



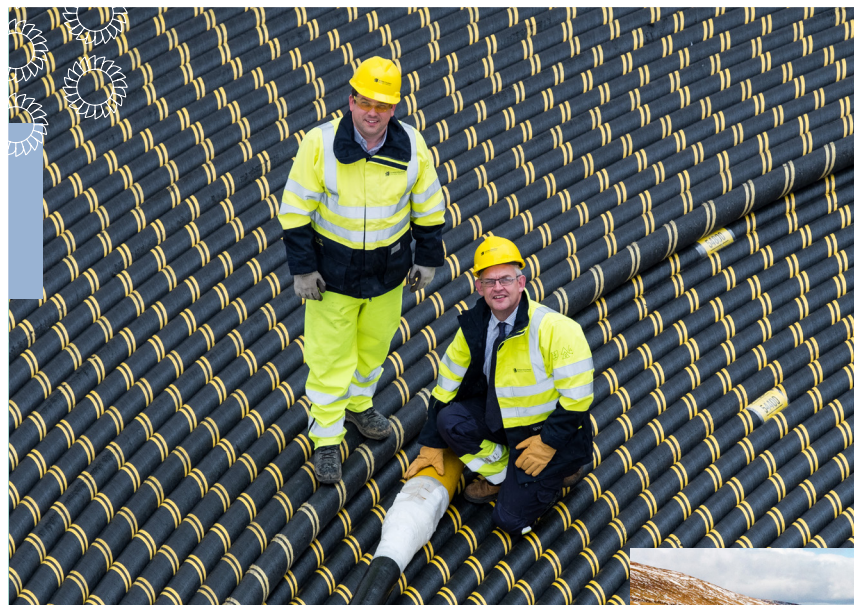
Scottish & Southern
Electricity Networks

TRANSMISSION

Shetland 2 High Voltage Direct Current (HVDC) Link

Marine Consultation Event

Brae and Portsoy
June 2025



ssen-transmission.co.uk/shetland2



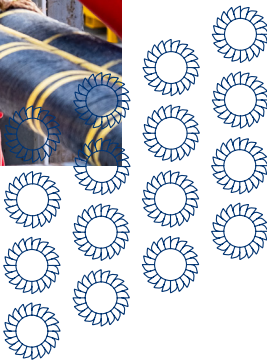
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The consultation events will be taking place on:

17 June 2025, 2–7pm
Portsoy Town Hall, 2-4 Seafiel St, Portsoy, Banff AB45 2QL

24 June 2025, 3.30–7pm
Brae Public Hall, Brae, Shetland ZE2 9QJ



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 over £20 billion into our region’s energy infrastructure this decade, with the potential for this to increase to over £30bn. This investment will deliver a network capable of meeting 20% of the UK’s Clean Power 2030 target and supporting up to 37,000 jobs, 17,500 of which will be here in Scotland.



Scan the QR code with your smartphone to find out more about how these policies have been assessed and determined.

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 land mass, 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/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 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. The way we consult is also a two-way street. 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 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 new electricity Generators (e.g. onshore and offshore wind farms) and demand projects (e.g. hydrogen production) that require to connect to the on-island electricity transmission network on Shetland. Although the first Shetland High Voltage Direct Current (HVDC) link was built with the maximum capacity available on the market at the time, it is insufficient to accommodate the growth in Generation and Demand customers, as is the existing on-island transmission infrastructure.

In March 2024, the National Energy System Operator (NESO) published a report called 'Beyond 2030' also known as the transitional Centralised Strategic Network Plan 2 (tcSNP2), which recommended a second HVDC link to connect Shetland to the Scotland mainland.

The **Shetland 2 HVDC Link** project will enable the connection of contracted customers and enable future potential schemes to connect on Shetland and enable the transfer of electricity onto the Great Britain electricity network. This new infrastructure will also connect to the existing Shetland 1 HVDC link.

The **Shetland 2 HVDC Link** project is in the early stages of development, which is why we are out today consulting local communities and stakeholders to seek feedback on our early plans.

Today's consultation event is focused on the subsea cable element of the project. We are planning to hold another consultation event later in the year where we will share more information on the new electricity infrastructure that is required on Shetland and the Scottish mainland to connect all new Generation and Demand customers.



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 of the project is vital in shaping our proposals and to do this effectively, we need to capture feedback from stakeholders and harness local knowledge to identify key risks. Today we are presenting our approach to developing this project.

We're committed to delivering a meaningful consultation process that actively seeks the views of everyone affected by our plans. That means making our plans clear and easily accessible, so that you can give us input throughout each stage of the development process.

We want you to share your thoughts and opinions on our plans, where you think we can make improvements, concerns about the impact of our work.

By telling us what you think, you will help shape our proposals. We want to harness your local knowledge so that we spot any unforeseen challenges early and maximise the potential benefits and opportunities for your communities. Because, ultimately, we want you to work with us to ensure that the energy infrastructure we build will be the best it can possibly be.

This event is intended to provide a high-level overview of the project, and specifically to present the broad area of interest for the subsea cable from Mainland Shetland to the Moray and Aberdeenshire coast.

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

What we are consulting on today

This event is focusing on the marine section of the project. Today we are sharing broad, unrefined areas of interest for landfall of the Shetland 2 HVDC link, that fall to the North of the Shetland Mainland area and an area spanning Lossiemouth to Rattray Head on Mainland Scotland.

We are also sharing indicative cable routes within an area of interest, that is in itself broad. The cable corridor options will navigate other users of our seas including, but not limited to; important fishing areas, aquaculture sites, marine protected areas, offshore wind farms, subsea pipelines, subsea power and telecommunication cables and wrecks.

Who we are consulting with

At this stage we are interested in hearing feedback from a broad range of stakeholders including but not limited to, communities, fisheries and aquaculture, statutory and non-statutory consultees.



Project background

In March 2024, National Energy System Operator (NESO) published a report called 'Beyond 2030'. One of the electricity network upgrade projects listed in this report was called the 'Shetland hub'.

According to the 'Beyond 2030' report, the rationale for this upgrade is to enable the connection of renewable power from 3 Scotwind offshore wind farm projects onto mainland Shetland, in turn reducing reliance on diesel back-up generation and future proofing Shetland for future renewable developments. The additional energy produced by the Scotwind projects will then be transported to mainland Scotland via a new cable link, Shetland HVDC link 2, reducing the number of subsea cables required between Shetland and Scotland Mainland.

The project is currently in the early stages of development and is being led by SSEN Transmission. SSEN Transmission has a licence obligation to provide a connection to the UK's electricity transmission network when requested by a generator.

Further information in relation to the onshore elements of this project listed in the right hand box, will be presented at future consultation events.



You can read the NESO Beyond 2030 report here.

In addition to the Subsea HVDC cable, the other key elements of the Shetland 2 HVDC Link may include:

Shetland:

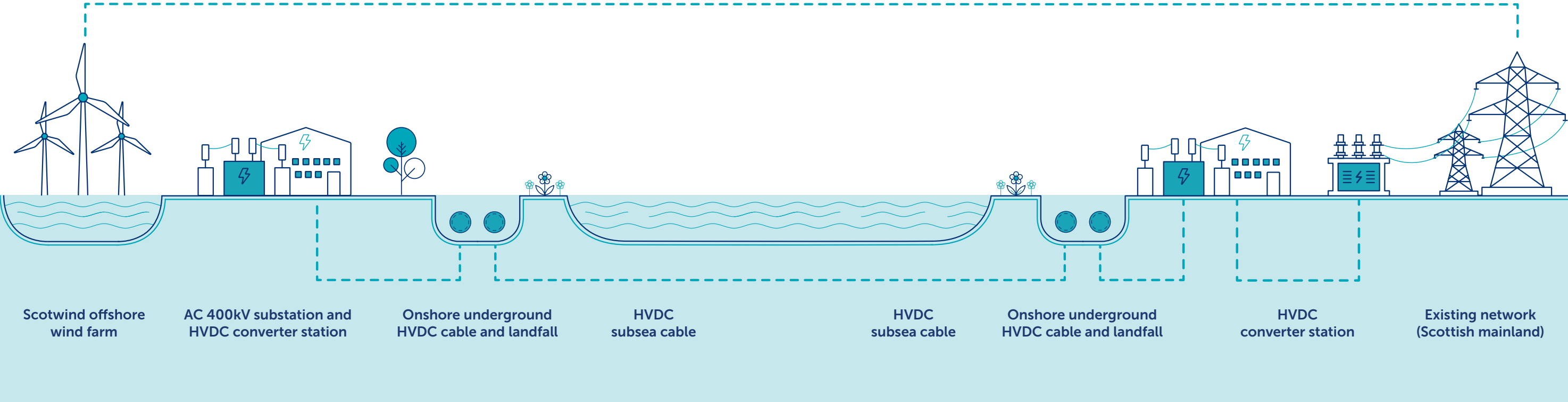
- A new HVDC converter station
- A new AC 400kV substation
- Underground cable and landfall

Scottish Mainland:

- A new HVDC converter station
- Underground cable and landfall

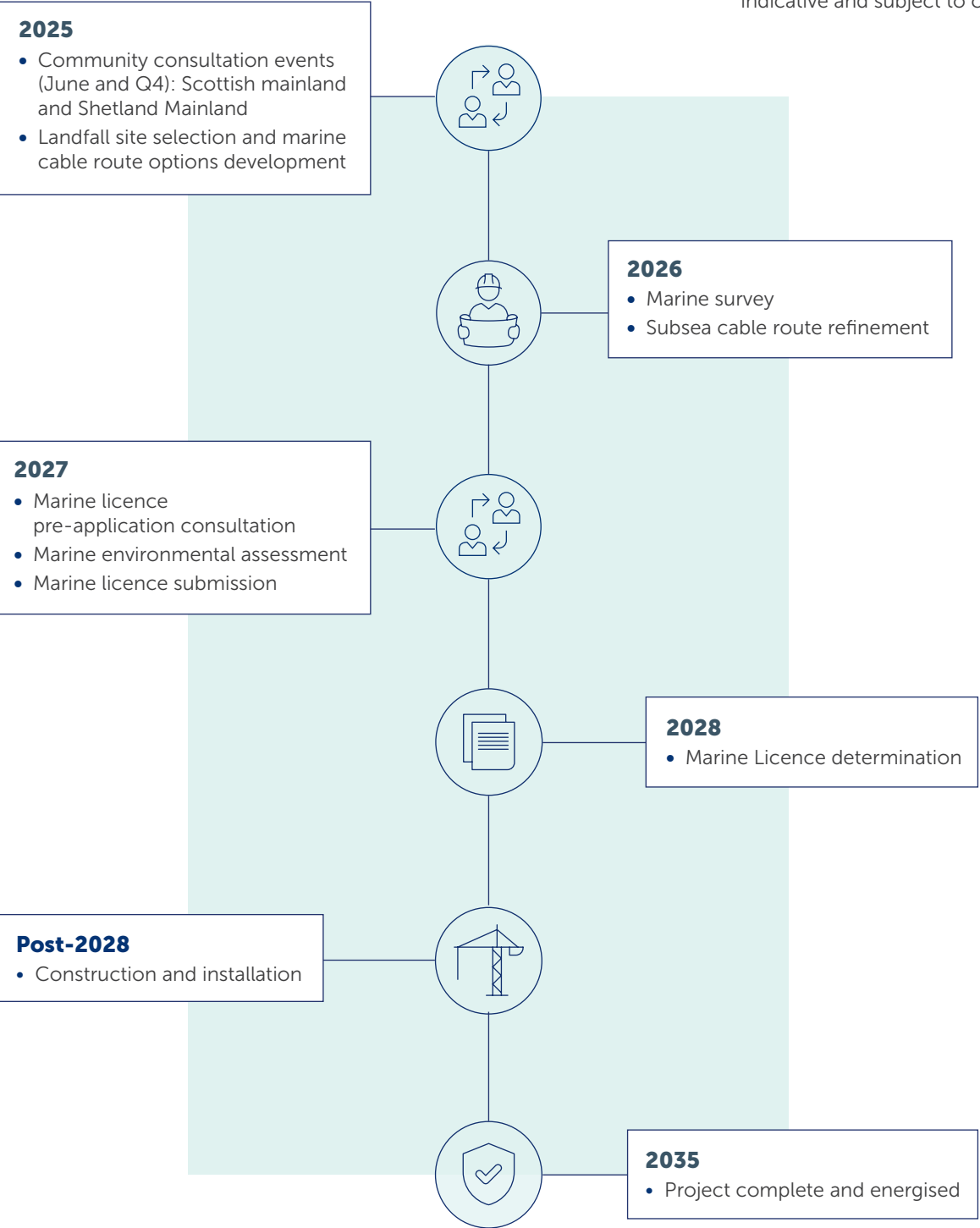


HVDC Converter Station at Kergord



Project timeline

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



Subsea cables and landfall

Subsea cables

Subsea electricity transmission cables are important critical infrastructure that carry electricity from areas where it is generated to areas of high demand.

The subsea HVDC system will comprise of a cable bundle which are planned to be installed in a single trench.

Wherever possible the marine cables will be buried in the seabed to protect them. Where burial is not possible, they will be protected by using rock berms placed on top of the cables or another type of external cable protection system.

What is a cable landfall?

Cable landfalls or landing points are the locations where our subsea cables come ashore. When bringing the cable ashore there are two engineering options:

Open Cut Trench

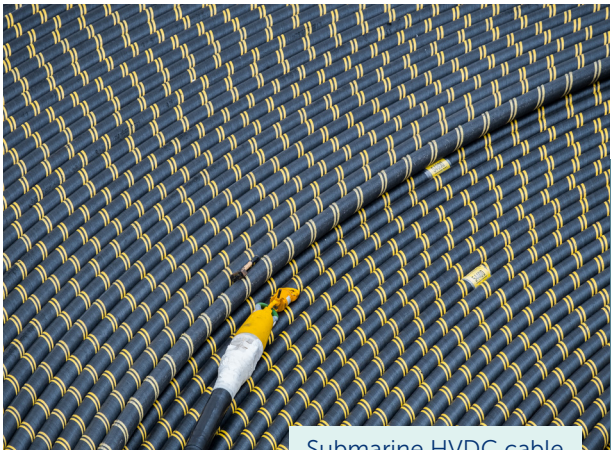
A section of the shoreline is excavated and ducts are installed that will carry the cable from under the seabed onto land. The cable is then pulled through installed ducts which are then buried and the shoreline reinstated.

Horizontal Directional Drill (HDD)

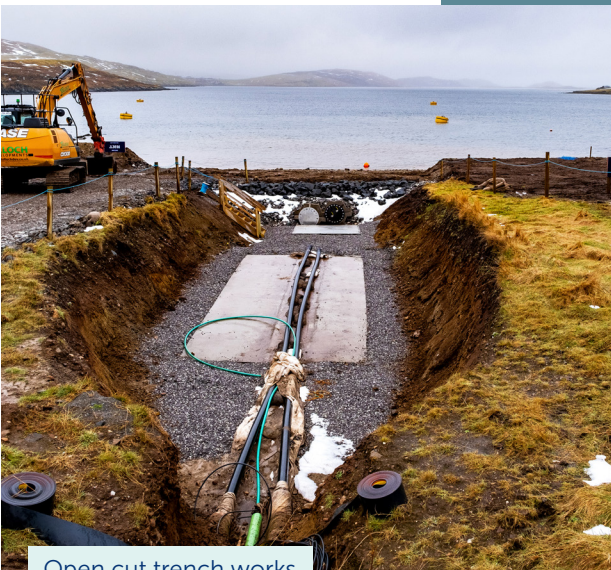
HDD is a type of trenchless method that can be used to drill and install ducts underground through the shoreline, providing an alternative method in areas of shallow bedrock or challenging geology.

Is there any above ground infrastructure?

Once the shoreline is reinstated, after the cable is laid, there will be a permanent cabinet (called a link pillar), contained within a fenced area, as shown in the photo to the right.



Submarine HVDC cable



Open cut trench works



Intermediate link pillar

Considerations during site and route selection

The process for selecting our proposed landfall and marine cable corridors:



Stage 1

Preliminary landfall option identification, focusing on identifying potential landfall locations meeting essential construction characteristics.



Stage 2

Constraints identification, identifying environmental, social, and technical constraints associated with each landfall.



Stage 3

Corridor Optioneering, identifying potential subsea cable corridors based on relative impacts on constraints identified in Stage 2.



Stage 4

Corridor Development and Selection, including a multi-disciplinary review of constraints and interactions between them to develop a suitable subsea cable corridor.

The Shetland 2 HVDC link project is currently at Stage 1 in the process detailed above.

Our site selection process - offshore

The North Sea is a dynamic and complex environment, and therefore the site selection process needs to be well informed by a range of key environmental and technical constraints, in order to strike the right balance of technical feasibility, whilst protecting the marine environment, other sectors and other users of the sea. Provided below is a list of some of the key constraints which may influence development in a marine environment, and which will be considered in the site selection process for the project.

Environmental constraints

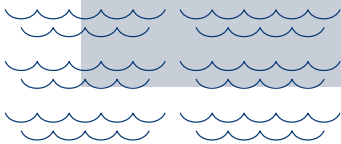
- **Cultural heritage** - the project will seek to avoid direct and indirect impacts on recorded heritage assets, such as charted wrecks.
- **Shipping and navigation** - The project will seek to avoid busy areas with a high density of shipping activity, to not impact their operations.
- **Commercial fishing** - The project will seek to engage with fisheries to manage and mitigate any impacts as best as possible.
- **Ecology and ornithology** - The project will seek to avoid wherever possible designated sites such as those designated for breeding birds, or marine mammals, which may be sensitive to installation activities.
- **Benthic ecology** - The project will seek to avoid areas of Annex I reef, including maerl beds and horse mussel beds. These habitats are protected by legislation and may be sensitive to installation activities.

Technical constraints

- **Bathymetry** - Both seabed slope and water depth may impact the feasibility of how infrastructure can be installed.
- **Seabed and landfall geology** - The type of bedrock may impact the technical feasibility of installing cable and hub e.g. ability to pile on the seabed.
- **Metoccean conditions** - Wave heights, wind speed and currents are considered as part of site selection, design and installation of the project.
- **Vessel access** - The project must ensure that water depths are sufficient and that there are no rocky outcrops that may impact the installation vessel access to the work site.
- **Third party assets** - The project will seek to minimise proximity to other third party assets, to minimise potential for disturbance to operations.

The project team uses key data sources which illustrate the above constraints, and applies them to a 'constraints model'. Once we have identified viable areas, they are taken forward for further evaluation and consultation, so we can better understand their use and sensitivity. As well as the constraints identified above, other environmental factors will be investigated including fish ecology, ornithology, marine mammals and seascape and landscape.





Marine survey

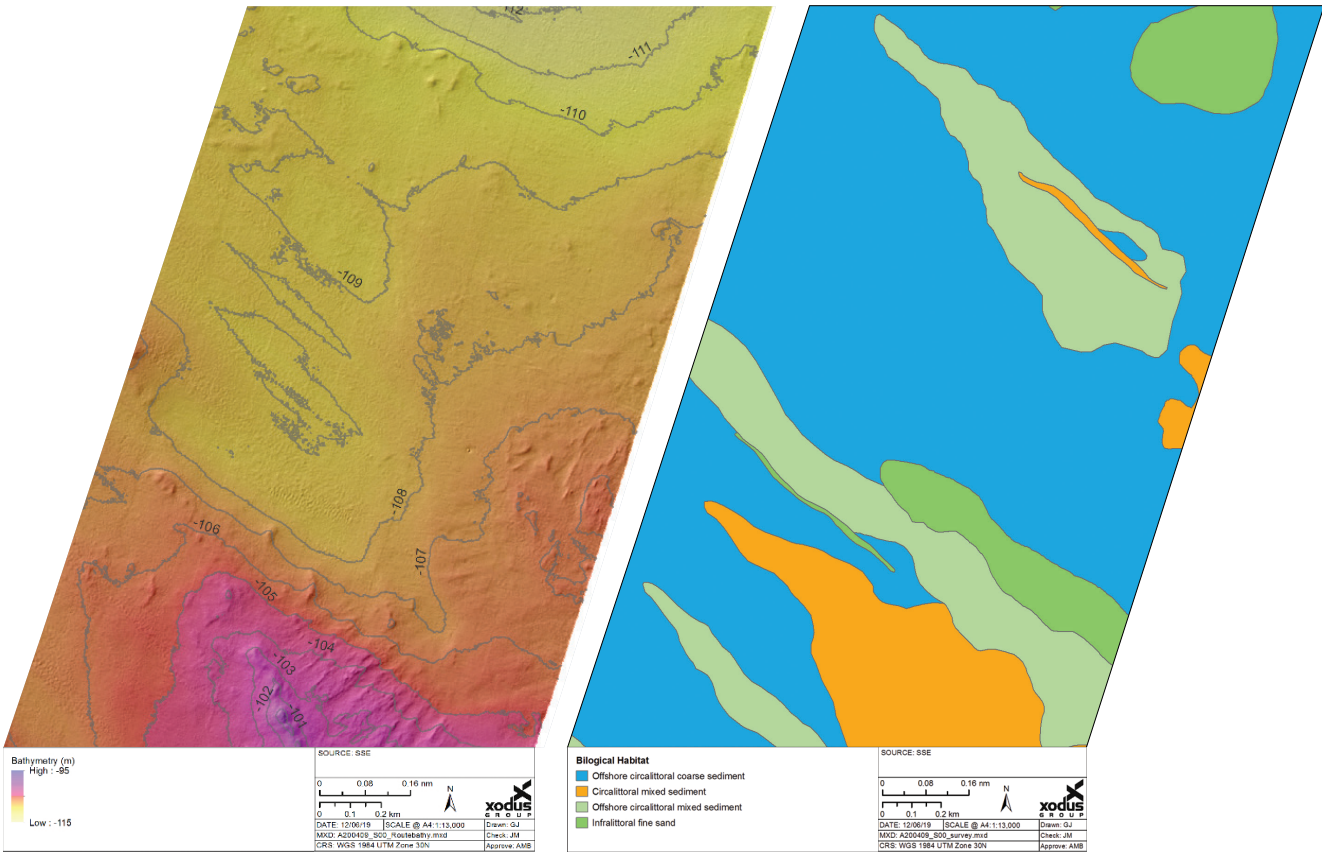
Subsea cable corridor options will be developed and assessed this year, using our understanding of the seabed, metocean conditions and the incorporation of stakeholder and community feedback.

The first marine survey campaigns are currently scheduled for 2026, whereby detailed information on bathymetry, seabed sediments and biological features and wrecks will be collected. Our marine offshore and nearshore survey operations include the following:

1. Geophysical data acquisition

To determine water depths, seabed features, shallow geology, object detection and cable crossing positions.

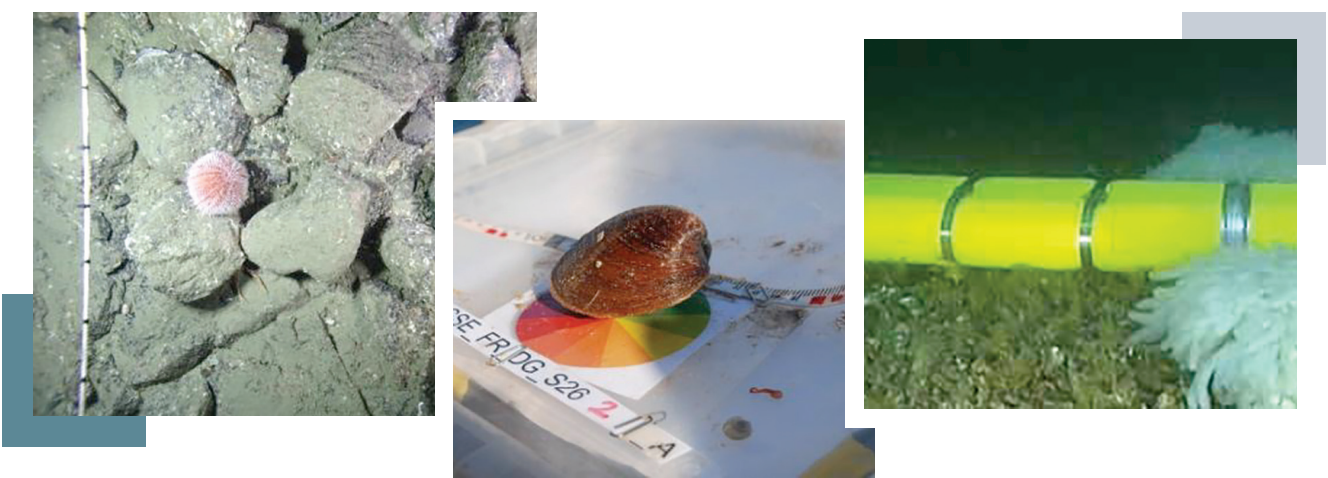
Instruments used: Multibeam Echo Sounder (MBES), Side Scan Sonar (SSS), Sub-bottom Profiler (SBP) and Magnetometer (offshore and nearshore).



2. Environmental survey

The Data from the Side Scan Sonar (SSS) and the Multi Beam Echo Sounder (MBES) is used to create habitat boundaries which are then checked using cameras and grab samples to create maps of the type and extent of seabed habitats.

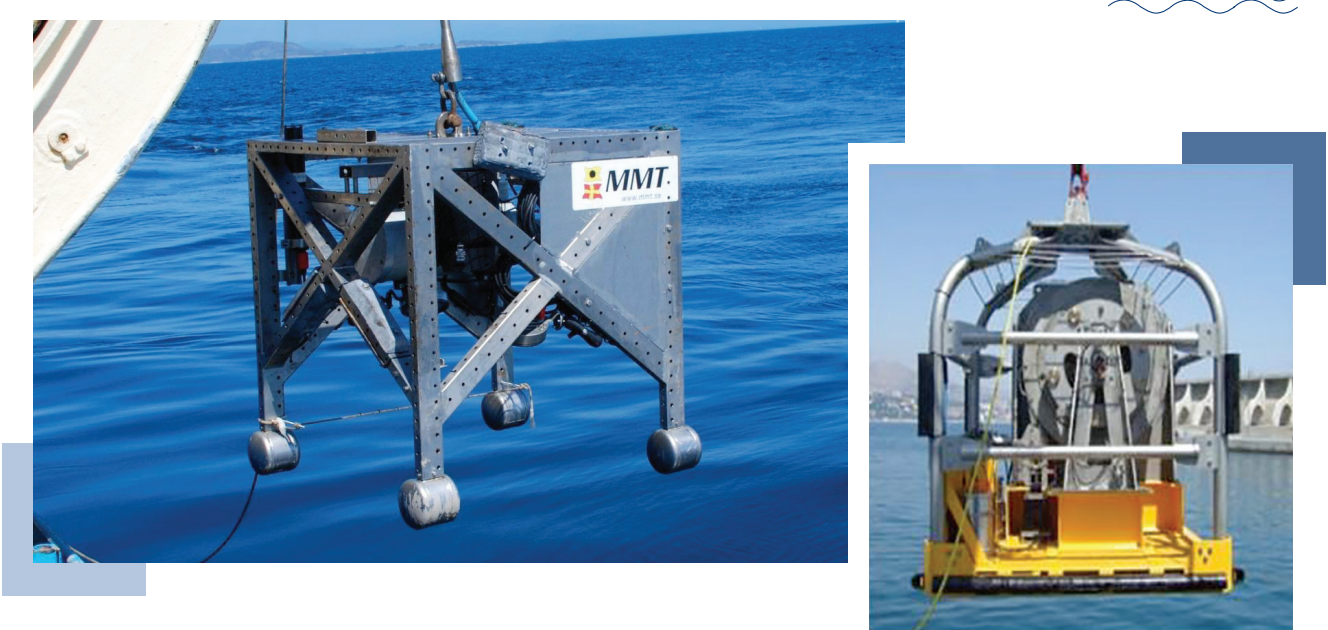
Instruments used: grab sampler and drop-down camera.



3. Geotechnical survey

To determine the structure and physical properties of the surficial and shallow sediment layers. Tools are used to recover cores of sediment and push a cone through the sediment measuring the resistance.

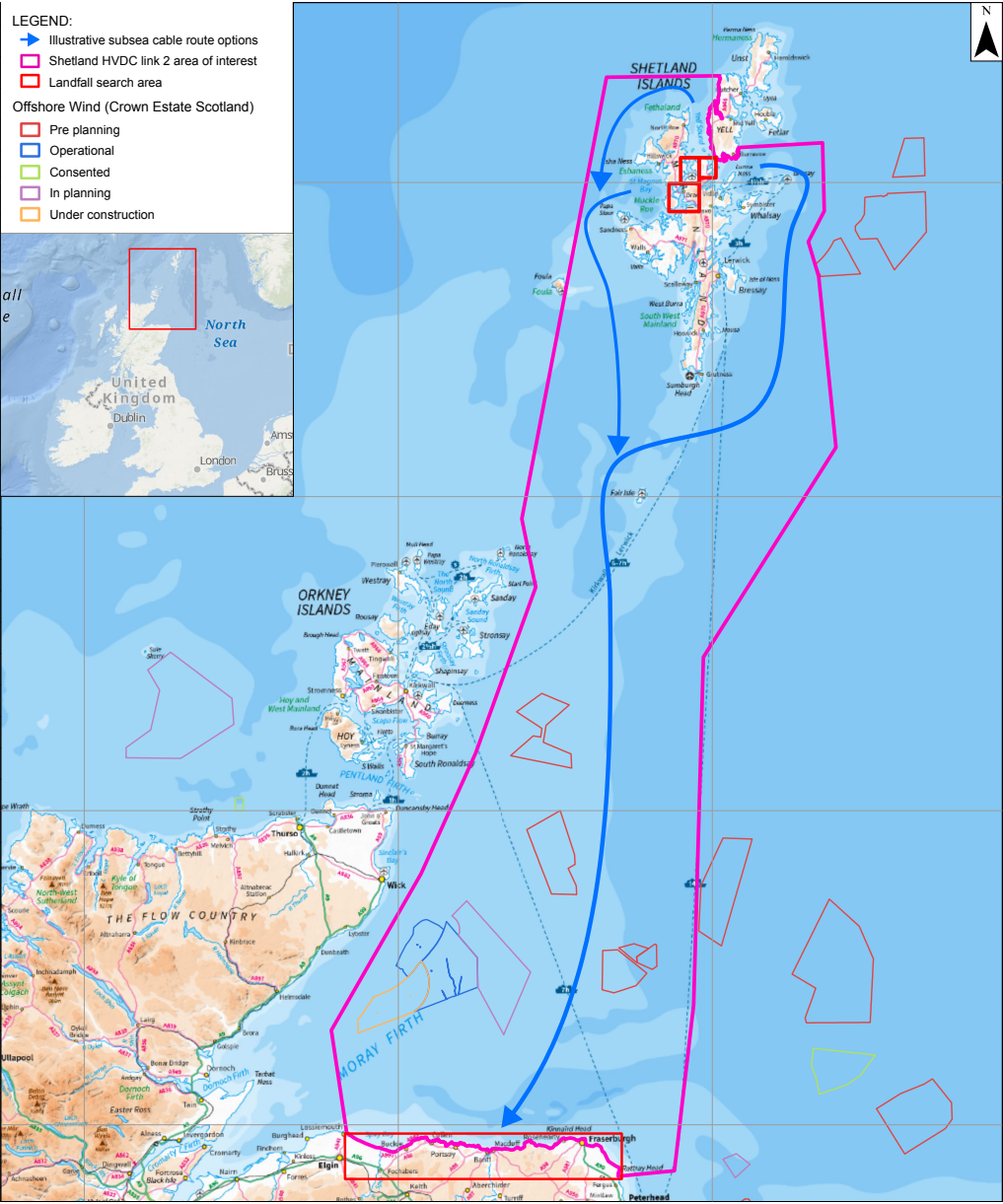
Instruments used: Vibrocorer and Cone Penetrometer Testing (CPT).



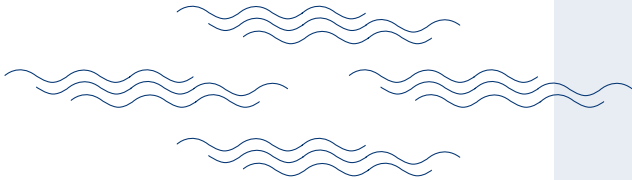
Shetland 2 HVDC Link

This chart presents the area of interest (shown in pink) that the Shetland 2 HVDC link will be routed, between Shetland and Mainland Scotland.

We are at an early stage in the process, therefore today we can only present the indicative search areas for landfalls both on Shetland and Mainland Scotland. The landfall areas in Shetland are represented by the 3 red rectangles. Each of the landfall areas being considered would require a different potential subsea cable exit route, as indicated by the 3 different blue arrows. The landfall area on Mainland Scotland is highlighted by the large rectangle. We wish to gain feedback on the marine elements of this project to feed into the early site and route selection.



Notes



Illustrative cable routes are indicated by the blue arrows from Shetland to Mainland Scotland within the area of interest denoted by the pink polygon. The search areas for landfall are shown by the red rectangles.

Have your say

We understand and recognise the value of feedback provided by the community and stakeholders. Without this valuable feedback, we would be unable to progress projects and reach a balanced proposal.

The feedback period

We will accept feedback from now until **5 August 2025**.

How to provide feedback:

- Submit your feedback online by scanning the QR code on this page or via the form on our project webpage.
- Email the feedback form to the Community Liaison Manager, or write to us enclosing the feedback form at the back of this booklet.

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.

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.



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.”

Community Liaison Manager

Thea Groat



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/shetland2

You can also follow us on social media:



@ssentransmission



@SSETransmission

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

Comments:

Q2. Do you have any comments or concerns regarding the illustrative landfall regions and subsequent subsea cable routes shared today and subsequent locations of subsea cable?

Comments:

Q3. Do you fish in the area included for consideration for the cable?

Please provide details of the type of fishing you do. i.e. mobile or static; and Please provide an estimate of how often you fish in this area and the time of year.

☐

Yes

☐

No

☐

Unsure

Comments:



Q4.

Do you feel that sufficient information has been provided to enable you to understand what is being proposed and why?

☐

Yes

☐

No

☐

Unsure

Comments:

Q5.

We continuously seek to identify the best methods of communication based on community needs. Please tell us how you would prefer to receive project updates so that we can consider this for future improvements.

☐

Newsletter

☐

Email to a mailing list

☐

Text message

☐

☐

Public meetings

☐

Website updates

☐

Other (please state)

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/shetland2

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.

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