Subsea Power Cables

Cables for offshore windfarms and platforms
ABB is one of the world’s most experienced manufacturers of large subsea power cables. The know-how that we have acquired from installing subsea transmission cable interconnections around the world is now a valuable asset for the offshore wind, gas and oil industry. ABB has proven its capability to design and install an optimal cable system for a diverse set of applications, taking into account production costs, installation costs, power losses and operational costs.

ABB has the know-how and resources to provide a complete set of services from design to commissioning.

- Cross-linked polyethylene (XLPE) cable systems for AC
- HVDC Light® cable systems for DC
- Mass-impregnated paper-insulated (MIND) cable systems for DC
- Cable accessories
- Offshore cable laying, installation, burial and protection
- Project management and commissioning

**XLPE Subsea Cables**

ABB furnished XLPE cables are proven to be highly reliable. XLPE cables possess high chemical resistance to oil and solvents, excellent tensile strength and high abrasion resistance. The cables can withstand high short-circuit temperatures and the dimensional stability above 90°C is very good. XLPE cables also have a high AC voltage breakdown strength.

**ABB Experience**

ABB has manufactured XLPE cables since the late 1960s and has delivered more than 3,000 km of polymeric insulated subsea cables. We performed our first subsea installation in 1953, and in 1973 we connected the Finnish island of Åland to the Swedish mainland with three 55 km long XLPE cables rated at 84 kV.

**Quality & Environment**

There is a worldwide focus on environmental issues. Governments and power suppliers are supporting renewable energy sources such as wind power and oil/gas companies are substituting less efficient and CO₂ emitting gas-turbine generation on platforms with power supplies from the mainland. This has led to an increasing world-wide demand for subsea cable solutions with less environmental impact.

Health, safety and environmental issues are of great importance to ABB. Our cable projects are delivered and installed in a safe and orderly manner without endangering people, materials or nature. ABB standards are fully adapted to offshore requirements and meet the requirements from the most demanding offshore oil companies such as Statoil and Saudi Aramco.

ABB has well-developed quality and environmental systems which are certified according to ISO 9001 and 14001. Our quality and environmental management systems are tools designed to successfully fulfill the requirements of customers, regulatory agencies and other government authorities, and the internal requirements of the ABB Group.
**Some of our references**

**AC cable offshore applications:**
- **Gjøa Offshore Platform, Norway**
  98 km, 40 MW, 115 kV shore connection power cable to floating platform. Cu conductors integrated optical fiber cable.
  Customer: Statoil
- **Thornton Bank Offshore Wind Farm, Belgium**
  38 km, 150 MW, 170 kV shore connection power cable with Al conductors and integrated optical fiber cable and 4 km 36 kV inter-turbine cables with Al conductors and integrated optical fiber cable.
  Customer: C-Power NV
- **Q7 Offshore Wind Farm, the Netherlands**
  28 km, 120 MW, 170 kV shore connection power cable with Cu conductors and integrated optical fiber cables and 40 km, 24 kV inter-turbine cables with Al and Cu conductors and integrated optical fiber cable.
  Customer: Q7 Holding/ENECO
- **Lillgrund Offshore Wind Farm, Sweden**
  33 km, 110 MW, 145 kV shore connection power cable and 36 kV interturbine cables with Cu conductors and integrated optical fibers.
  Customer: Siemens Wind Power
- **Burbo Banks Offshore Wind Farm, UK**
  40 km, 90 MW, 36 kV inter-turbine and shore connection power cables with Cu conductors.
  Customer: Seascape Energy Ltd.
- **Abu Safah Oil Field, Saudi Arabia**
  50 km, 52 MVA, 115 kV shore connection power cable with Cu conductors.
  Customer: Saudi Aramco
- **Yttre Stengrund Offshore Wind Farm, Sweden**
  22 km, 10 MW, 24 kV inter-turbine and shore connection power cables with Al conductors and integrated optical fibers.
  Customer: Enron Wind GmbH
- **Utgrunden Offshore Wind Farm, Sweden**
  11 km, 10 MW, 24 kV inter-turbine and shore connection power cables with Al conductors and integrated optical fiber cable.
  Customer: NEG-Micon
- **Samsø Offshore Wind Farm, Denmark**
  7.5 km, 20 MW, 36 kV inter-turbine and shore connection power cable with Cu conductors integrated optical fiber cable.
  Customer: Samsø Havvind A/S
- **Nysted Offshore Wind Farm, Denmark**
  55 km, 165 MW, 36 kV inter-turbine power cables with Al- and Cu conductors and integrated optical fiber cable.
  Customer: ENERGI E2, Sydkraft, DONG

**DC cable offshore applications:**
- **NordE.on 1 Offshore Wind Project, Germany**
  2x125 km, 400 MW, +/-150 kV HVDC Light® submarine power cables with Cu conductor and 2x75 km, 400 MW +/-150 kV HVDC Light® underground cables with Al conductors.
  Customer: E.ON Netz GmbH
- **Troll A Offshore Gas Field Platform, Norway**
  4x68 km, 2x40 MW, +/-80 kV HVDC Light® submarine power cables cables with Cu conductors.
  Customer: Statoil SF
ABB's high voltage cable unit in Sweden
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For additional information please contact your local ABB Sales Office.

Brochure issued by: