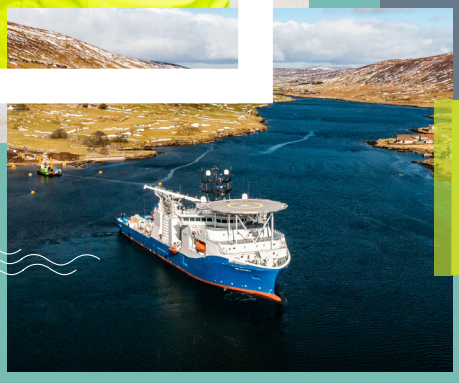
Scottish & Southern Electricity Networks

TRANSMISSION

Yell High Voltage Alternating Current (HVAC) Connection

Marine Consultation Event

Voe and Burravoe, Shetland
June 2025



ssen-transmission.co.uk/projects/project-map/southyellsubstation

Contents

The consultation event will be taking place on:

25 June 2025, 2–6:45pm
Burravoe Public Hall, Burravoe, Yell, Shetland ZE2 9AY

26 June 2025, 2–7pm
Voe Public Hall, Isles Road, Voe, ZE2 9PT

Yell High Voltage Alternating Current (HVAC) Connection

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 north of Scotland's electricity transmission network has a major role to play in supporting the delivery of Scotland's and the UK's net zero targets and delivering energy security. To support the drive to net zero, further investment in Scotland's electricity transmission infrastructure is needed to enable the connection of the growing onshore and offshore renewable energy. To do this, SSEN Transmission will invest over £20billion to upgrade the electricity transmission infrastructure.

In March 2022 the Electricity System Operator (ESO) published a report called 'Beyond 2030' also known as the transitional Centralised Strategic Network Plan 2 (tCSNP2), this recommended what further works were required, both onshore and offshore, to facilitate connection of additional offshore wind farms.

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 Clean Power 2030 submission in early 2025. It is expected that Ofgem will consult on these plans, which include the Yell HVAC Connection, in Summer 2025.

There are a number of projects that comprise the Shetland Strategy, one of which is the **Yell HVAC connection**.

Yell High Voltage Alternating Current (HVAC) Connection

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 if involving communities and key stakeholders throughout each stage of out 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 and what you think of any changes and refinements we've made. 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 in the Yell Sound, sharing the locations of a shortlist of potential landfalls. 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 elements of the project including up to the potential landfalls. We are keen to gain feedback and input on any constraints and considerations within the area.

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, stakeholders including fisheries and aquaculture, statutory and non-statutory consultees.

Project overview

The aim of the Yell High Voltage Alternating Current (HVAC) Connection Project is to connect the Island of Yell to the Electricity Transmission system on Mainland Shetland.

In 2020 and 2021, we previously consulted on a subsea cable corridor linking a landfall site at Cul Ness on Mainland Shetland with a landfall site at Burravoe on Yell. However, the outputs of the Shetland Strategy have determined that this did not fit into the wider network infrastructure on Shetland as the most efficient solution. This is why we have revisited the landfall selection and subsea cable routing exercises and are seeking feedback to inform the new proposals.

Scottish Hydro Electric (SHE) Transmission has a licence requirement to provide a connection to the UK's transmission network when requested by a generator. Therefore, the Yell HVAC Connection project is being driven by the need to connect 2 consented wind farms on Yell; Energy Isles Wind Farm and Beaw Field Wind Farm. To facilitate this, a new 220kV subsea circuit will need to be installed between north-east Mainland Shetland and Yell to provide these wind farms with access to export energy to the wider UK transmission system. This will also provide future connection capacity for potential load growth on Yell and the Northern Isles.

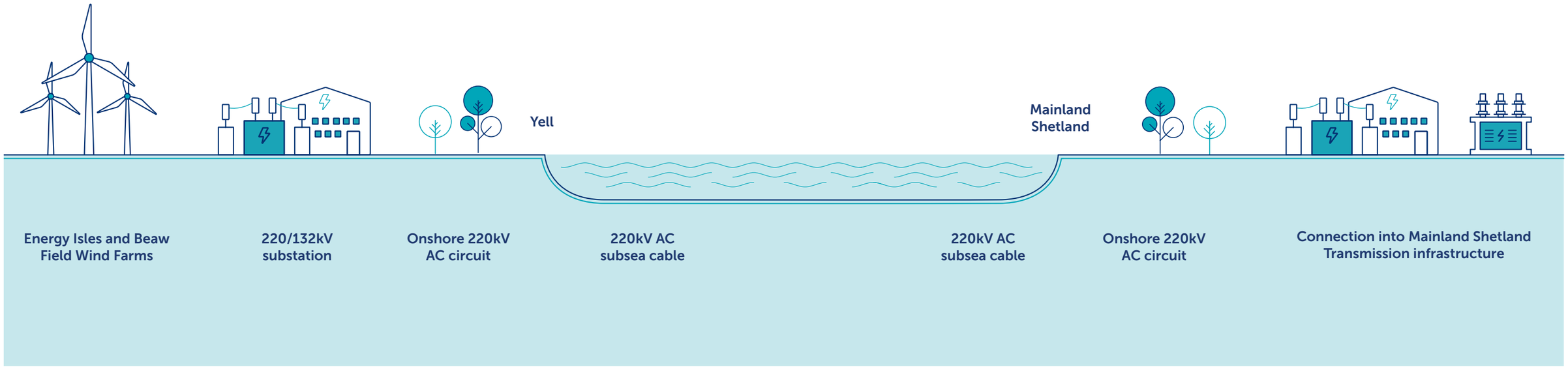
In addition to the subsea circuit, other key elements of the Yell Connection Project include:

- Construction of a new 220/132kV substation on Yell, to which the Yell wind farms will connect.
- Construction of a new 220kV circuit on Mainland Shetland to connect Yell into the expanded transmission network on Shetland.

Further information in relation to the onshore elements of this project will be presented at future consultation events.

Yell High Voltage Alternating Current (HVAC) Connection

NKT Victoria in the Weisdale Voe



Project timeline

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

2025
- Community consultation events: Shetland Mainland and Yell
- Landfall site selection and marine cable route options development

2025/2026
- Marine survey
- Subsea cable route refinement

2027
- Marine licence pre-application consultation
- Marine environmental assessment
- Marine licence submission

2028
- Marine Licence determination

Post-2028
- Construction and Installation

2032
- Project complete and energised

Yell High Voltage Alternating Current (HVAC) Connection

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 HVAC 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

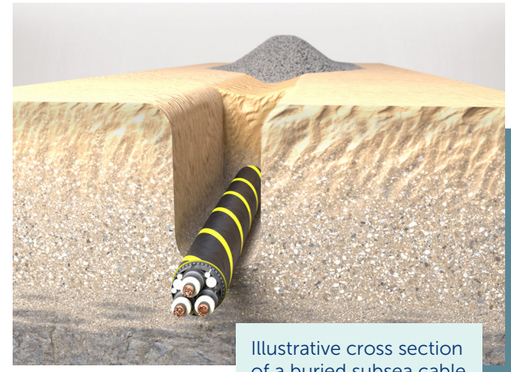
A section of the shoreline is excavated and ducts are installed that will carry the cable from under the seabed onto land. The cable is then pulled through installed ducts which are then buried and the shoreline reinstated.

Horizontal Directional Drill (HDD)

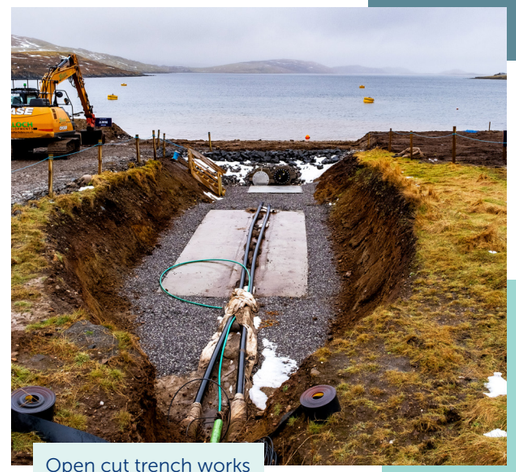
HDD is a type of trenchless method that can be used to drill and install ducts underground through the shoreline, providing an alternative method in areas of shallow bedrock or challenging geology.

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.



Illustrative cross section of a buried subsea 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 Yell HVAC connection project is currently concluding Stage 2 and moving into Stage 3 in the process detailed above.

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Our site selection process - offshore

The Yell Sound 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.
- **Metocean 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 worksite.
- **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

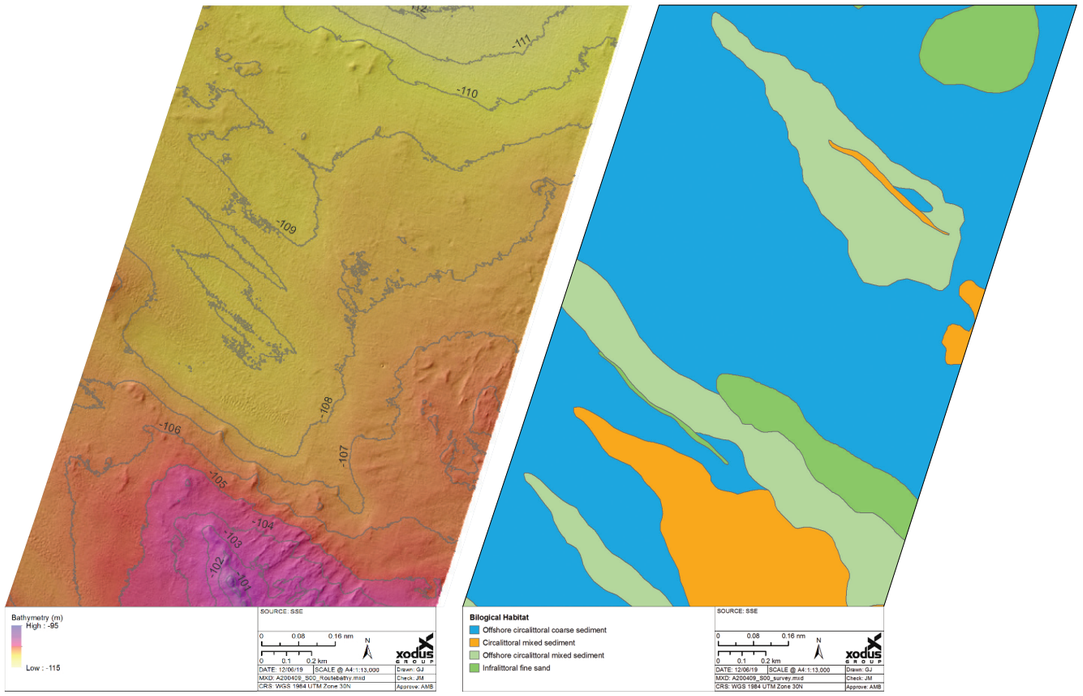
Subsea cable corridor options will be developed and assessed this year, using our understanding of the seabed, metocean conditions and the incorporation of stakeholder and community feedback.

The first marine survey campaigns are currently scheduled for the end of the year, 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).



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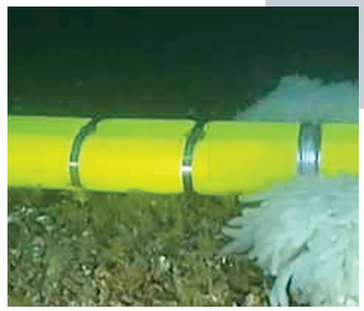
2. Environmental survey

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.

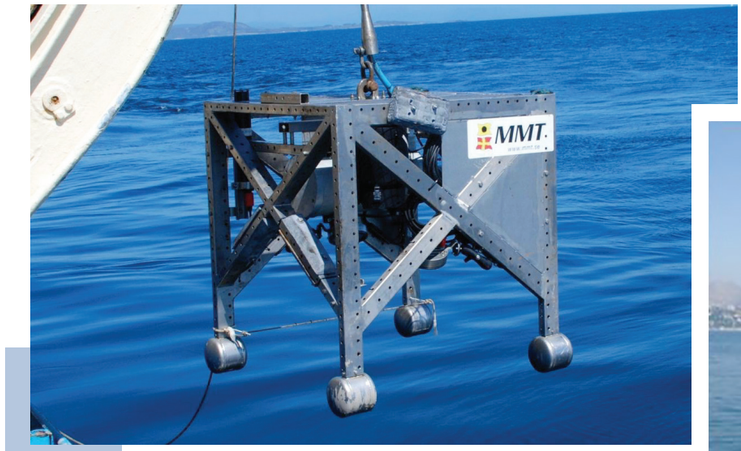
Instruments used: grab sampler and drop-down camera.



3. Geotechnical survey

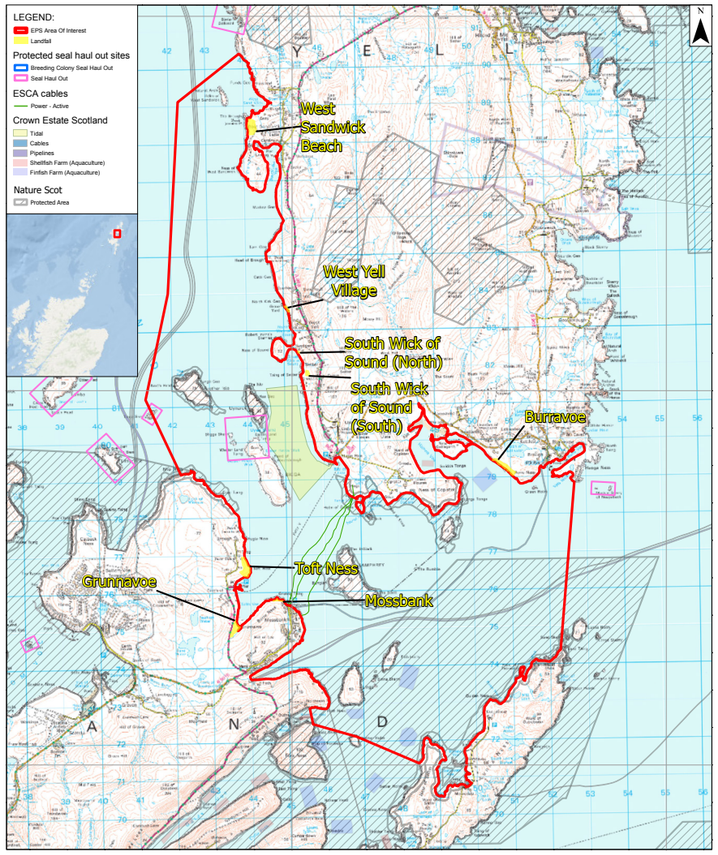
To determine the structure and physical properties of the surficial and shallow sediment layers. Tools are used to recover cores of sediment and push a cone through the sediment measuring the resistance.

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



Yell HVAC connection potential landfalls

The chart below presents the area for which the Yell HVAC connection is to be located, within the Yell Sound, linking Yell to Mainland Shetland.



The landfall options currently under consideration on the Shetland Mainland are **Toft Ness, Grunnavoe and Mossbank**. The landfalls under consideration on Yell are **West Sandwick Beach, West Yell Village, South Wick of Sound and Burravoe**. These landfalls are being assessed for their suitability to land a cable from an offshore and onshore point of view. Feedback from this consultation will feed into this process.

When the assessment has concluded for the landfall options, the subsea cable routing exercise will begin, identifying suitable cable corridors across the Yell Sound for the subsea cable to be laid.

The chart presents the landfalls under consideration in yellow. The subsea cable route will be routed within the area of interest, as shown by the red line boundary, encompassing the Yell Sound.

The chart highlights some of the considerations and constraints that will feed into the corridor assessment. These include but are not limited to Marine Protected Areas, aquaculture, subsea cables, pipelines and ferry routes. Technical constraints such as bathymetry and metocean conditions are also considered.

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Notes

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 **7 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.

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."

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/projects/project-map/southyellsubstation

You can also follow us on social media:

@ssentransmission @SSETransmission

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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 potential landfalls shown?**

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/projects/project-map/southyellsubstation

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.