Siemens Power Technologies International (Siemens PTI)

Network Consulting • Software Solutions • Siemens Power Academy TD

At a glance
Siemens Power Technologies International (Siemens PTI) provides network consulting, network planning software and training on all topics of power transmission and distribution within the Siemens Energy Sector. Around 170 engineers are employed at three main locations in Germany, USA and UK, as well as in several other offices throughout the world, and generate a broad range of solutions in energy supply.

The challenge
In the last decade the electricity supply industry had to face significant changes. The increasing liberalization of energy markets in many countries is redefining the general framework and spurring energy trading. Changes in the generation system due to age-related replacements, decentralized electricity generation and generation from renewable energy sources, have resulted in completely new power flow configurations – and often lead to bottlenecks in the existing networks with their physically limited capacities.

At the same time, there is a growing need for asset replacement due to increasing component service age, and to take advantage of new technologies and concepts, such as compact switchgear or FACTS devices. The increasing capabilities of protection and control equipment open the way towards “smart grids”, where energy end-users will take an active role in the electricity market.

These modified general conditions and the introduction of new technologies also impact on the requirements on electricity supply networks. System operators have to find the optimal balance between technical performance and economic efficiency while assuring reliability – furthermore, every solution must be presented and motivated appropriately to shareholders and regulators.

In this complex and rapidly developing environment, experienced experts can help you to retain control.

Our solution
Comprehensive competencies in electrical power supply networks
Siemens PTI is your partner in the Siemens Energy Sector for all questions regarding electrical network design, equipment application and solution development. Our competencies are based on the profound knowledge of our highly qualified engineers and vast experience gained over several decades of successful work around the world.

Competence for all aspects of electrical power transmission and distribution

From low voltage distribution networks to transmission networks in the 1000-kV level or above, from special isolated networks to industrial networks of all sizes through national supply networks – we are familiar with the technical characteristics and local requirements. Our solutions consider the structure and performance of the complete system, based on the interaction of not only each primary component – e.g. considering also HVDC or FACTS systems - but also of secondary equipment.
Network Consulting
Siemens PTI, with our comprehensive knowledge, long-term experience, innovative tools and proven project management, is at your disposal to support you in mastering today’s complex assignments with appropriate care and foresight. Each solution generated by Siemens PTI is tailored to customer-specific requirements. Our broad consulting offer covers all aspects relating to the planning and analysis of electrical power supply networks:

■ Network Planning
Siemens PTI focuses on all relevant aspects of the technical and economical performance of the interconnected system. Relevant topics in this context include the steady-state performance, but also network dynamics, integration of generation units, power quality, or protection coordination.

■ Disturbance Analysis
As in any other engineered system, electrical networks also experience disturbances. By measurement and analysis, our experts can identify the often highly individual failure processes and develop suitable mitigation measures.

■ Energy Markets and Regulation
Opening energy markets requires new network design strategies by utilities and other market participants. Whether it be network access, system assessments or tariffs – our experts define the optimum solution with you.

Software Solutions
Our broad competence and experience in network consulting is reflected in our powerful software tools supporting planning engineers’ study accuracies and efficiencies. The Siemens PTI Power System Simulator (PSS®) Product Suite offers a wide selection of advanced tools for network simulation and analysis, and for efficient management of technical data models.

Our products are characterized by
■ comprehensive advanced functionality,
■ capability to handle very large networks,
■ intuitive graphical user interface,
■ wide variety of results presentation,
■ automation capabilities and APIs (application programming interfaces), and
■ diverse integration methods into IT environments.

The PSS® Product Suite provides tailored solutions for all tasks in the analysis of electrical power supply networks:

■ simulation and analysis of electrical transmission, distribution and industrial networks
■ simulation and analysis of flow networks (gas, water, district heating)
■ diverse data integration and management capabilities
■ auxiliary tools for special applications

Siemens Power Academy TD
The Siemens Power Academy offers training and professional education on all areas of power generation, transmission and distribution. Siemens PTI provides the T&D training portfolio as Siemens Power Academy TD.

As a manufacturer of products, equipment and systems, and offering related services in power transmission and distribution, we are skilled in T&D systems and components. For customers to compete today greater knowledge in each of these areas is required. Siemens PTI’s internationally-recognized experts train your staff in these subjects. Every course in our training portfolio can be flexibly adapted to the different equipment types, technical concepts and general requirements of the customer.

When it comes to staying ahead in a constantly developing environment: We offer you the right know-how for any current topic in energy transmission and distribution.

The Power Academy TD portfolio comprises courses on all T&D topics – switchgear, transformers, protection devices, general network planning and our PSS® software tools. Courses are offered in our worldwide training centers, via e-learning, or on-site at your premises. Besides these pre-defined courses we also develop completely individual schedules according to your actual requirements.