines. Landscape mitigation for the proposed development would also be introduced.

Environmental

Detailed site surveys by specialists including ecologists, hydrologists and landscape architects, are currently underway and the information gained from these will be used to inform the environmental appraisal and subsequent identified 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), to ensure a robust assessment of potential environmental impacts.

Habitats

There are no designated natural heritage sites located either within or close to the site. The converter station is located in a large, enclosed field used as pasture. Habitats at the site are otherwise generally composed of grassland.

Protected species

Surveys are being carried out currently to identify any signs of protected species at the site. There is limited habitat of interest for protected species at the site. However, we 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 in the area are accounted for and appropriate protective measures put in place such that harm and disturbance are avoided.

Ornithology

Previous bird surveys carried out across the site identified species typically found in farmlands and gardens, such as skylark and meadow pipit, along with several species of conservation importance, including yellowhammer and reed bunting.

Herring gull, a species characteristic of the Buchan Ness to Collieston Coast Special Protection Area (located approximately a kilometre north-east of the converter station), were also recorded near the site and likely breeding on nearby buildings. Bird surveys carried out recently for the proposed development identified a similar group of species across the site. The Species Protection Plans noted as part of Protected Species above would also be implemented to protect bird species across the site.

Soils and hydrology

There are no sites designated for water or geological interest located either within or close to the site. No private water supplies have been identified at the site, the nearest is some 400m west of the converter station, although previous studies identified the associated property to be fed by mains water supply.

The proposed site of the converter station 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 converter station would increase the extent of industrial infrastructure within the landscape which is characterised by other such features, including the nearby Peterhead Power Station and Peterhead substation. 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 site. A number are however located in the wider area, including Den of Boddam Scheduled Monument, Buchanness Lighthouse, and Boddam Castle to the south and south-east. Most of the designated sites in the wider area are grouped around Peterhead harbour or along the shoreline in Boddam, within their respective conservation areas. Buildings and vegetation between these locations and the converter station site will screen views from most sites. Previous surveys across the site identified a small number of minor features of interest, such as two historic wells, at the north-west boundary, and the site of a former Royal Observer Corps post, next to the roadside along the southern boundary. There are no longer any surface traces of these features, but it is possible that some buried remains may survive. An archaeologist will monitor construction works, as required, to identify and record any new features discovered.

Noise

Noise from electrical infrastructure can cause a degree of noise 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 noise disturbance, 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 design mitigation measures to keep noise below an acceptable level as 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 requirement for the project been clearly explained?
- Have we explained the approach taken to select the proposed site adequately?
- 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 converter station location and layout?
- Following review of the provided information, how would you describe your understanding of the Eastern HVDC project?
- Overall, how do you feel about the Eastern HVDC project?
- And finally, from your experience to date, can you rate the quality of consultation undertaken on the Eastern HVDC 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/eastern-hvdc-link

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 24th September 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 Have we explained the approach taken to select the proposed site adequately?

Yes No

Q3 Are there any additional factors, or environmental features, that you consider important and should be brought to the attention of the project team?

Q4 Do you have any other comments regarding the proposed converter station location and layout?

Q5 Following review of the provided information, how would you describe your understanding of the Eastern HVDC project?

Excellent Good Average Poor



Q6 Overall, how do you feel about the Eastern HVDC project?

Q7 And finally, from your experience to date, can you rate the quality of consultation undertaken on the Eastern HVDC 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

Online: www.ssen-transmission.co.uk/projects/eastern-hvdc-link

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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