



Western Isles Connection into Fanellan Converter Station

The Western Isles is home to some of Scotland's greatest renewable energy resources, particularly onshore and offshore wind. As the existing Western Isles electricity network is at full capacity, no new electricity generation can connect without significant network reinforcements.

The Western Isles HVDC (high voltage direct current) project has been in development since the early 2000s. The project was originally proposed to be a 600MW 320kV Symmetrical Monopole link, between Arnish Point (Stornoway) and Beauly.

This 600MW project was well developed, with supply chain engagement concluded in 2019. Unfortunately, the project did not proceed due to lack of commitment from Ofgem and with some of the onshore wind farm developers failing to secure Contracts for Difference (CfD).



Where We are now

The Western Isles does not currently have a transmission connection to the Scottish Mainland and in July 2022, National Grid Electricity System Operator's Holistic Network Design (HND) confirmed the need for a new 1.8GW HVDC link from the Western Isles, replacing the historically consulted upon 600MW HVDC link. Ofgem approved the need for this as part of their Accelerated Strategic Transmission Investment framework decision, meaning regulatory approval has now been secured.

This connection is required to connect wind power in and around the Western Isles to the GB transmission system, maximising the significant renewable potential and allowing the transmission of the new renewable energy sources.

The Western Isles connection project will also enhance local network reliability and security of supply, reducing reliance on diesel powered electricity generation at Battery Point in Stornoway.



New Fanellan 400kV substation and converter station

The proposed new Fanellan substation and converter station is a strategic development which is required in the Beaully area. It will provide connections for the Western Isles Connection project, the Beaully to Peterhead 400kV and the Spittal to Beaully 400kV overhead line projects. In addition, a section of the existing Beaully to Denny overhead line near Fanellan will be diverted around the new 400kV substation and converter station and will tie-in to the substation.

A joint site solution

A new converter station is required to connect the Western Isles onto the UK transmission network.

As a result of feedback following our events last March 2023, alternative sites were explored. Following extensive studies and assessments it was concluded that the proposed Fanellan site, formerly referred to as the New Beaully Area 400kV substation and converter station, is the optimum site to take forward for design development for both the substation and the converter station.

The advantages of this co-located site are the avoidance of the AC (Alternating Current) connecting cables and reduced visual impact from co-locating this new infrastructure in one location.

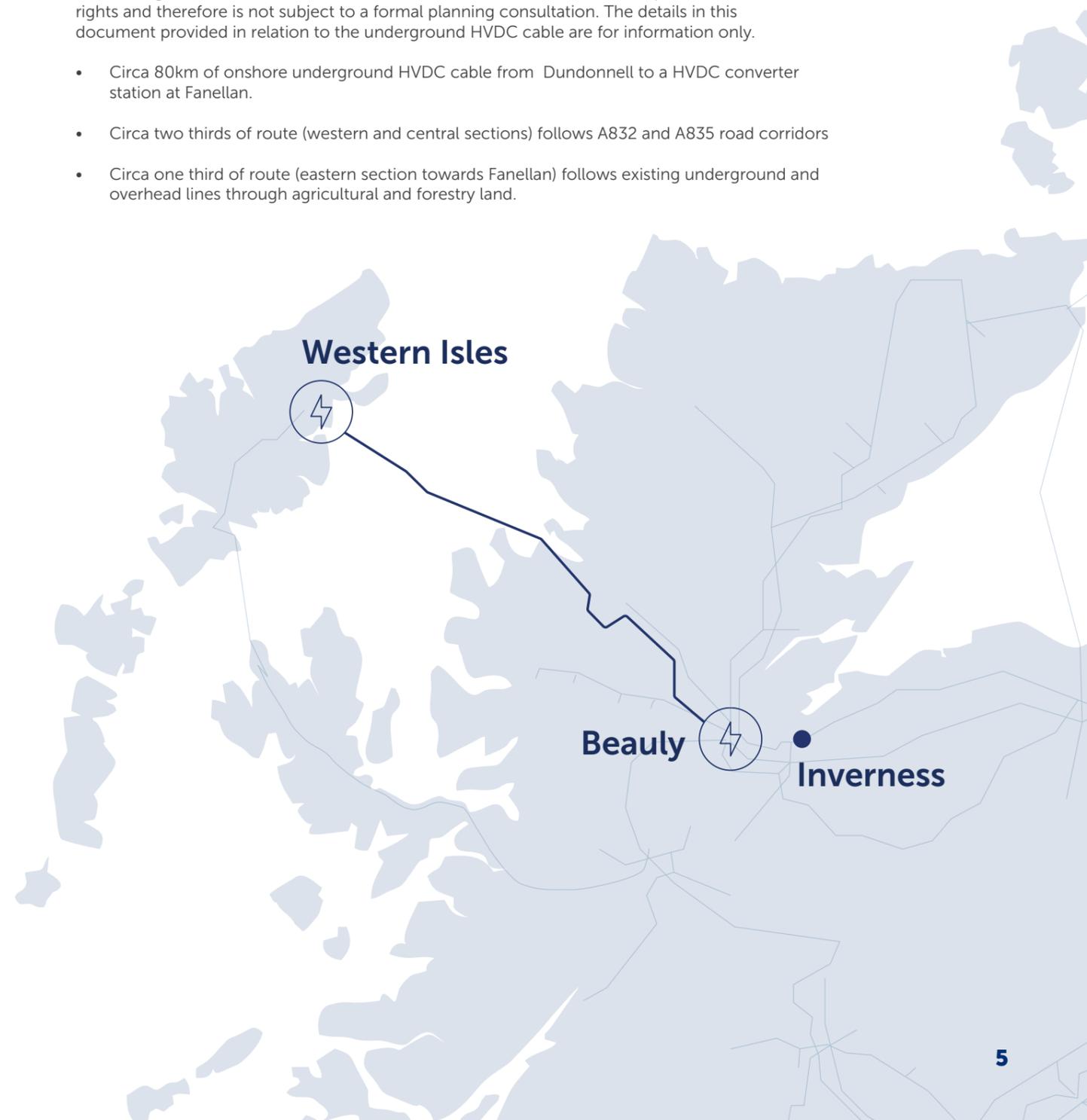


Summary of Mainland Cable Route

Permitted Development Rights

The underground HVDC Cable will be installed under our Permitted Development rights and therefore is not subject to a formal planning consultation. The details in this document provided in relation to the underground HVDC cable are for information only.

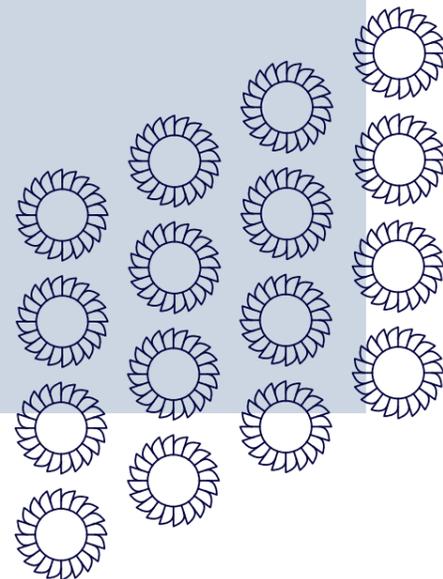
- Circa 80km of onshore underground HVDC cable from Dundonnell to a HVDC converter station at Fanellan.
- Circa two thirds of route (western and central sections) follows A832 and A835 road corridors
- Circa one third of route (eastern section towards Fanellan) follows existing underground and overhead lines through agricultural and forestry land.



Project Construction

Typical Cable Trench Information

The typical HVDC cable trench is approximately 1.4m wide x 1.4m deep and contains 2 x 250mm dia ducts for the positive and negative power cables, plus 1 x 110mm dia duct for the fibre optic control cable. These details are an estimate and will be subject to the detail design by our cable manufacturer. Typical installation photos from a previous similar project are shown here. Undergrounding of HVDC cables requires a significantly smaller construction footprint in comparison to 400kV overhead lines, including less engineering challenges and less additional associated infrastructure.



Horizontal Directional Drilling (HDD)

HDD is a common trenchless construction method used as an alternative to traditional trenched method for installing pipelines and cables in sensitive or congested areas, below surface infrastructure and natural features. Use of HDD helps to minimise negative impacts to sensitive areas from pipeline and cable installation operations. The image below shows the proposed HDD under the River Beauly that is planned to be undertaken to connect to the Fanellan site. Final location and details to be determined during the detailed design stage.

What happens next?

We are currently engaging with affected landowners whilst we work to finalise the underground cable route. Once the cable route has been determined, we will ensure this is available on the project webpage and we will engage with any impacted communities ahead of construction commencing (anticipated early 2026).

Contact Us

The best way to contact us regarding this project is through our Community Liaison Team.



Sally Cooper
10 Henderson Road,
Inverness, IV1 1SN



07918 470 281



fanellanengagement@sse.com



@sentransmission



@SSETransmission

For information on how we collect and process your data, please see our privacy notice, www.ssen-transmission.co.uk/privacy. If you do not have access to our website or would like a hard copy sent, please contact us. You can unsubscribe at any time from receiving emails by contacting stakeholder.admin@sse.com

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 <https://www.ssen-transmission.co.uk/AIFAQ>



Scottish & Southern
Electricity Networks

TRANSMISSION