Key Facts

Client: Svenska kraftnät, Sweden and Litgrid AB, Lithuania
Location of the project: The Baltic Sea (Sweden-Lithuania)
Quantity of order: Turnkey ±300 kV DC cable system solution with a 700 MW power rating

Scope
- HVDC cable system, including 2x400 km XLPE submarine HVDC cable, 2x40 km XLPE underground HVDC cable and 2x13 km XLPE underground HVDC cable
- Cable system design and engineering
- Cable system manufacturing
- Submarine and underground cable-laying and installation
- Project management, testing and commissioning

Location

NordBalt cross-border transmission

The power grids of the Baltic and Nordic countries are connected by a cable system from NKT.
Strengthening electricity supply.

The NordBalt HVDC energy transmission link increases capacity and grid reliability, and simplifies power exchange on both sides of the Baltic Sea.

The project
The NordBalt HVDC link interconnects the power grids of Lithuania, Latvia and Estonia with those of the Nordic countries.

NordBalt is a joint project of the Swedish and Lithuanian TSOs (transmission system operators) Svenska kraftnät and Litgrid AB. It is part of Lithuania’s long-term strategy to secure its energy independence by interconnecting the power grids of the Baltic countries with other grids. It also strengthens the power supply in southern Sweden.

The interconnection enables the emerging electricity market of the Baltic countries to integrate with other electricity markets. This improves competition and provides alternative sources of electric power.

The sea crossing calls for a secure and environmentally friendly HVDC cable system installation for connecting the transmission systems. This is important since the cable route passes through former mined areas and explosives dumping grounds as well as a Natura 2000 nature protection area on the Lithuanian side.

The solution
We provided a HVDC cable interconnection for the transfer of power in either direction between the two power grids on each side of the Baltic Sea.

The cable system with submarine and underground cables offers several special features and compelling environmental benefits, including low losses, network stability, neutral electromagnetic fields, oil-free cables and minimal visibility. It is also designed for integration into a future pan-European grid.

Our solution is built on extensive knowledge and experience, and includes system design and engineering, onshore and offshore installation, testing and commissioning.

The cable system has a power rating of 300 kV. It comprises a 2x400 km long HVDC submarine cable across the Baltic Sea, a 2x40 km HVDC underground cable to Nybro on the Swedish side and a 2x13 km HVDC underground cable to Klaipeda on the Lithuanian side. At the time of installation, it was by far the world’s longest extruded power cable system.