

Maintenance

Long-term service agreements for HVDC and FACTS facilities

Focus on your core business and have your HVDC and other FACTS systems managed, operated, and maintained by industry experts.

Power electronics-based facilities such as High-Voltage Direct Current (HVDC) and Flexible AC Transmission Systems (FACTS) contribute significant benefits to modern power systems. For example:

- HVDC systems enable the transmission of electrical energy over long distances and allow the asynchronous interconnection of grids.
- FACTS devices increase the reliability of AC networks and help reduce power delivery costs.

Siemens offers a broad array of operation and maintenance (O&M) services and "care-free packages" for these HVDC and FACTS facilities.

We work closely with our customers to develop balanced service packages customized to their specific situation.

We are able to guarantee a defined performance level for the assets (e.g., a given availability), thus enabling the system and the owners to derive maximum benefits from these strategic and high-value assets.

We make sure that our service packages meet the needs and expectations of our customers relative to the technical, financial and regulatory performance of their assets.

# **Operation and Maintenance Contracts**

Siemens provides services for a wide range of facilities, including long distance (overhead and underground/ undersea) and back-to-back HVDC installations, as well as Static VAr Compensators (SVC), synchronous condensers and offshore wind platforms.

The responsibility for the operation and maintenance of these facilities - or specific targeted functions thereof - is transferred to us for a fixed period of time (such as three or more years).

The operational risk is transferred to Siemens and Key Performance Indicators (such as continuity of service or availability) are established to guarantee the agreed technical and budget performance.

Investment decisions and individual core functions may remain with the asset owner or may be assumed by Siemens.

Photo: HVDC Valve Hall

Trust the overall management of your network to Siemens.

## Our core service elements include:

## Operation services

- Control room operation (24/7)
- Remote monitoring
- · Call centers
- · Metering operations
- · Energy management and automation

### Maintenance services

- Field services
- Preventive and corrective maintenance
- Repairs
- · Emergency response
- · Inspection
- · Spare part management

#### Management services

- · Asset strategy planning
- · Asset management
- Development and implementation of management plans, O&M strategies, operation manuals and asset standards
- Risk management and emergency/ business continuity planning
- Environmental, health & safety services

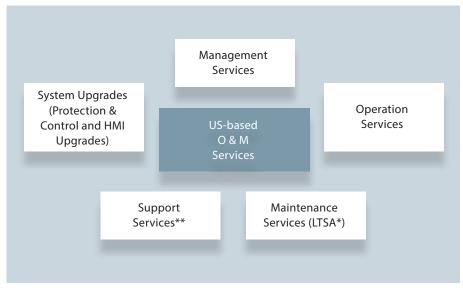
## Special service projects

Commissioning and start-up/takeover services.

## Our value proposition

- Concentrate on your core business

   we manage your network assets
   expertly for you. We bring to the
   table competences that may not be
   present in your organization. You
   can leverage our knowledge and
   expertise to hedge against operation
   and maintenance risks that may not
   be at the core of your business.
- The network operation costs will be predictable and guaranteed. Our service package is truly "care-free." Our operation and management experience, processes and methodologies enable you to increase the profitability and efficiency of your assets.



Siemens tailors the full range of services to your specific needs.

- \* LTSA: Long-Term Service Agreement
- \*\* Including 24/7 call center
- We guarantee our performance, as measured with respect to preestablished KPIs.
- We contribute professionals with many years of experience and qualifications in the utility and infrastructure industries. You can leverage our long-standing worldwide experience in the power delivery industry to optimize all stages of your power delivery network, from transmission to distribution to retailing.

## Expertise you can rely on

- International company with local presence in 190 countries worldwide
- Reliable and financially strong partner for more than 160 years
- Dependable, efficient, and costeffective solutions
- · Wide range of value-added services
- One-stop service throughout the entire business process
- Unparalleled expert knowledge and worldwide experience
- Successful history of long-term business relationships.

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