High-voltage cable systems

Services for cable systems

Industrial Technologies

SIEMENS
High-voltage cable systems

In 1867, Werner von Siemens recognized that “Technology now has the means at its disposal to produce electric currents of unlimited power in a cheap and convenient fashion where the working force is available. This fact will be of considerable significance in several technical fields.”

Ever since, Siemens has consistently focused on the efficient distribution of electric power by means of cable systems. That mission has not changed to this day.

Your need

The backbone of the electric power supply consists of high-voltage cable systems. Solutions of increasing technical sophistication are required in megacities as well as for the development of the power supply in emerging nations.

The limited availability of space and other external factors that restrict the load-carrying capacity of cable systems call for special measures so that the reliable transmission of electric power can be guaranteed.

At the same time, highly specific requirements for the expansion of transmission networks are appearing in Germany and worldwide as a result of the integration of renewable energies.

Our solution

As your partner, we offer the full range of services for high-voltage cable systems up to 500 kV from a single source, starting with engineering of the cable dimensions up to the final test after installation.

Backed by over 150 years of experience, we have an excellent overview of the entire market and can offer you vendor-neutral advice and support for entire systems and accessories.

We employ technologies and high-grade materials matched to your needs for all work activities from cable-laying tools to the professional assembly of fittings with cable-sealing ends and joints.

We can also assist you if you are planning to retrofit, convert, or extend your system. And if you intend to dismantle an existing installation, we will manage the disposal or recycling of cables and cable fittings. Performing all our work activities in accordance with national and international regulations and guidelines is mandatory for us.
Your advantages

- You will receive a technically and commercially optimized vendor-neutral solution
- You will profit from our experience collaborating with international contractors on project management and documentation
- You will benefit from our longtime experience in developing complex engineering solutions
- You can rely on short reaction times for clearing faults

Our range of services

- Consulting, preparation of tender documents and project-based specifications
- System engineering, clarification/calculation of mutual interference (as regards EMC and heating) between contract sections on site
- Vendor-neutral consulting and project optimization
- Preparation of complete bids, clarification of interfaces, procurement
- Installation and commissioning of medium-voltage and high-voltage cable systems from a single source in accordance with national and international regulations and recommendations
- Handling of turnkey projects by certified project managers
- Fault diagnosis on existing cable installations, for example, through temperature measurement using thermal imaging camera, TE measurement, or cable oil inspections
- Maintenance, fault location, fault clearance, inspections, modernization, and dismantling of old installations

Our reference

Power supply from underground
We installed a 400-kV cable system between the Berlin Mitte and Friedrichshain substations on behalf of Berliner Kraft- und Licht- Aktiengesellschaft (BEWAG). The 400-kV VPE cables are routed along a 6.3-kilometer tunnel at a depth of up to 30 meters and are cooled by air flow.

Energy backbone for the industry
Siemens implemented three 220-kV systems, 26 110-kV connections, as well as 149 MV connections in the steel plants in Salzgitter and Peine. We were involved determining the cable route, carried out implementation planning and construction site management, calculated the current carrying capacity and pulling force, as well as laid and installed the 220-kV and 110-kV cables. We installed a total of 13 km of 220-kV cable, 46 km of 110-kV cable, and more than 100 km of MV cable, all during ongoing plant operation.

Long cable for Scandinavia
Siemens implemented a 300-kV XLPE cable system with a transmission capacity of 520 MVA between the transformer and gas-insulated switchgear at a combined cycle power plant in southwestern Norway, which is currently Europe’s lowest-emission CCPP. A particular challenge for this project was laying the cable, which weighed 21 kg/m and came in single lengths of 1,350 m.

Power for a boomtown
We laid four cable systems consisting of 400-kV XLPE cables with lead sheathing and copper wire shielding and a total length of 16 kilometers for a combined-cycle power plant in Abu Dhabi. The scope of work also included the installation of the 400-kV cable-sealing ends as well as the 400-kV connection joints in walk-in pits.
More information

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The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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