Scottish & Southern Electricity Networks

TRANSMISSION

Shetland AC Connections: Kergord 2 Substation

Site Selection Consultation

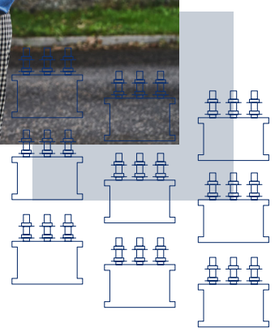
October 2025

ssen-transmission.co.uk/northern-shetland-kergord

Contents

The consultation event will be taking place on:

6 October 2025, 3–7pm
Voe Public Hall, Isles Road, Voe, ZE2 9PT



Shetland AC Connections: Kergord 2 Substation

Powering change together

The time has come to further enhance Scotland's energy infrastructure, providing power for future generations as we move towards net zero.

The shift to a cleaner, more sustainable future is about more than climate change. It's about ensuring future generations have the same opportunities to thrive as we have all had.

Countries around the world are investing in their energy infrastructure to support the demands of modern economies and meet net zero targets. The UK is leading the way in building a modern, sustainable energy system for the future.

We all have a part to play

When it comes to net zero, we have to be in it together. The UK and Scottish governments have ambitious net zero targets, and we're playing our part in meeting them.

We work closely with the National Energy System Operator (NESO) to connect vast renewable energy resources—harnessed by solar, wind, hydro and marine generation—to areas of demand across the country. Scotland is playing a big role in meeting this demand, exporting two thirds of power generated in our network.

But there's more to be done. By 2050, the north of Scotland is predicted to contribute over 50GW of low carbon energy to help deliver net zero. Today, our region has around 9GW of renewable generation connected to the network.

At SSEN Transmission, it is our role to build the energy system of the future.

We're investing £20 billion into our region's energy infrastructure this decade, powering more than ten million UK homes and 20,000 jobs, 9,000 of which will be here in Scotland.

Who we are

We're responsible for maintaining and investing in the electricity transmission network in the north of Scotland. We're part of SSE plc, one of the world's leading energy companies with a rich heritage in Scotland that dates back more than 80 years. We are also closely regulated by the GB energy regulator Ofgem, who determines how much revenue we are allowed to earn for constructing, maintaining, and renovating our transmission network.

What we do

We manage the electricity network across our region which covers a quarter of the UK's landmass, crossing some of the country's most challenging terrain. We connect renewable energy sources to our network in the north of Scotland and then transport it to where it needs to be. From underground cables, subsea cables and overhead lines to electricity substations, our network keeps your lights on all year round.

Working with you

We understand that the work we do can have an impact on our host communities. So, we're committed to minimising our impacts and maximising all the benefits that our developments can bring to your area. We're regularly assessed by global sustainability consultancy AccountAbility for how we engage with communities. That means we provide all the information you need to know about our plans and how they will impact communities like yours. We want to hear people's views, concerns, or ideas and harness local knowledge so that our work benefits their communities, today and long into the future. You can share your views with us at: **ssen-transmission.co.uk/talk-to-us/contact-us**

The story so far

The Shetland Islands have a vital role to play in the UK's clean energy future. This has been formally recognised through independent national planning. In March 2024, the National Energy System Operator's (NESO) Beyond 2030 report confirmed that additional transmission infrastructure is needed, both on Shetland and to the Scottish mainland to connect future renewable generation and to support security of electricity supply across Great Britain.

This assessment forms the basis of the Shetland Strategy – NESO and Ofgem have tasked us with providing coordinated response to a confirmed need.

From National Plan to Local Action

NESO's findings were based on a comprehensive assessment of how the electricity network must evolve to:

- Meet net zero targets;
- Manage increasing demand;
- Support economic growth and
- Maintain resilience

Shetland was identified as a strategically important location, not because of any one single project, but due to its long-term potential and critical role in the future energy network.

In December 2024, Ofgem, the GB energy regulator, endorsed this position by approving funding for early-stage development works in Shetland. This sits alongside Ofgem's assessment of NESO's broader Clean Power 2030 (CP2030) recommendations, with a final determination expected in December 2025.

Why this matters

The Shetland Strategy proposes a technologically robust solution, that is coordinated across the region and is shaped by local engagement and insight. The strategy serves Shetland's known energy needs as well as provision of headroom for future growth. We have looked to minimise the amount of infrastructure to reduce the impact on communities and the environment.

You can read the NESO Beyond 2030 report here

The Shetland Strategy

We are leading some exciting projects to power change in the UK.

The Shetland Islands can play a major part in helping Great Britain achieve net zero targets.

There are a number of generation projects (e.g. offshore wind farms) and demand projects (e.g. hydrogen production) in the development pipeline, each project at a slightly different stage, that requires to connect to the electricity transmission network in Shetland. Rather than look at each project on an individual basis, we have taken a whole-system approach and developed a strategic design that should accommodate both near-term and long-term network needs.

This strategic approach enables SSEN Transmission to identify the most efficient design for Shetland. We submitted these strategic plans to Ofgem, the electricity industry regulator, as part of our CP2030 submission in early 2025.

March 2024

NESO publishes tCSNP2 (Beyond 2030) confirming Shetland requirement

December 2024

Ofgem funds early-stage development

July 2025

Ofgem publishes CP2030 minded to position.

December 2025

Ofgem CP2030 determination expected.

Shetland Strategy

ssen-transmission.co.uk/shetlandstrategy

Shetland projects overview

1 Yell wind farm connections
Connects the wind farm projects to Yell Substation.

2 Yell Substation
A substation to connect the two wind farm projects, and also offers opportunity for further expansion and resilience to the Distribution supply on the island.

3 Yell Marine link
A subsea cable, with associated onshore circuit to connect Northern Substation Hub to Yell Substation.

4 Northern Substation Hub
A 2GW HVDC converter station which connects to a 2nd subsea link to mainland Scotland. This will also be the site of substations which allow the island of Yell and the Scotwind and Greener Grid projects to connect to the Transmission Network. This site will also have capacity to support future unconfirmed projects like electrification of oil and gas platforms.

5 HVDC subsea link
A subsea cable connecting the new converter site at the Northern Substation Hub on Shetland with a new converter site on the Scottish mainland.

6 Connection from Northern Hub to existing Kergord
Circuits running between Kergord, Kergord 2 and the Northern Substation Hub.

7 Kergord 2 substation
A substation which changes the network voltage from 132kV to 220kV. A higher voltage means less circuits north of this point, minimising our impact on communities and the environment.

8 Existing infrastucture
The Kergord site is home to our existing HVDC converter station, connecting Shetland to mainland Scotland for the first time through a subsea transmission link. It is also where the Viking wind farm connects. Under construction currently is a transmission link to Gremista, where it will connect into the Distribution network.

Third party developer projects

Our Shetland Strategy takes into consideration the following projects:

A **Energy Isles** Onshore wind being developed by Statkraft.

B **Beaw Field** Onshore wind being developed by Statkraft.

C **Greener Grid** Hydrogen electrolyser being developed by Statkraft.

D **Arven** Offshore wind being developed by Ocean Winds.

E **Stoura** Offshore wind being developed by ESB.

F **Mossy Hill** Onshore wind being developed by Statkraft.

G **Existing infrastructure** Viking Wind Farm constructed by SSE Renewables.

Key

- # Proposed SSENT Substation/ Converter station site
- # Proposed SSENT circuits
- Offshore wind export cables (Third party developer build)
- A Third party developer projects
- Installed SSENT assets

For updates on the projects, visit our Shetland Strategy page:
ssen-transmission.co.uk/shetlandstrategy

About the project

Today's consultation is focused on the proposed Kergord 2 Substation

The Kergord 2 substation is required to transform the voltage from the existing Kergord Substation at 132kV to a higher voltage of 220kV. The reason for the voltage transformation is to minimise the number of circuits and associated structures required on Shetland, aiming to limit visual and environmental impacts. This higher voltage will provide sufficient capacity for current and future connection customers.

The Kergord 2 substation forms part of the wider Shetland Strategy projects which will help support Shetland's on island network by interconnecting the two Shetland HVDC systems together, providing a solution to meet the long-term energy resource potential and improve security of supply on Shetland, and aligns with Government Clean power 2030 ambitions to accelerate clean power connections.

This substation could also offer additional connection optionality for some of the ScotWind offshore wind projects proposed to connect into the Shetland Mainland.

What is a substation?

Substations connect sources of generation, such as wind farms and power stations. They connect overhead and underground circuits and can connect nearby utility systems. Substations manage electricity flows within the network, which can include connection and disconnection of circuits to direct the flow, transform voltages to higher or lower ratings (step-up or step-down—for example 132kV stepping-up to 220kV), manage the frequency of the electricity and increase efficiency and reliability of the power supply.

Substations are critical in maintaining an efficient and healthy energy network, as they monitor and report back to operators on statistics and events to provide live information on our network. This allows for the following functions:

- Fault monitoring and identification which allows for isolation to protect the network and allow repairs.
- Allow for redirection and disconnection of energy to allow for demand/maintenance.
- Provide data such as voltage, current and power flow to allow for efficient running and future predictions.

The substation is proposed to use indoor gas insulated switchgear technology, which is required to protect the equipment from harsh weather conditions and the saline coastal environment. This is different to many onshore areas of the GB system where air insulated switchgear (AIS) would be suitable. Therefore, another key factor influencing our decision to adopt the 220kV strategy on Shetland is the ongoing development of Sulphur Hexafluoride-free (SF_6-free) switchgear for 220kV. This will reduce the environmental impact of our development.

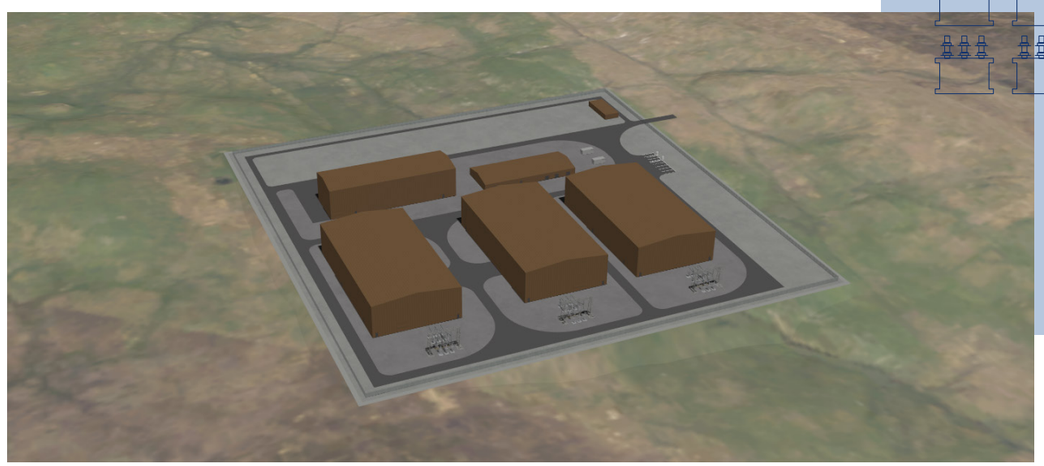
Initial designs suggest that the substation will be required to have a switchgear building, approximately 64 metres in length, 21 metres in width and 15 metres in height. Also required will be 3 separate super grid transformer buildings, each approximately 74 metres in length 40 metres in width and 15 metres in height.

Shetland AC Connections: Kergord 2 Substation

3D Visualisations

We understand that local stakeholders need to be able to visualise what the development may look like in their local landscape. We've provided 3D visualisations which model an approximate layout for the site to help understanding of our proposals in terms of the visual impact, scale and height of the proposed Kergord 2 Substation.

Kergord 2 substation - Angle 1



Kergord 2 substation - Angle 2

Help shape our plans

At SSEN Transmission, we are committed to delivering a robust and transparent consultation process underpinned by inclusion and accessibility. As a stakeholder led business, we understand the importance of involving communities and key stakeholders throughout each stage of our development process.

This period of engagement in the development phase is vital in shaping our proposals and to do this effectively, we need to capture feedback from stakeholders, seek local knowledge to identify risks in key areas of the site and explore potential community benefit opportunities.

Today we are presenting our approach to developing this project, including technology options, environmental considerations, the site selection process and presenting maps which aim to give stakeholders and community members a better visual representation of the work on the project to date.

If you require additional support to submit your views, please contact our Community Liaison Team on ShetlandEngagement@sse.com who will happily assist you.

What we are consulting on today

Early analysis, including desktop surveys and initial site walkovers, has enabled us to identify a proposed least constrained substation site within our study area. Today, we are sharing our approach to developing this project, and the rationale behind our early proposals. We are keen to hear stakeholder views regarding our proposed least constrained site, and if there are further considerations you believe need to be taken into account during the next stage of the development process.

Who we are consulting with

We are keen to hear feedback from a broad range of stakeholders including but not limited to local residents, landowners, businesses, non-statutory consultees and statutory consultees such as local authorities, Nature Scot, SEPA and Historic Environment Scotland. We would encourage all those with an interest to submit their views through this consultation by submitting a feedback form.

Shetland AC Connections: Kergord 2 Substation

Substation site selection process

Our site selection process ensures that the design, consenting, construction and operation of our projects are undertaken in a manner, which on balance, causes the least disturbance to the local community and environment, while ensuring the solution taken forward is economically and technically practical.

To do this we follow an internal process supported by specialist environmental consultants. This process considers technical, environmental and cost aspects to find a balanced outcome, and also involves consulting with stakeholders and the local community.

The key stages summarised above, have been undertaken for this project as follows:

Stage 1: Initial site screening

The site screening stage seeks to identify technically feasible, economically viable and environmentally acceptable site options within a defined area.

An initial screening exercise was carried out to identify sites for the Kergord 2 Substation with the initial preliminary search area covering central Mainland Shetland. Within this search area, a longlist of 7 substation site options were identified via a multi-criteria analysis process, which used geographical information systems (GIS) to analyse available digital datasets for environmental and technical constraints.

This longlist was further refined by analysing site suitability against the following requirements:

- Areas of land with no identified environmental constraints, with sufficient space to accommodate the electrical design including any future requirements, landscaping and construction compound.
- Site locations which balance the length of each connecting circuit.
- Sites which accommodate future circuit connections.
- Sites near the public road network.
- Sites with feasible transportation and access routes for construction traffic and abnormal loads without the need for extensive works and/or considerable disruption.
- Sites with natural protection from extreme weather i.e. not on the coast or sheltered by a hill.
- Sites with favourable surrounding topography (i.e. a backdrop such as a hill to minimise the visual impact of the substation).

Stage 2: Detailed site selection

This project is currently at the detailed site selection stage, where the method of identifying the least constrained substation site option has involved the following four key tasks:

- Identification of the baseline situation
- Identification of alternative options
- Environmental and technical analysis of site options
- Identification of the least constrained option

Substation

Stage 0: Strategic options assessment

Stage 1: Initial site screening

Stage 2: Detailed site selection

Pre-application:
Proposed site confirmation
Concept design
Consent Design freeze
Environmental assessment
Proposed site consultation

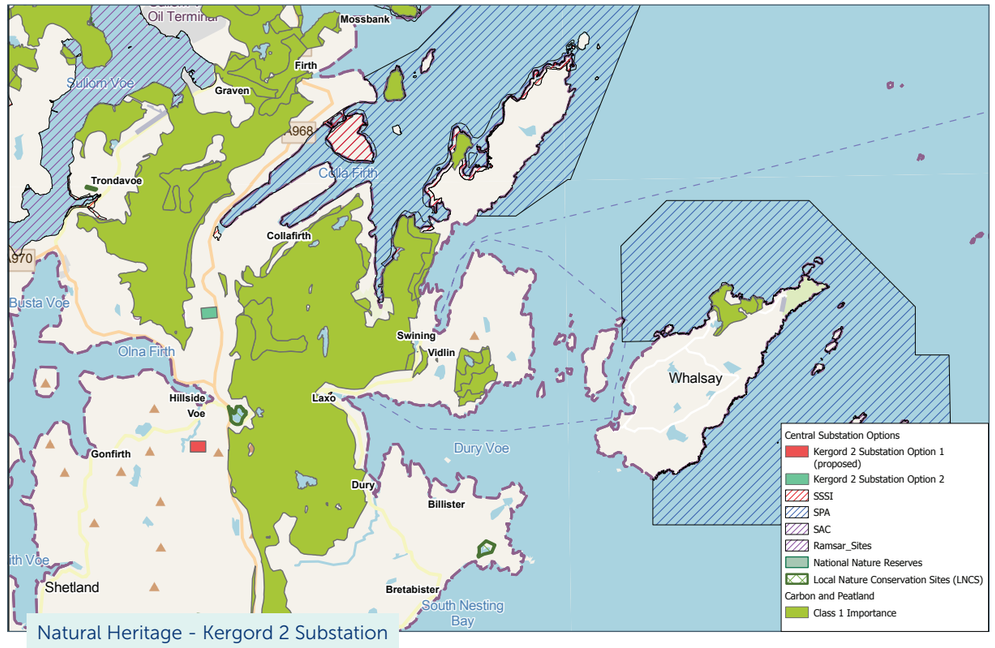
Consent application

Level of definition increases

Site options, considerations and constraints

Two substation site options have progressed through Stage 1 and Stage 2 of our site selection process. The locations of these two options are shown on the following maps. Site Option 1 is situated at the northern end of the Kergord Valley. Site Option 2 is situated north of Voe.

Kergord 2 Substation shortlisted site options



Natural Heritage - Kergord 2 Substation

Environmental considerations

Landscape and Visual: Both site 1 and site 2 lie within the Inland Valleys Landscape Character Type (LCT), have nearby residential and road receptors, and avoid both designated scenic areas and core paths.

Natural Heritage: Both site Option 1 and site Option 2 avoid designated natural heritage sites but support Annex I and Red-listed bird species and have suitable otter habitat. Both sites lie within a Drinking Water Protection Zone (DWPZ) and are subject to flood risk, but have no wetlands or nearby private water supplies.

Other Potential Constraints: Site Option 1 is close to one area of historic interest and several listed buildings, while site Option 2 is near one non-designated farmstead and one listed building. Both site options are located on non-prime agricultural and low quality forestry land, and are unlikely to cause significant recreational impacts despite proximity to core paths and the EuroVelo 12 cycle route.

Engineering considerations

Both Site Option 1 and Site Option 2 offer good access options from a combination of public road infrastructure and private access tracks as well as having favourable topography for construction. Both sites have existing utilities present, particularly Distribution circuits, which while offering opportunities for connectivity, may require diversion.

Peat is present on both sites, though Site Option 1 has a lower proportion of peat coverage based on desk-based studies. Neither site sits within a flood risk zone. Significantly, site option 1 has a closer proximity to the existing Kergord Substation than Site Option 2.

Proposed least constrained substation site

We believe that substation option 1, at the northern end of Kergord Valley is the least constrained substation site option, and therefore the most suitable to be taken forward in the development process.

Although the environmental and engineering considerations between site option 1 and site option 2 are relatively similar, a key consideration is the proximity to the existing Kergord Substation. As highlighted earlier in this booklet, a key role of the Kergord 2 substation is to increase the voltage of the system from 132kV to 220kV, therefore minimising the number of circuits required to continue north up the Island.

Site option 1 would ensure that the voltage is increased, and circuit numbers reduced, as close to the existing Kergord substation as possible, minimising the environmental, community and engineering impacts of the onward circuits.

The Town and Country Planning Process

The Local Planning Authority

Shetland Islands Council as Local Planning Authority will determine the outcome of any planning application made under the Town and Country Planning (Scotland) Act 1997 and will confirm whether the development requires Environmental Impact Assessment (EIA) as part of the consenting pathway for our substation project.

An initial appraisal of environmental constraints is currently underway to inform the level of environmental assessment that would be required in relation to the Kergord 2 substation project. If, as a result of this process, the proposal is confirmed as EIA development by the Planning Authority following formal EIA screening, any subsequent planning application would be accompanied by an Environmental Impact Assessment Report (EIAR).

The pre-application process

We currently anticipate that the development would be a National Development in terms of the planning hierarchy and as such a Proposal of Application Notice (PAN) will be submitted to Shetland Islands Council in Spring 2026. This would mark the first formal step in the planning application process, and it begins a consultation period that must allow for at least 12 weeks between the start of pre-application consultation and the submission of a planning application.

The plans that we are consulting on at this early stage may change between now and the submission of the planning application. The red line boundary submitted with the PAN will represent the maximum extent of the potential application site, although this area may be reduced or refined as the development proposal is finalised.

We are required to host at least two formal pre-application consultation (PAC) events to provide the opportunity for members of the public and other interested parties to comment on the proposals and to give feedback on comments received. Today's event is not one of those two formal events but it is an additional opportunity to make you aware of our plans and for us to gather feedback to inform our proposal at an early stage. The two PAC events are planned to take place in Spring 2026.

The PAC process and the contributions that it generates will be recorded in a formal Pre-application Consultation Report that would be submitted with any planning application. Comments made during the pre-application consultation process are not formal representations to Shetland Islands Council. Once the planning application has been submitted, there will be a formal opportunity to make representations directly to the Council.

Submitting a planning application

We expect that the planning application for the Kergord 2 substation will be submitted to Shetland Islands Council in summer 2026.

Shetland AC Connections: Kergord 2 Substation

Working with landowners and occupiers

SSEN Transmission recognises landowners and occupiers as key stakeholders in the development of our projects and is committed to consultation and engagement with all parties likely to have an interest in our proposals.

SSEN Transmission will be required to carry out engineering surveys to inform the design process. Consent will be sought from affected landowners and occupiers in advance of these surveys.

As the project design develops, we will work with landowners and occupiers to mitigate the impact of our infrastructure on their properties. Our team of dedicated land managers will be on hand to answer queries and address concerns throughout.

As the substation design progresses, we will be required to secure the appropriate land rights from the relevant parties for all infrastructure. Our land managers will provide updates to all affected landowners and residents as this process progresses.

Delivering a positive environmental legacy

We recognise that we have significant interaction with the environment through the activities we undertake in Scotland as we seek to develop and improve the transmission network. With this work comes a legal responsibility to design and build our projects in a manner which protects the natural and built environment.

We are committed to protecting and enhancing the environment by minimising the potential impacts from our construction and operational activities on biodiversity. To this end, we have committed to no net loss of biodiversity in non irreplaceable habitats for all of our projects gaining consent from 2020 onwards, and net gain of biodiversity on all projects gaining consent from 2025. This means that during the development, construction and operation of our projects, we will leave the environment no worse than when we found it, and where possible make it even better, leaving a positive environmental legacy at all of our SSEN Transmission sites As this project progresses through the development process, we will actively seek ways to avoid and minimise impacts on biodiversity, through careful routeing design to avoid areas of highest biodiversity value, to implementing habitat restoration and improvement measures in areas within and surrounding the proposed development.

Example projects

Shetland HVDC project

As part of our Biodiversity Net Gain (BNG) commitments, we've undertaken significant landscape and habitat creation works at both ends of our project—at the Kergord DC Converter Station in Shetland and the Noss Head Switching Station near Wick in Caithness.

Kergord Converter Station

With the site located at the base of the Kergord valley, we constructed two watercourses—one at the southern end and another at the northern boundary of the site. These were designed to collect and redirect several smaller natural watercourses that previously flowed into the Burn of Weisdale. To enhance the new watercourses at Kergord, we planted native woodland species along their banks and along the eastern boundary adjacent to the Burn of Weisdale, helping to stabilise the banks and reduce erosion. Across the site, we've also planted extensive areas of woodland, woodland edge, scrub, open grassland meadow areas and created a variety of wetland habitats —including scrapes, detention basins, and a swale. These have been enriched with native wetland plugs to support Shetland's unique biodiversity.

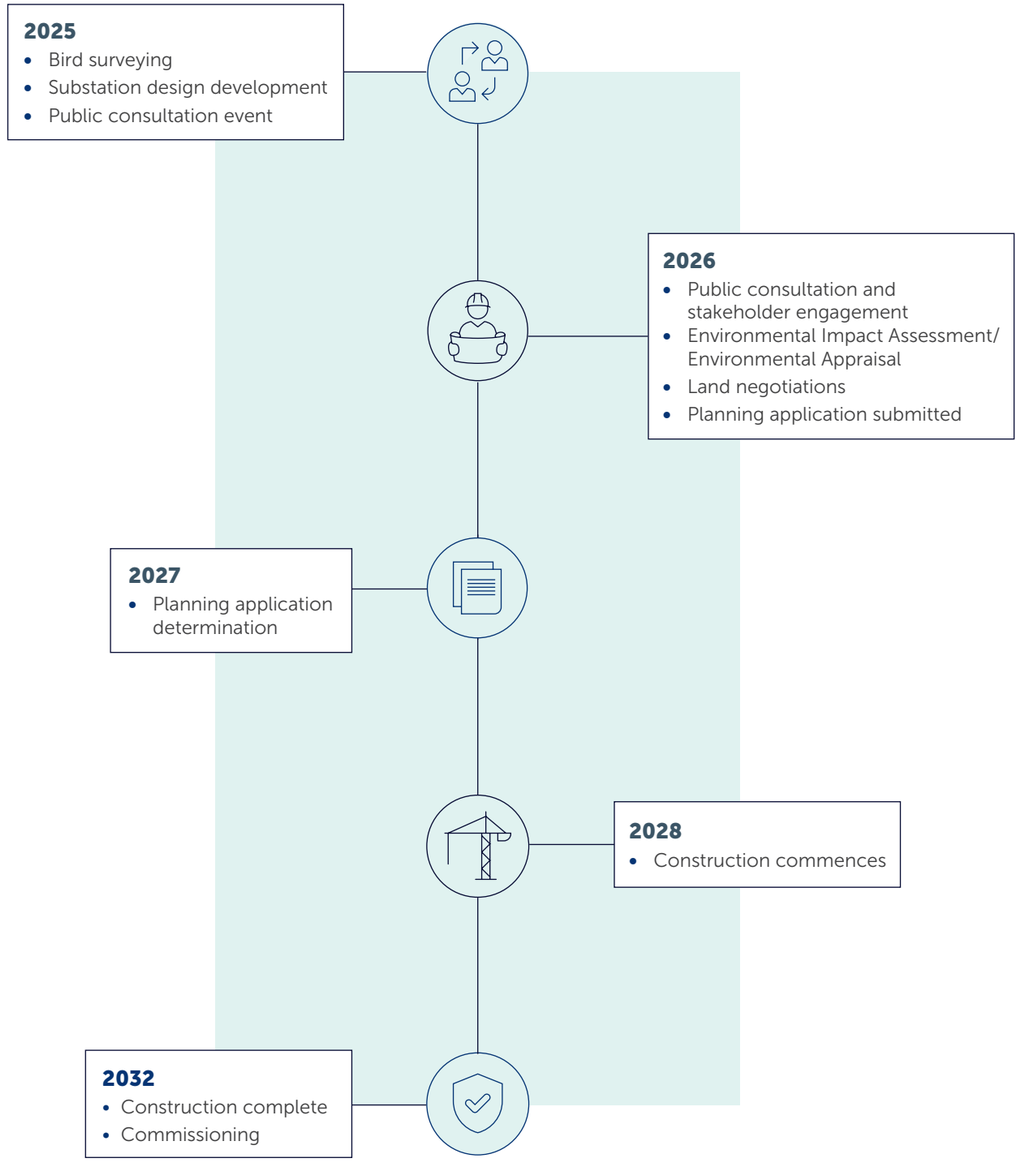
Noss Head Switching Station

At Noss Head, the former agricultural grassland has been transformed into a diverse landscape designed to support local biodiversity. Wildflower meadows and grasslands have been planted to attract pollinators, including the rare great yellow bumblebee, which is endemic to Caithness. To further enhance ecological value and visual screening, extensive woodland and scrub habitats have been introduced around the site's landscaped bunds. A swale and detention basin have been created to help manage surface water and reduce flood risk. These areas have been planted with a coastal meadow mix.

Shetland AC Connections: Kergord 2 Substation

Project timeline

*Please note that dates are indicative and subject to change.



Next steps

We value community and stakeholder feedback. Without this, we would be unable to progress projects and reach a balanced proposal.

The feedback period

Following our events, a consultation period will open until **3 November 2025.**

How to provide feedback

You can complete our feedback form online, using the feedback form at the back of this booklet or submit feedback in writing or email. The feedback will be analysed by the project team and a report on consultation produced and published on our website detailing our response to your feedback.

Our Community Liaison team

Each project has a dedicated Community Liaison Manager who works closely with community members to make sure they are well informed of our proposals and that their views, concerns, questions or suggestions are put to our project teams.

Throughout the life of our projects, you will hear from us regularly. We aim to establish strong working relationships by being accessible to key local stakeholders such as community councils, residents' associations and development trusts, and regularly engage with interested individuals.

What we're seeking views on

We want to know your thoughts on the routes under consideration. We'll be actively looking to mitigate the impacts of the project as much as possible over the coming months, but it would be helpful to understand what you believe we should be doing to help minimise these impacts and if there are any opportunities to deliver a local community benefit you would like us to consider.

We encourage all interested community members to fill in a feedback form when submitting feedback, however if you prefer, you can email us to provide your feedback or ask any questions.

Recite me

To support everyone online, we provide accessibility and language options on our website through 'Recite Me'. The accessibility and language support options provided by 'Recite Me' include text-to-speech functionality, fully customisable styling features, reading aids, and a translation tool with over 100 languages, including 35 text-to-speech.

Please select "Accessibility" on our website to try out our inclusive toolbar."

How To Get In Touch

SSEN Transmission, Stewart Building, Lerwick, Shetland, ZE1 0LL

shetlandengagement@sse.com

Additional information:

The best way to keep up to date is to sign up to project updates via the project webpage:

ssen-transmission.co.uk/northern-shetland-kergord

You can also follow us on social media:

@ssentransmission @SSETransmission

Shetland AC Connections: Kergord 2 Substation

Your feedback

Thank you for taking the time to read this consultation booklet. 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. Have we explained the need for this project adequately?

☐ Yes ☐ No ☐ Unsure

Comments:

Q2. Have we explained the approach taken to select the least constrained substation site adequately?

☐ Yes ☐ No ☐ Unsure

Comments:

Q3. Are there any factors, or environmental features, that you consider may have been overlooked during the least constrained substation site selection process?

Comments:

Q4. Do you have any other comments about the proposed least constrained substation site?

☐ Yes ☐ No ☐ Unsure

Comments:

Full name: ..... **Email:** .....

Telephone: ..... **Address:** .....

We would like to send you relevant communications via email such as invitations to stakeholder events, surveys, updates on projects, services and future developments from the Scottish and Southern Electricity Networks group listed below. If you are happy to receive email updates please opt in by ticking the box below. You can unsubscribe at any time by contacting us at stakeholder.admin@sse.com or by clicking on the unsubscribe link that will be at the end of each of our emails.

☐ **If you would like to be kept informed of progress on the project, 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:

Post: SSEN Transmission, Stewart Building, Lerwick, Shetland, ZE1 0LL
Email: shetlandengagement@sse.com
Online: ssen-transmission.co.uk/northern-shetland-kergord

For information on how we collect and process your data please see our privacy notice available at today's event. This can also be obtained online at: ssen-transmission.co.uk/privacy

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

We intend to use Artificial Intelligence (AI) to assist our experienced teams in the analysis of your feedback, so we can categorise key points raised more quickly. You can learn more about how we're utilising AI at: ssen-transmission.co.uk/AIFAQ

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.