

Connecting the power grids of Ireland and Great Britain

EirGrid East-West Interconnector HVDC Light® link



- Secure Ireland's future energy supply
- Facilitate growth and integration of renewable energy
- Increase competition in the energy market
- Allow the import and export of electric power

Scope of supply

- Turnkey HVDC Light transmission system
- HVDC converters
- Project management
- HVDC Light cable system
 - Cable system design, engineering and manufacture
 - Civil works, installation and cable laying
 - Cable joints, transition joints and terminations
 - Testing and commissioning

Cable data

	HVDC Light interconnection between Ireland and Wales
Capacity	500 MW
DC voltage	± 200 kV
AC voltage	400 kV
Cable length	2 x 186 km submarine HVDC Light cable (Cu) 2 x 76 km underground HVDC Light cable (Al) 3 x 3 km underground AC cable (Al)
Customer	EirGrid, Ireland
Completion	2012



AC-DC converter stations, low cable and converter losses, and black start capability (the ability to rapidly restore system operations in the event of a system-wide power outage). HVDC Light also offers a unique raft of environmental benefits, including oil-free cables.

As part of the solution ABB extended the previous rating record for a HVDC Light cable from 150 kV to 200 kV. The higher voltage enables a higher transmission capacity of 500 MW and the ability to power 350,000 Irish or British homes. ABB is now able to offer HVDC Light solutions with a rating of up to 320 kV and a capacity of 1,200 MW.

ABB delivered the world's first commercial HVDC installation in 1954 and the world's first HVDC Light installation in 1997. In all, ABB has won orders for more than 70 HVDC projects worldwide, with a total transmission capacity of around 60,000 MW.

Customer needs

The EirGrid East-West Interconnector Project (EWIP) is a European Union high-priority energy infrastructure project to facilitate the cross-border transportation of power between member states in order to create a single, competitive European electricity market and secure energy supply throughout the union.

The interconnector is also a strategic project of the Irish Government to ensure that electricity supply consistently meets demand and that Ireland will produce at least one-third of its electric power by renewable resources by 2020.

By connecting to the British grid, Ireland will gain access to the European transmission network and respective markets via similar interconnectors between England and the continent. The interconnector will enable Ireland to import and export power to and from Britain, thereby creating a more competitive home market and reducing consumer prices. It will also help Ireland meet its 'green energy' targets by encouraging the development of wind power and other renewable types of energy.

The interconnector is owned and operated by EirGrid, the Irish state-owned energy company and transmission system operator.

Why ABB?

ABB's ability to provide a complete interconnector solution using proven high-voltage direct current technology was a key factor behind EirGrid's choice of supplier.

HVDC Light is an ABB technology for connecting transmission systems using submarine and underground cables. It offers a number of compelling benefits, including highly compact

The ABB solution

The EirGrid East-West Interconnector links the high-voltage power grids of Ireland and Great Britain by means of an HVDC Light interconnection. Power can be transferred in either direction.

The solution comprises two HVDC Light converter stations, one at Woodland Co. Meath, near Dublin in Ireland and the other at Deeside in Wales. These are linked by two parallel 186 km submarine DC cables, two parallel 46 km DC underground cables in Ireland and two parallel 30 km DC underground cables in Wales, all with a rating of ± 200 kV. The DC power is converted to AC power in the converter stations and fed by three 3 km 400 kV AC cables into the respective power grids.

ABB is responsible for delivering the entire solution. On the cable side, ABB's scope of supply includes design, engineering, type testing, manufacture, civil works, cable laying, jointing, trenching, installation and commissioning.

Customer benefits

- Complete HVDC solution from one supplier
- Supplier expertise and reliability – ABB is the market and technology leader in HVDC and grid interconnections
- Access to ABB's project management expertise, customer support and HVDC research facilities

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