

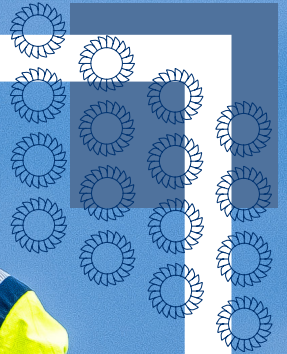


Scottish & Southern  
Electricity Networks

TRANSMISSION

# Spittal to Peterhead High Voltage Direct Current (HVDC) Link -Underground land cable

Information event



# Spittal to Peterhead HVDC Link - Underground land cable.



To support the continued growth in onshore and offshore renewables across the north of Scotland and the country's drive towards net zero, investment in our network infrastructure is needed to connect this renewable power and transport it from source to areas of demand across the country.

The extensive studies that informed the ESO's Pathway to 2030 Holistic Network Design confirmed the requirement for an offshore high voltage direct current (HVDC) subsea cable circuit between Spittal and Peterhead. The HVDC cable will connect into new high voltage AC/DC converter stations and 400kV AC substations located in Banniskirk Hub near Spittal, and Nethererton Hub near Peterhead.

The subsea portion of the cable is subject to a marine licence application and a statutory consultation process. Consultation material is available on the project webpage. The onshore underground cable elements are classed as 'Permitted Development' and are not subject to consultation. This booklet provides details of our latest alignment of the underground cable, and we invite residents and stakeholders to contact us with information that you feel we should consider as we finalise this aspect of the project.

The Spittal to Peterhead HVDC Link is part of our wider set of projects we are calling our Pathway to 2030, and you can learn more about our role in delivering net zero by visiting our project webpage: [ssen-transmission.co.uk/spittal-peterhead-subsea-cable-link](https://ssen-transmission.co.uk/spittal-peterhead-subsea-cable-link)

Find more information about our Pathway to 2030 projects here: [ssen-transmission.co.uk/2030-need](https://ssen-transmission.co.uk/2030-need)

## The story so far



### Sept 22

The identification of suitable landfalls in Caithness, Aberdeenshire and Morayshire gets underway.



### May/June 23

At public consultation events in Caithness and Aberdeenshire, we introduced our potential cable corridors between proposed landfalls and indicative converter sites.



### Aug 23

We selected the landfalls and cable corridors following consultation feedback.



### Nov 23 – June 24

We carried out ground investigations to inform us of the suitability of ground conditions for the cable installation.



### Aug 24

Refinement of cable routes to 40m corridors with exception of horizontal directional drilling (HDD) and areas where ground investigations are still underway.

## Why we're here today

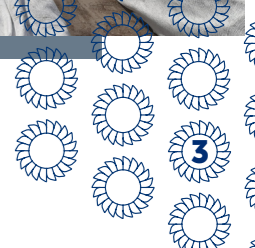
Our development of the land cable routes has seen us progress from conceptual route corridors over 1km wide linking various potential converter sites to multiple landfall locations. This has led us to refine our alignments to 40m wide in most places.

Getting to this stage has involved a lot of engagement with key stakeholders including landowners, tenants, and statutory bodies. We have undertaken multiple engineering studies, ecological surveys and ground investigations, which have led to every section of the route being adjusted to take account of our stakeholders' feedback and the findings from our surveys.

**Although the underground cable works are classed as Permitted Development, and do not require a planning application to the Local Authority, or a formal consultation process, we still consider it important to offer all our stakeholders the opportunity to consider our plans and provide feedback. Whilst not all feedback can be acted upon, it is always considered.**

We are now ready to share the outcome with the broader communities who may also have an interest in this project. We are therefore presenting our latest route alignment for information, and we welcome your questions or comments on anything that should be brought to the attention of the project team.

Some areas of the route continue to be under refinement and therefore we cannot present all the route in its final alignment, but the team would be happy to answer any questions you might have about particular sections.



# Determining the onshore cable routes

Figure 1 below shows the cable route corridors considered from the Banniskirk Hub area out to Sinclair's Bay. Multiple landfalls were considered including Freswick Bay and South of Wick, both of which can be achieved by a combination of the routes in this figure. We chose to retain Sinclair's Bay as the most favourable landfall after consideration of all consultation feedback.

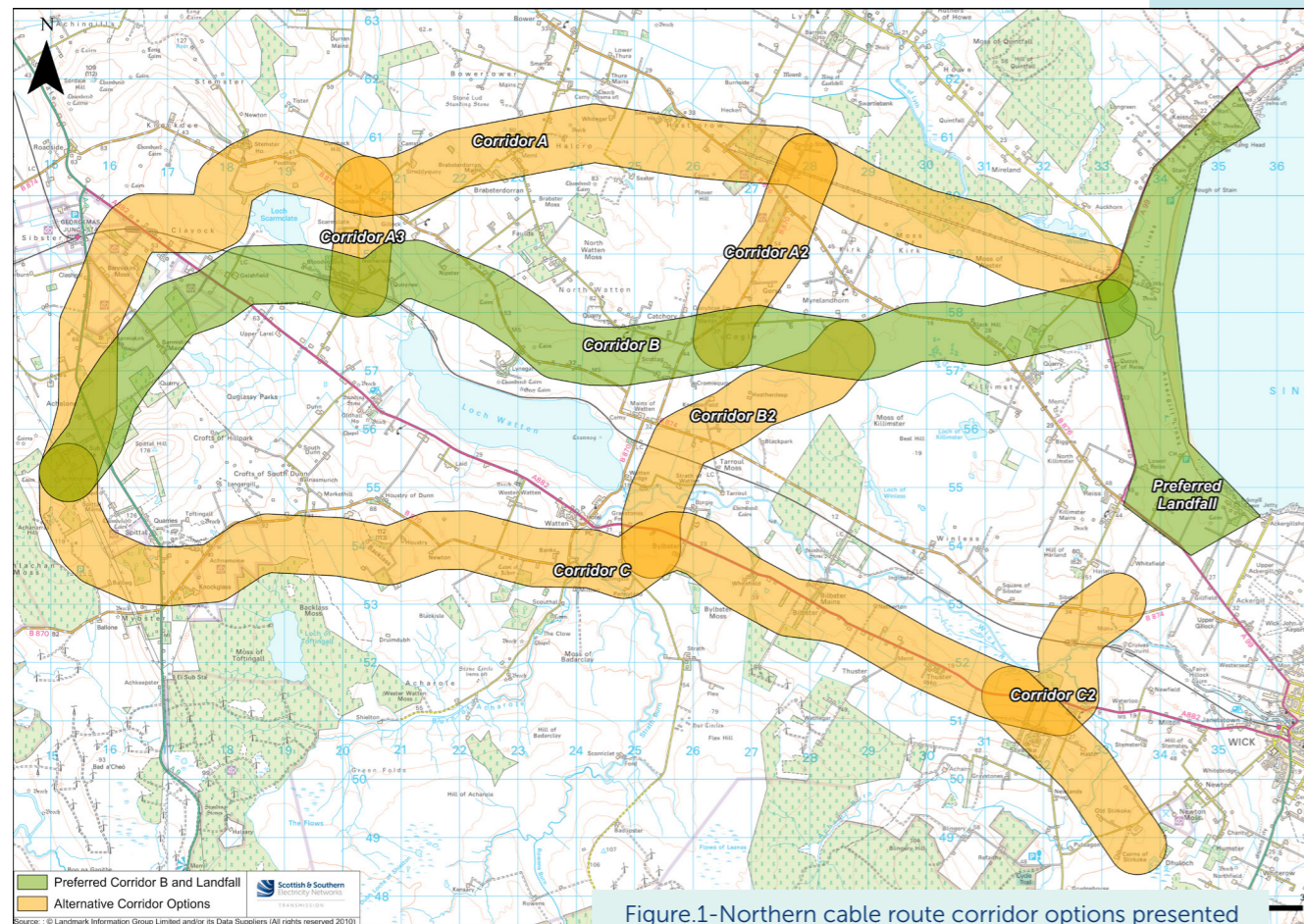


Figure.1-Northern cable route corridor options presented during our public consultation events in May/June 2023.

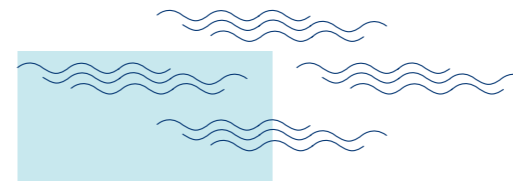
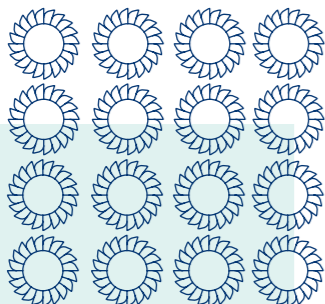


Figure 2 below shows the three corridor options into the area of Nethertron Hub from the top three evaluated landfalls. At the time we considered the route from north of Rattray Head as the least constrained and following consultation we have retained this as our favoured cable corridor.



Figure .2 - Southern cable route corridor options presented during our public consultation events May/June 2023.



# Our latest cable alignments

Our onshore cable routes span approximately 21km between Banniskirk Hub and Sinclair's Bay in Caithness and approximately 16km between Rattray Head and Netherton Hub in Aberdeenshire.

We have split each route into three sections, to allow you to see in detail the areas of most interest.



## View large scale maps:

Visit our webpage at: [ssen-transmission.co.uk/spittal-peterhead-subsea-cable-link](https://ssen-transmission.co.uk/spittal-peterhead-subsea-cable-link) or scan the QR code to access the large-scale maps of our cable alignments:



## Caithness

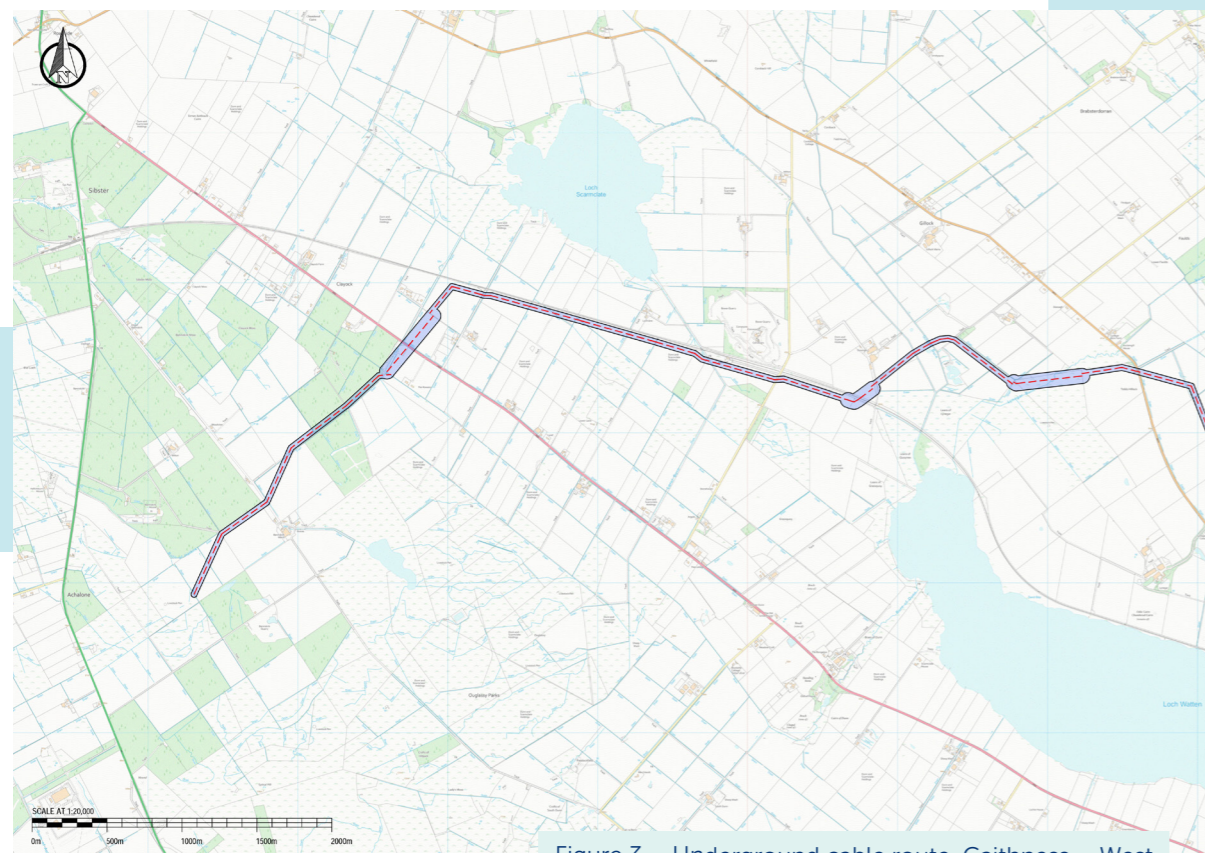


Figure 3 – Underground cable route, Caithness – West

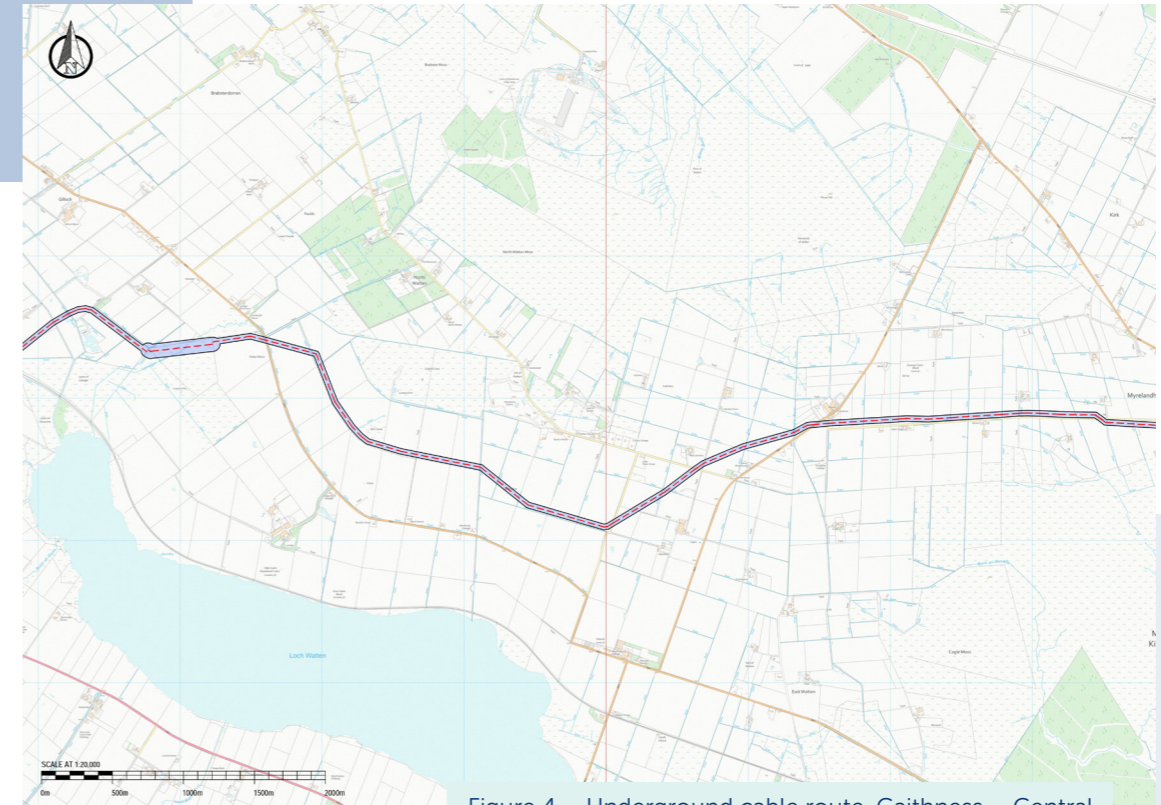


Figure 4 – Underground cable route, Caithness – Central

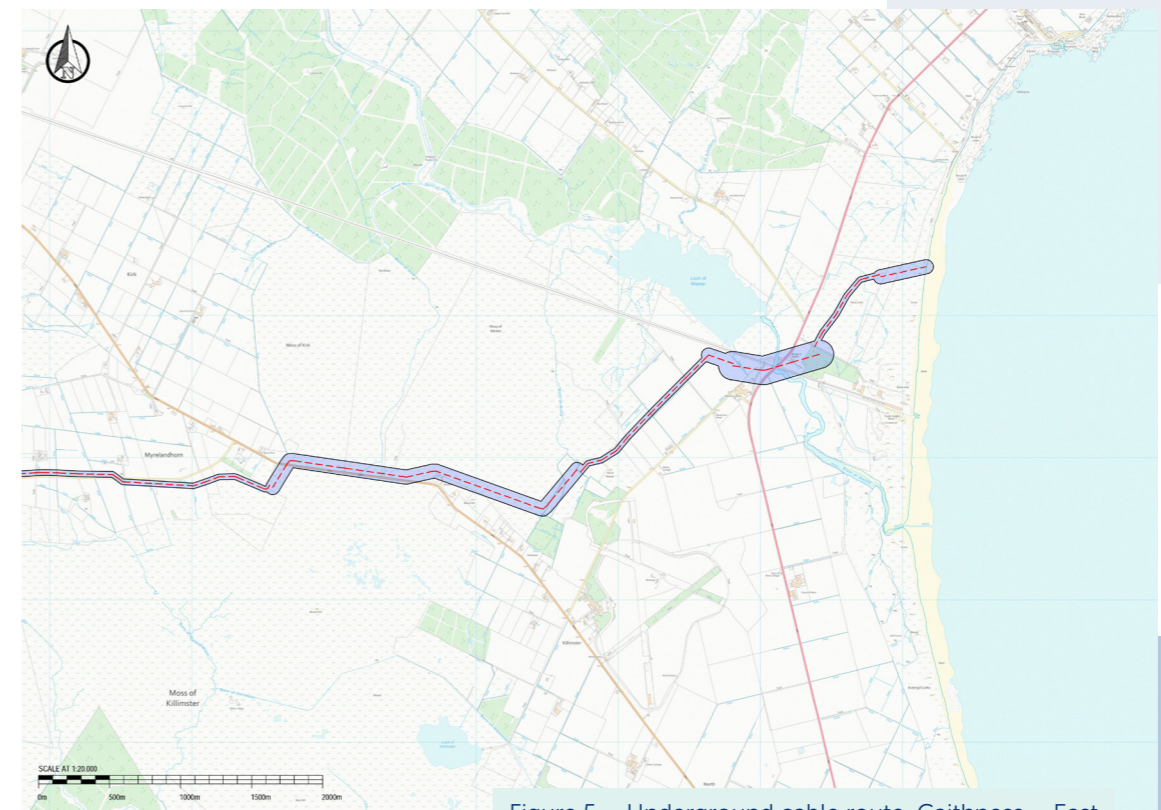
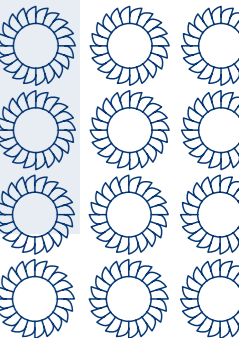


Figure 5 – Underground cable route, Caithness – East



## Aberdeenshire

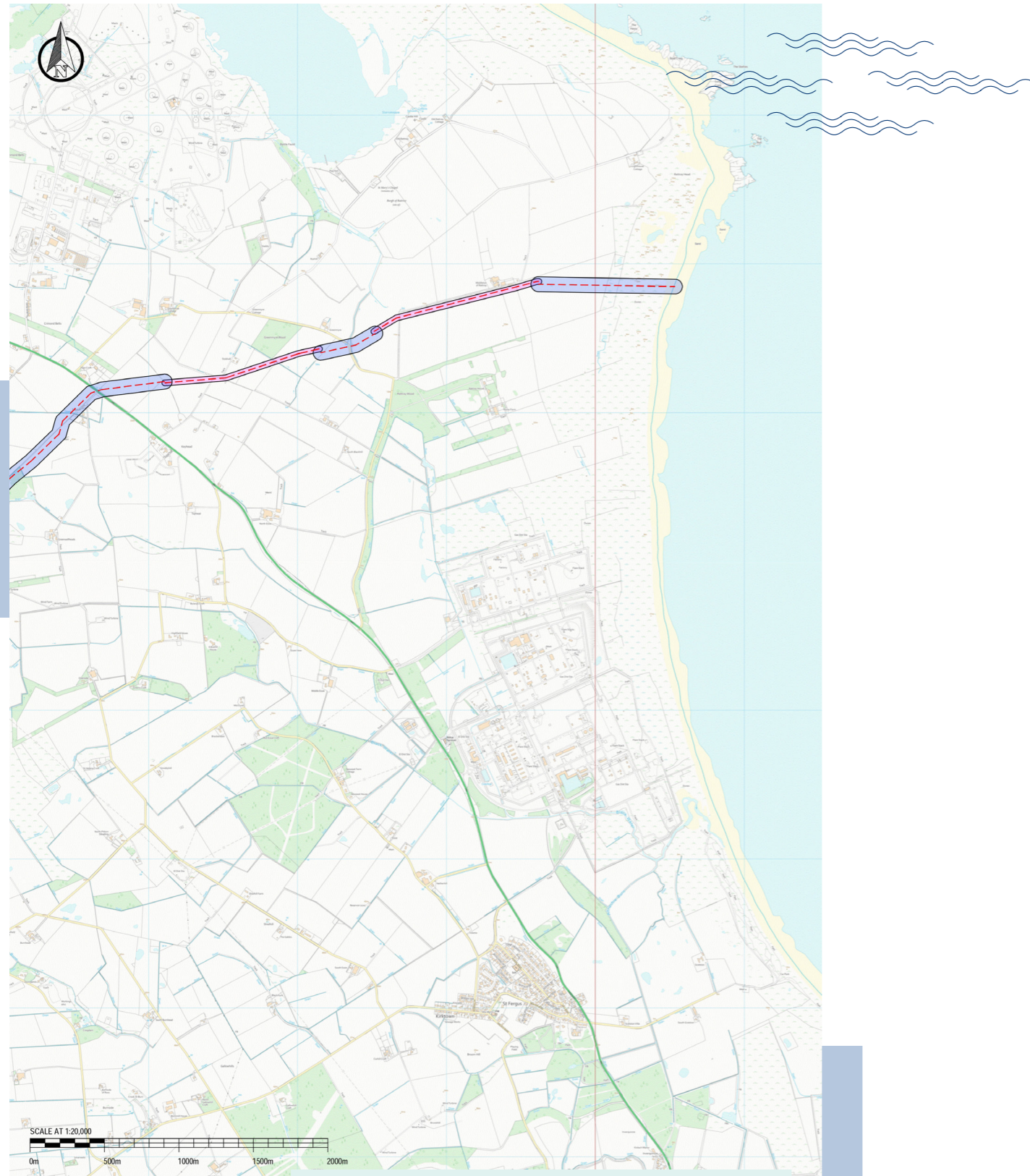


Figure 6 – Underground cable route, Aberdeenshire – North

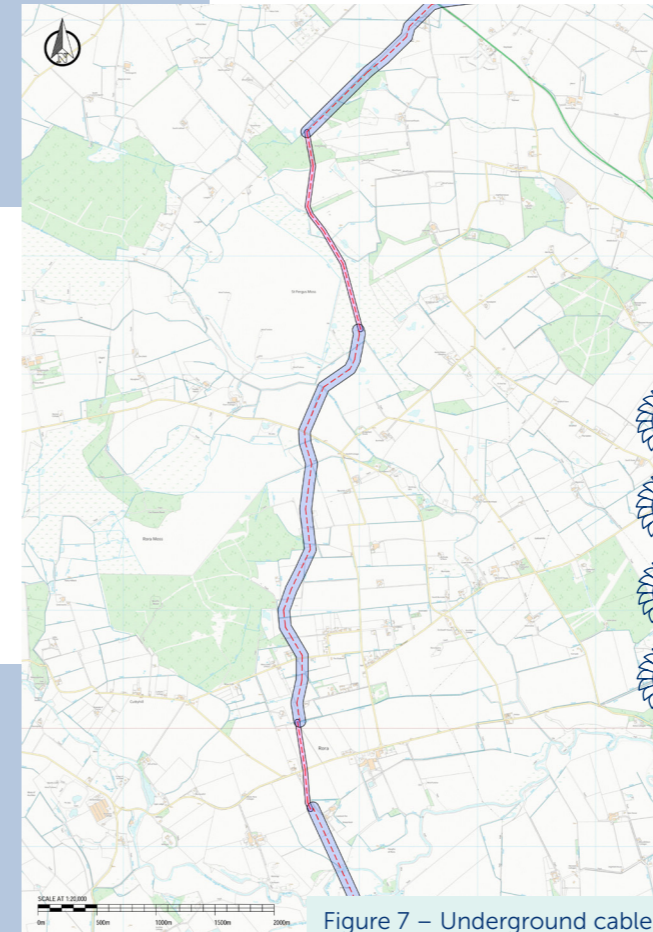


Figure 7 – Underground cable route, Aberdeenshire – Central

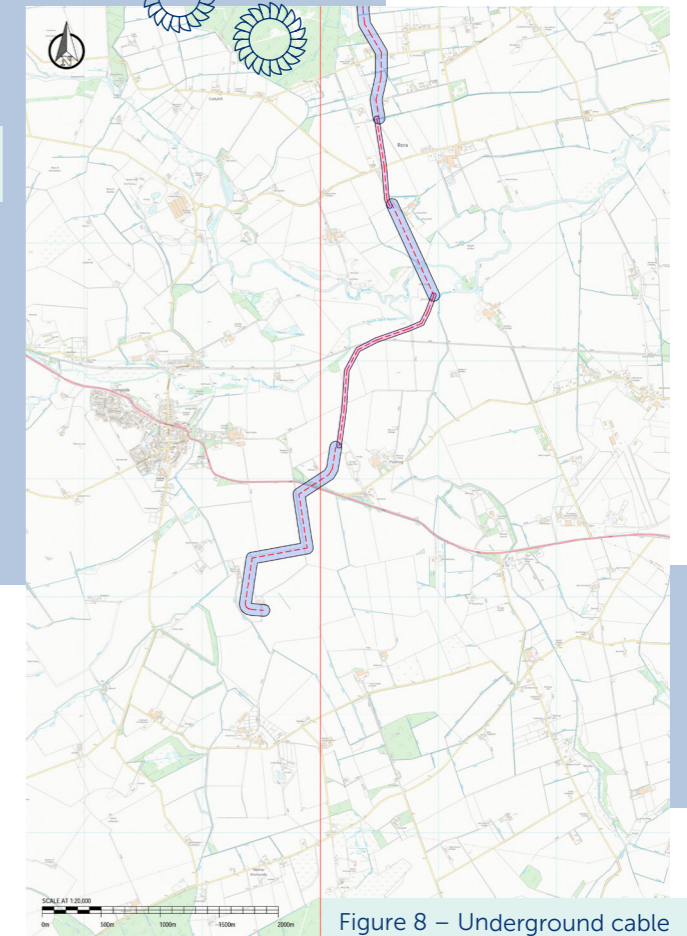


Figure 8 – Underground cable route, Aberdeenshire – South

# Construction

The development of the onshore cable aspect of the project will not commence until we receive approval of the Marine Licence Application for the offshore works. We are scheduled to submit our Marine Licence application in January 2025 with an anticipated approval of this application by November 2025.

If successful, the onshore cable installation is expected to begin in 2026 and be complete by 2030.

## Construction methods

The construction will be undertaken in stages. Prior to any cable installation, accesses will be formed from public roads where required. Some of these accesses may be retained permanently with the majority expected to be temporary.

From these accesses a temporary road of either stone or matting will be created allowing the cable trench to be excavated.

Once excavated a series of ducts for each of the assets will be laid side by side and then surrounded in a robust backfill material such as CBS (Cement Bound Sand) to protect them from any external forces they may encounter. Following installation of the ducts, the surface of the ground is reinstated in accordance with landowner's agreement.

Along the route there will be areas where each of the cable sections will be jointed. This is something that is subject to ongoing and detailed design, however in these areas there will be open excavations where each cable will enter the duct and pulled via a winch to the next joint bay.

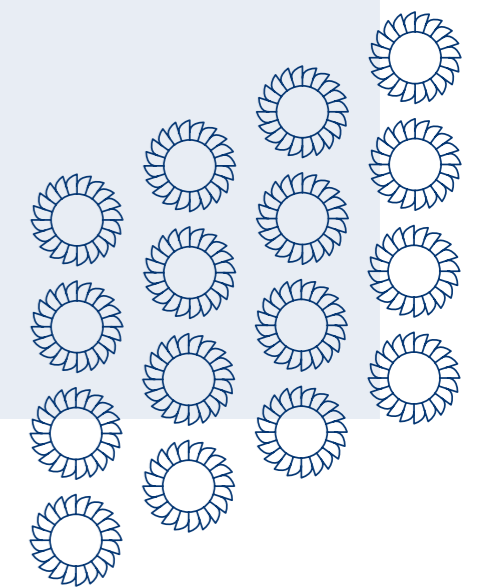
Once cables have been jointed and the system has been tested, these joint bays will also be backfilled and reinstated. In some instances, there will be a permanent link box above ground. These will be in a mutually suitable area for both our own operations team and the landowner and will be fenced off with stock proof fencing.

It may be necessary for our fibre optics to also have similar jointing locations however it is not likely for any link boxes to be required.



In some more technically challenging areas, we may need to cross existing utility assets (e.g. gas pipelines, trunk roads and railways) or environmentally sensitive habitats such as rivers or peatland. It is yet to be fully determined if the standard laying methodology described on the previous page can be applied in any of these scenarios but an alternative method under consideration is known as HDD (Horizontal Directional Drilling). Where necessary to HDD, it is the intention to drill and insert ducts at greater depths minimising impact to the environment.

Where HDD is present, a drilling rig will be located within a hard standing compound. The preparation of this hard standing will likely require the import of stone or other hard materials which will later be removed with a view to full reinstatement of the area again. Note, it is likely that a joint bay will be present in this HDD area.



# Environmental considerations

Throughout the development of the cable route, including the initial identification of suitable corridors and the ongoing refinement process, the sensitivity of the environment is a key consideration for the project.

Various surveys looking for the presence of protected species and habitats including bats, otters, water vole, birds, peatland etc, have been undertaken and where identified these areas have been considered as constraints that the project has tried to avoid.

Despite the project team being able to avoid a huge majority of these, given the nature of some of these habitats they cover vast areas of land that make it unviable to avoid crossing them. In these cases, it is imperative that the project mitigates any impacts that it is likely to have through construction methods.

Many of these mitigations require input from our contract partners and the specifics of how we will manage the installation in these areas remains under consideration.

The nature of our cable installation means that although we will create some short-term damage to the land, the design allows the ground reinstatement to minimise any impact.

As we expand the transmission network in the north of Scotland, we have a responsibility to design and build our projects to protect and enhance the environment. Read more about how we minimise the potential impacts from our activities and achieve Biodiversity Net Gain (BNG) on our project webpage or by scanning this QR code.



Scan this QR code to read more about how we minimise impacts from our activities and achieve Biodiversity Net Gain.

[ssen-transmission.co.uk/legacy-benefits](https://ssen-transmission.co.uk/legacy-benefits)



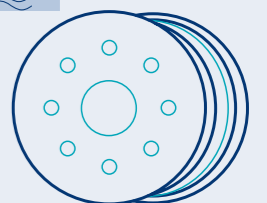
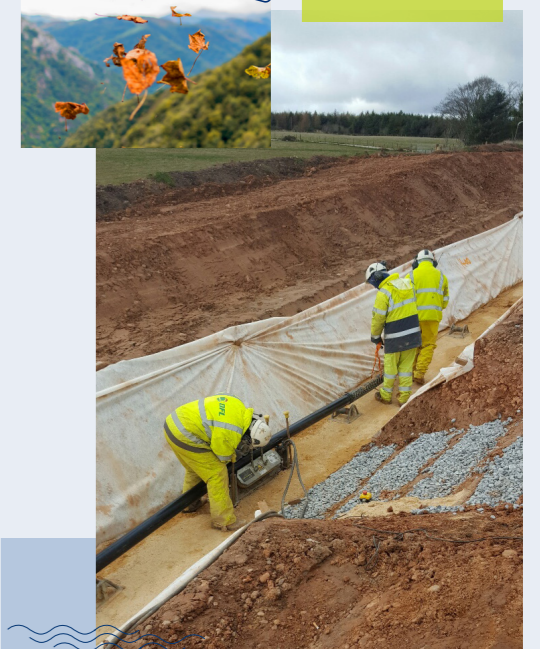
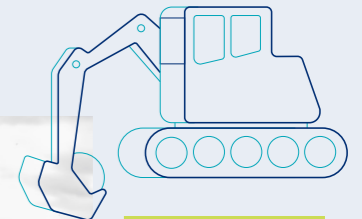
# Engineering considerations

There are various engineering aspects to take into consideration when developing a cable route. Whilst there are different techniques to install cables there are still preferences to de-risk the installation, to minimise impact to the environment and to ensure a quality asset that will meet the intended lifespan.

Our ground investigation works give particularly good information for us to decide what method we choose and the route we take.

Below are some examples of technical challenges we take into consideration:

- Cable bending radii**  
 The cables have limited bending ability so sharp angles either on the horizontal or vertical axis can cause problems when installing and if the design parameters are exceeded, there is a risk to the cable integrity.
- Thermal properties of soils**  
 All electricity cables generate heat to some extent. If the soils around the cable do not allow the heat to dissipate then this can impact on the ability to run the cable at its intended capacity.
- Ground conditions**  
 It is typically favoured to put a cable through arable farmland as this is usually the best soil conditions with enough soil to bury in. If we encounter shallow rock for example, this means we will need to do more work to get the ducts and cables in the ground.
- Access**  
 The project will require large vehicles to carry plant and the cable drums. Access into the cable site can be limiting so where possible we try to stay close to main roads where access can be easier achieved without causing issues on minor or single-track roads.
- Drilling**  
 In areas such as utility or river crossings where we anticipate HDD is required, we must consider the available area of land for drilling platforms, the ground conditions for drilling and the angle of the drill to crossing the utility. In some cases (eg gas pipelines), it is important that crossings are close to a 90-degree angle to minimise any impact.



# Working with landowners, occupiers and other stakeholders

Throughout the corridor selection and route refinement journey we have had numerous discussions with landowners, tenants, residents and other stakeholders directly impacted. It remains important to have all our stakeholders up to date on our progress, to be engaged in our discussions and to understand any concerns or issues that they may have, allowing us the opportunity to address these issues in whatever way is appropriate. These ongoing discussions are key to us finding a route that is acceptable to all and allows voluntary agreements to be reached.



More information on how we work with landowners is available at [ssen-transmission.co.uk/landowners-and-occupiers](https://ssen-transmission.co.uk/landowners-and-occupiers) or by scanning this QR code.



We understand that works of this nature can be disruptive to the local community, and we are committed to keeping local residents informed, which is why we are sharing the latest alignment today.

This is the last of our planned information events before the construction begins in 2026, subject to the outcome of our Marine Licence application, however we will continue to provide updates onto our project's webpage:

[ssen-transmission.co.uk/spittal-peterhead-subsea-cable-link](https://ssen-transmission.co.uk/spittal-peterhead-subsea-cable-link)

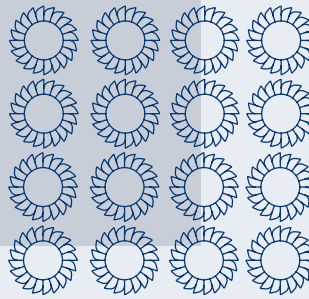




# If you have questions

If you would like to be kept informed about this project, please register using the “Register for Project updates” section on our project webpage.

Thank you for taking the time to read this information booklet. If you have any questions about the project or information that you believe would assist the planning and delivery of this project, then please email or write to the Community Liaison Manager by **15 October 2024**.



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

Gillian Doig

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## Additional information:



Find out more, register for project updates and get in touch by scanning the QR code or visit the project website at:

[ssen-transmission.co.uk/spittal-peterhead-subsea-cable-link/](https://ssen-transmission.co.uk/spittal-peterhead-subsea-cable-link/)

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