Energy Consulting

Engineering Courses

Power System Fundamentals

Training objectives:

This seminar will be valuable to participants in the power industry who need a fundamental understanding of the power system, and how system operation can impact power market activity. Beginning with the basic terms and concepts, the instructor will lead participants through a discussion of the power generation technologies and power delivery systems. Participants will learn about issues such as reliability, performance and potential bottlenecks or limits on the system that can impact trading. They will gain an understanding of key power market fundamentals such as pricing and scheduling. Insights with trends impacting the energy transition and decarbonization.

The course is intended for:

Persons needing to increase their understanding of the power system, system operations and competitive power market behavior, including:

- Financiers
- Policymakers
- Power traders
- Power project developers
- Independent Systems Operator and Regional Transmission Operator personnel
- Professionals in other energy industries
- Electric utility personnel that would like to gain electric power expertise

Main features:

Energy Outlook Overview

- Power Fundamentals
- Basic terminology and concepts
- Basic concepts of voltage and frequency stability
- Energy and power
- Objectives of System Operators and Equipment Owners

Generation Fundamentals

- Basic elements of a power system
- What is a power plant?
- Heat rate and efficiency
- Gas turbines
- Steam turbines
- Generators
- Hydro, Solar and Wind generation
- Power plant subsystems
- Power plant economics

Power Delivery Fundamentals

- Transmission fundamentals
- HVDC transmission
- Power delivery components
- Delivery challenges
- Reliability and performance
- Regulatory drivers
- The consumer

Integrated System Operations

- Operation of the transmission grid
- Interconnection economics
- Congestion management

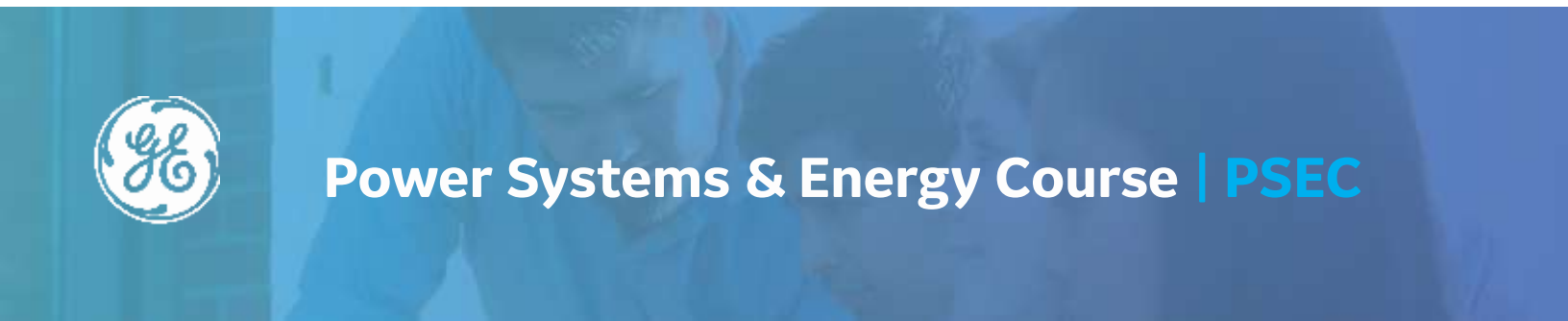
Power Market Fundamentals

- Energy and capacity
- Ancillary services
- Transmission
- Regulatory overview

Recommended prior knowledge:

Basic knowledge of mechanical or electrical engineering, power systems & economic theory.
Note: The course is held in English. Class subject to change.

For more information visit: **www.geenergyconsulting.com**



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