

# Comprehensive expertise for reliable and efficient networks

Siemens Power Technologies International (Siemens PTI)



Answers for energy.

**SIEMENS**

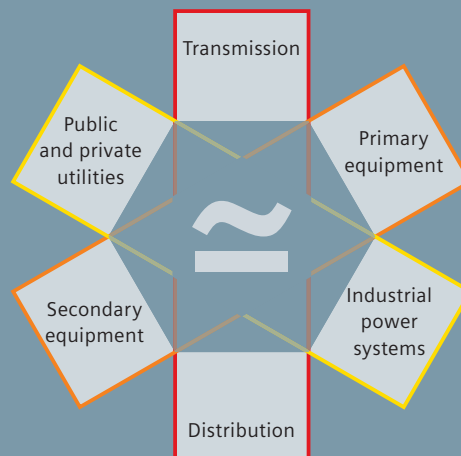
# Products, solutions, and services that put you one step ahead

Siemens Power Technologies International (Siemens PTI) supplies network consulting services, system planning software and professional training on all aspects of transmission and distribution. Siemens Energy is a world leader supplying innovative products, solutions and services for the utmost efficiency and productivity along the entire energy conversion chain. Siemens PTI provides the knowledge and expertise to combine the individual equipment components to form a complete electricity supply system that meets your technical and economical requirements.

Siemens PTI provides independent knowledge, expertise, and experience in the analysis of any type of electricity network from low-voltage or medium-voltage distribution systems for industrial or public electricity supply to the highest voltage levels for transmission systems. Our internationally renowned experts, software portfolio, and education curriculum, our long-standing expertise in advanced power system technologies, and our company's financial strength are a sound basis for developing state-of-the-art solutions for the highest reliability and efficiency of your network.

## Your benefits at a glance

- Proven concepts and decades of international experience
- Familiarity with international and local standards and requirements
- A holistic, integrated perspective on the performance of the entire energy system
- Independent and objective analysis of your system
- Cutting-edge software solutions of the PSS® product suite
- Product training and professional education on transmission and distribution topics



Competence for all aspects  
of electricity networks

# Succeeding in a changing world

Electricity networks are expected to guarantee the highest reliability possible. However, this goal is challenged today by issues such as increasing electricity demand, aging network and generation equipment, market deregulation, more and more distributed generation from renewable energy sources and large-scale wind farms. At the same time, the emergence of new technologies and concepts for system design and operation opens up new technical solutions. Professional and proven support from power systems experts is vital to ensure the security, reliability and efficiency of electricity networks in this challenging world.

A well-structured, secure and highly available electricity supply infrastructure is one of the most important elements of a profitable energy business – and it is vital for the functioning of our society and economy in general. Energy suppliers and energy customers alike are inevitably dependent on high power quality, which is mainly determined by the electricity networks.

On the business side, the regulatory framework is undergoing tremendous changes today. New energy markets are spurring large-scale energy trade and creating completely new business processes. At the same time, regulations are putting ever-increasing pressure on the cost of network configuration and operation.

Also on the technical side, various changes are emerging. New technologies for generation (e.g., distributed generation) and network equipment (e.g., FACTS, HVDC) are becoming mature and widespread. New concepts for components (e.g., compact switchgear), network design, and communication technologies are being introduced – finally transforming the network into a Smart Grid.

All of these issues significantly increase the complexity in the delicate balance between cost efficiency and power quality delivered by the networks. In this changing world, experts with comprehensive knowledge and proven experience can provide valuable support to planners and operators of transmission, distribution and industrial networks.



# Benefit

## from a comprehensive portfolio ...

### Network Consulting

Competitive power supply networks require highly customized solutions that take into consideration the system as a whole. Siemens PTI's Network Consulting services cover all aspects of power supply network planning and analysis. We assist operators and planners of both utility and industrial systems in meeting current and future expectations and complying with international and local standards and regulations.

#### Network planning

Optimal structuring and configuration of your network:

- Identification and consideration of all relevant technical requirements – steady state, dynamic, power quality, protection, etc.
- Network performance optimization through examination of the system as a whole
- Improvement of system availability and minimization of outages
- Environmentally compatible and economical solutions

#### Disturbance analysis

Identification of mitigation measures in case of failures:

- Root-cause studies using on-site measurements and analysis of operational data
- Analysis of problems related to power quality
- Early identification of weak points
- Development of mitigation strategies and implementation planning

#### Open energy markets

Optimized strategies for deregulated markets:

- Strategies based on detailed analyses of market and regulatory structure
- Improved economic performance through assessment of cost-benefit ratio
- Due diligence analyses
- Analysis and review of tariff structures, capital and operational expenditures, and tariff impacts



# ... with individual solutions to any system planning requirement

## Software Solutions

Siemens PTI has developed a suite of powerful software solutions that support network planning and operations engineers in their development of highly accurate and efficient power system analyses. The Power System Simulator (PSS®) product suite offers integrated conventional and specialized tools for network simulation and analysis. The tools feature an intuitive graphical user interface, customizable visualization options, automation capabilities and efficient data management. They can easily be integrated into any existing IT environment.

### PSS® product suite

Pinpoint solutions for any network analysis task:

- Simulation and analysis of all kinds of electrical power transmission and distribution networks as well as pipe networks
- Fully integrated modular structure and licensing
- Integration and management of technical data and planning variants
- Tailored training, individual customer support and regular user group meetings



## Siemens Power Academy TD

In addition to knowledge transfer during project execution, Siemens PTI offers a comprehensive scope of product training and professional education on transmission and distribution topics. The Siemens Power Academy TD portfolio ranges from general power engineering courses to switchgear, transformers and protection devices, as well as courses related to PSS® software. Ultimately, Siemens Power Academy TD offers training solutions along the entire energy conversion chain.

As an added option, standard courses can be adapted to your individual requirements. Customized training offers the benefits of flexible, efficient and effective instruction, and, if conducted on-site at your facilities, it eliminates costly travel.

### Standard and customized training

Professional education that can be customized to your needs and goals:

- One-off training sessions or complete training programs
- Delivery either at one of our worldwide training locations, at your own premises or via e-Learning
- Small groups and high degree of practical orientation with hands-on instruction for best learning results
- Certification and qualification to ensure a high quality standard

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