

Interconnecting the Netherlands and UK power grids BritNed HVDC submarine cable link



- An important step towards a common European energy market
- Enables the UK and Netherlands electricity markets to operate more efficiently
- Power can be transferred in either direction to meet peak period demand

Scope of supply

- Project management
- HVDC cable system design
- Type testing
- Mass impregnated cables, accessories
- Civil works
- Onshore and offshore laying and installation
- Testing and commissioning

Cable data

Voltage	450 kV DC
Power	1,000 MW
Length	494 km submarine MI cable (Cu) 18 km underground MI cable (Cu)
Customer	BritNed Development Ltd National Grid (U.K.) and TenneT (the Netherlands)
Completion	2010



BritNed is one of the largest power transmission projects ever undertaken in Europe. Completed in 2010, it is one of the European Union's TEN-E priority projects for securing energy supply by strengthening power transmission capacity and creating a trans-European energy network.

The BritNed cable connects the UK with continental and northern Europe and further integrates the UK power grid with the rest of Europe. The link operates as a commercial, open-access interconnector and enables customers to buy capacity through a combination of implicit and explicit auctions. BritNed is an important step towards a single energy market in northwest Europe and enables the UK and Netherlands electricity markets to operate more efficiently and respond rapidly to changing market conditions.

BritNed is a 50-50 joint venture between the Dutch and UK transmission system operators, TenneT and National Grid.

Why ABB?

ABB was selected by TenneT and National Grid for its long and outstanding track record in designing and delivering complex HVDC projects worldwide.

ABB has previously executed cable projects on behalf of both customers. For TenneT, ABB supplied converter stations and cable systems for the NorNed HVDC link between the Netherlands and Norway, which was commissioned in 2007. At 580 kilometers, NorNed is the world's longest submarine high voltage cable.

ABB pioneered commercial HVDC technology in 1954 and has since delivered more than 50 percent of the world's HVDC projects.

Scope of supply

ABB supplied a complete HVDC cable solution including cable system design, 450 kV DC submarine and underground cables, cable accessories, submarine and underground cable laying, civil works, trenching, installation, testing and commissioning.

Cable route and installation

BritNed is a bipole HVDC interconnector consisting of two high voltage mass impregnated cables bundled together and buried below the bottom of the North Sea.

The cables deliver 1,000 MW of electric power along a distance of 256 km between AC-DC converter stations on the Isle of Grain in England and Maasvlakte in the Netherlands. Power can be transferred in either direction to meet peak period demand (there is a one hour time difference between both countries) and enable efficient response to market conditions like supply/demand imbalances and price differentials.

ABB's award-winning expertise in executing cable projects in environmentally sensitive areas was an important factor in the customers' selection of cable supplier. Impact on the complex sediment dynamics and seabed topography of the North Sea was minimal. Onshore cable work was restricted to specific times of the year to protect the flora and fauna of coastal breeding grounds and species habitats.

Customer benefits

- Complete turnkey solution from one supplier
- All cable components and accessories manufactured by ABB
- Supplier expertise and reliability – ABB is a market and technology leader in both HVDC solutions and high voltage submarine and underground cables

For more information please contact:

ABB's high voltage cable unit in Sweden

Phone: +46 455 556 00

Fax: +46 455 556 55

E-Mail: sehvc@se.abb.com

www.abb.com/cables