NORTHCONNECT

CONNECTING RENEWABLES

Cable Route Design

A corridor between the UK and Norway has been identified taking a number of aspects into consideration including;

> Physical characteristics of the cable;
> Existing infrastructure including pipelines, cables, and offshore installations;
> Bathymetry;
> Seabed geology and sediment characteristics;
> Commercial fisheries, shipping and navigation;
> Cultural heritage and marine archaeology;
> Benthic ecology and habitat types, including fish spawning grounds; and
> Designated sites and protected habitats.

The exact route that the cables will take within the corridor across the North Sea to Simadalen in Norway has yet to be determined. The final cable route design will take into account input from stakeholders and results of a detailed subsea survey.

Subsea Survey

UK nearshore subsea survey work, within the Buchan Ness to Collieston Special Protection Area, will be undertaken in winter 2016/17 to avoid the bird breeding season. Offshore surveying will be undertaken in Summer 2017.

The marine cable route survey will include geophysical, geotechnical, and benthic ecology investigations. The geophysical investigations utilise multi-beam echo-sounders, side scan sonar, gradiometers, sub-bottom profiling and underwater photography. The geotechnical investigations will incorporate vibro or gravity coring, and cone penetration tests, while grab samples will be taken for the benthic analysis. All survey operations will be conducted by a specialised offshore survey vessel, and will include the use of remotely operated vehicles and towed equipment.

The cable route survey will provide information to support the assessment of marine effects on commercial fisheries, ecology, archaeology, seabed and water quality. The outputs of the survey will also aid in the identification of offshore cable protection requirements and appropriate installation technique selection.

Further information with regard to the subsea survey will be provided on www.northconnect.no and by notice to mariners prior to works commencing.

Contact Details

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For more information on the project please visit: www.northconnect.no

What is NorthConnect ?

NorthConnect is a commercial venture set up to develop, build, own and operate a High Voltage 'Interconnector'.

The 1.4 gigawatt interconnector will provide an electricity transmission link between Scotland and Norway.

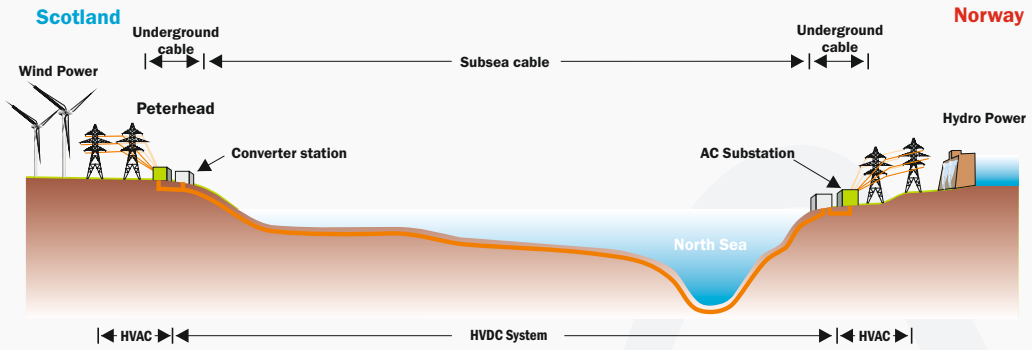
Electricity can be transmitted in either direction across the North Sea.

Project Need

Norwegian electricity is primarily from hydro-electric sources, while Scotland and the UK have an increasing proportion of wind power in their energy mix.

NorthConnect will connect the two complementary and previously disconnected power systems of Scotland and Norway, helping both to balance the grid between the two countries, and allowing wider trading across Europe.

This will ensure security of supply and stabilise electricity prices for consumers.



Components

The subsea cables are High Voltage Direct Current (HVDC). Direct Current (DC) is utilised as it has lower transmission losses over long distances. The National Grid systems utilise Alternating Current (AC) technology. Interconnector converter stations are therefore required at each end of the HVDC cable to convert the DC electricity to AC and vice versa to allow connection to the National Grid.

There will be two HVDC offshore cables and potentially one ducted fibre optic cable installed on the sea floor. If included, the fibre optic cable will be bundled with one of the HVDC cables and will connect into the existing fibre optic network near Peterhead at the UK landfall.

Project Status

NorthConnect received planning permission in September 2015 for the Interconnector Converter Station on the 'Fourfields' site near Boddam, Peterhead and the onshore HVAC cable route. We are now starting the planning and marine licencing process for the HVDC cables that will transmit electricity between Scotland and Norway under the North Sea.

As part of this process, we will be undertaking a programme of public consultation and completing an Environmental Impact Assessment. Planning permission will be sought from Aberdeenshire Council for the onshore HVAC cable route to the converter station, and a Marine Licence will be sought from Marine Scotland for the cable route in UK Waters.

Similar permissions will be sought for the subsea cables in Norwegian waters, and the converter station at the Norwegian Landfall, in Simadalen.

Offshore Cabling

The cable will make landfall in Scotland in the vicinity of Long Haven Bay, the exact location will be determined through surveying and consultation.

Horizontal Directional Drilling (HDD) will be utilised to provide a ducted cable run from the cliff tops in the vicinity of Long Haven Bay out into the North Sea in order to connect the onshore and offshore cable routes. The HDD exit point will be located on the seabed between approximately 200–800m offshore; depending on the geological conditions encountered, and the equipment utilised.

In UK waters the cables will be protected from scour and fouling predominantly through trenching to a depth of approximately 1m–1.5m. Where trenching is not possible due to ground conditions or existing infrastructure, physical protection will be installed to protect the cables.

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UK Interconnector Converter Station