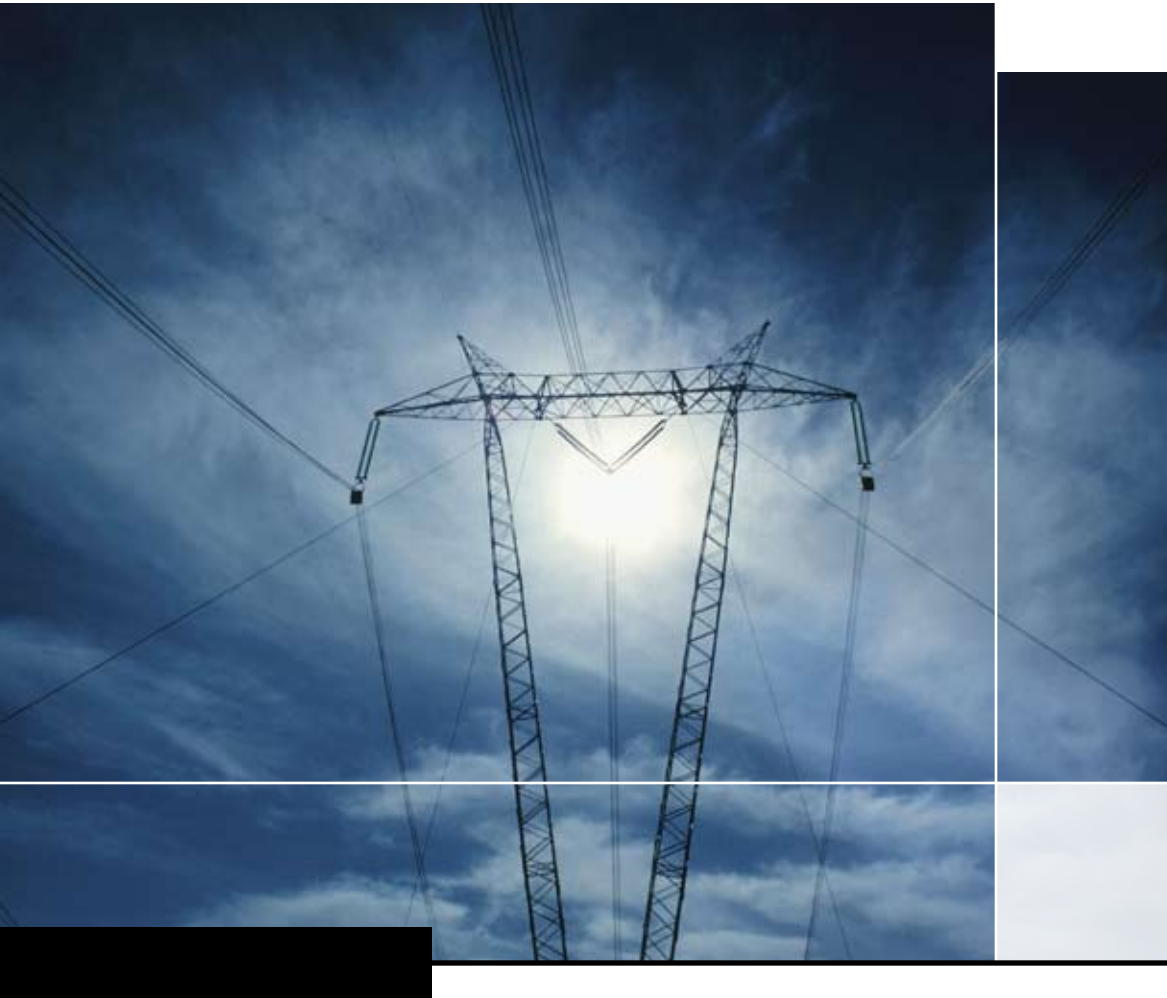




INDEPENDENT **ELECTRICITY**
CONSULTANTS



In-Depth **Introduction** to **Electricity Markets**



In-House Seminars

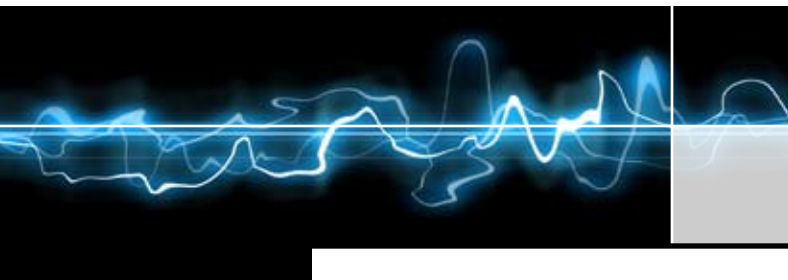
provided by Frank Felder, PhD



Overview

“ This course provided a highly informative picture of how the nation’s electricity generation and delivery system actually works, without requiring an advanced level of prior knowledge. ”

Joe Paladino, U.S. Department of Energy



Overview

In-Depth Introduction to Electricity Markets is designed for those with a limited knowledge of electric power systems and restructured markets. It provides an overview of the industry, focusing on the linkages between power system engineering, markets, regulatory policy, and business strategies. Specific examples and actual market data are used to illustrate basic principles and ideas. Several approaches are used to elicit participation from attendees, including group exercises and a multi-round electricity market simulation in which participants bid a portfolio of generation resources over the course of the seminar under various market rules and conditions. Participants have plenty of opportunities to ask questions and discuss issues of special interest to them. Extensive and comprehensive course notes are provided to each attendee.

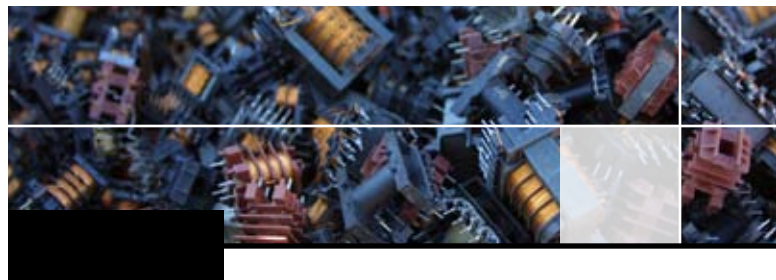
What you will learn

In-Depth Introduction to Electricity Markets is an intensive two-day course that provides participants with a solid understanding of the basic engineering and economic terms, issues, and methods of analysis necessary to be successful in electricity markets, including:

- The basic components, design, and operation of electric power systems
- Types of generation units and price-responsive load
- The fundamentals of various electricity markets, including locational marginal pricing, bilateral, day-ahead, real-time, capacity, and ancillary services markets and how these markets are designed to be consistent with the engineering fundamentals of electric power systems
- The impetus for restructuring the electric power system and introducing competition and the status of restructuring in different regions of the United States
- The major industry players and the strategies they are pursuing
- The fundamentals of risk management as applied to electricity products
- Critical issues confronting the industry such as market power and reliability, and likely future directions
- Successful bidding, asset development, and ISO/RTO regulatory strategies

Who should attend this COURSE

- Employees new to the industry or with limited industry experience
- Attorneys and regulatory personnel
- Accounting, IT, and support personnel that need a better understanding of their firm’s competitive environment
- Marketing and customer service representatives
- New employees of independent system operators
- New energy market participants
- Power generator owners/developers
- Gas and electric marketers and brokers
- Employees of energy service companies
- Energy purchasing agents



Prerequisites

There are no prerequisites for this seminar.

“ This seminar provided an excellent introduction to the engineering, financial, and market aspects of the electric utility industry. ”

Paul Puckett, Planning Engineer III, Louisville Gas and Electric Company

In-House Seminars

Sponsoring a one to two day in-house seminar is a cost-effective way to meet an organization’s training needs.

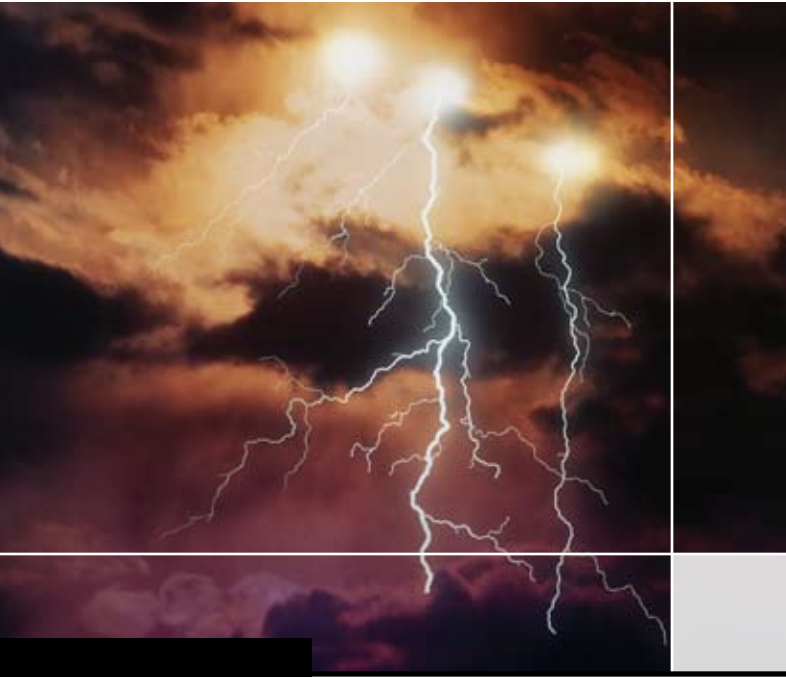
This course has been conducted in-house for electric utilities, IPPs, and law firms. Over 500 attendees throughout the United States have attended open enrollment of this seminar during the past four years.



Program Agenda

“Course is exactly as advertised—an in-depth introduction full of substance.”

John Reis, Asset Manager, DTE Energy Services



Typical Schedule Day 1

- 8:00 – 8:30 am **Registration and Coffee**
- 8:30 – 9:00 am **Introductions, Logistics, and Course Overview**
- 9:00 am – 12:00 pm **Design and Operation of Electric Power Systems**
 - Generation, transmission, and distribution
 - Types of supply and demand resources, costs, and capabilities
 - Load duration curves, system load factors, and customer classes
 - Economic (merit order) dispatch and unit commitment
 - Reliability planning, operations, and ancillary services
 - Transmission congestion and loop flows
 - Power system blackouts
 - Electricity market simulation Round 1
- 12:00 – 1:00 pm **Group Luncheon**
- 1:00 – 4:00 pm **Electricity Market Fundamentals**
 - Review of microeconomics: supply and demand, spot versus bilateral markets, auction theory
 - Description and mechanics of day-ahead and real-time electricity markets
 - Locational marginal pricing and financial transmission rights (FTRs)

- Capacity markets: functions, design, and operation
- Emission markets and their implications
- Ancillary service markets: operating reserves, automatic generation control, and other necessary services
- Market power analysis and mitigation policies
- Electricity market simulation Round 2

4:00 – 5:00 pm

Group Exercise and Discussion

Seminar participants work in small groups to design a reliable and efficient bulk power system in order to appreciate the tradeoffs between different types of generation and transmission resources on costs and reliability. Each design is evaluated by the instructor and discussed among all seminar participants.



Typical Schedule Day 2

- 8:00 – 8:30 am **Review of Previous Day; Opportunities for Questions and Discussion**
- 8:30 – 10:00 am **The History and Future of Restructured Electricity Markets in the US**
 - Description of regulated electric power systems
 - Public policy rationale for restructuring the U.S. electric power industry
 - Status of restructuring and experience to date including existing ISOs throughout the US
 - Major issues facing the industry: market power, transmission expansion, standard market design, price-responsive load
 - Electricity market simulation Round 3
- 10:00 am – 12:00 pm **Recent FERC Initiatives and Likely Future Industry Directions**
 - Review of major elements of the FERC Standard Market Design

continued on next page



Program Agenda

“As a Power Plant Manager in a deregulated area, this course is a great primer that all operational personnel should attend. This course removes the mystery of trading.”

Bill King, Operations Manager, Tractebel Power Inc.

- Energy and ancillary service markets
- Resource adequacy
- Transmission planning and expansion
- Obtaining market-based rates and FERC's market power screens
- Reliability policy after the August 14, 2003 blackout
- Electricity market simulation Round 4

12:00 – 1:00 pm

Group Luncheon

1:00 – 3:00 pm

Industry Players, Bidding, Investment and ISO Strategies, and Risk Management

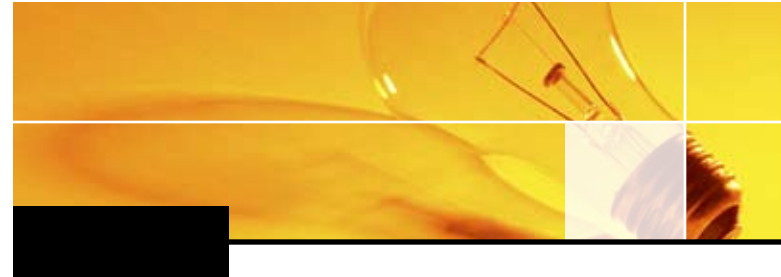
- Types of players: generators, traders, brokers, energy service companies, merchant transmission, incumbents
- Transmission, public power, and customers
- Key industry players
- Successful bidding strategies
- Thinking through the investment cycle for new assets
- Effective RTO/ISO regulatory strategies and lessons learned
- MISO: what to expect and how to respond to MISO's Day 2 Markets
- Energy price forecasting (technical and fundamental)
- Managing energy volatility with futures, options, and physical assets
- Credit issues
- Electricity market simulation Round 5

3:00 – 4:00 pm

Wrap Up, Final Questions

Course Notes

Each participant receives an extensive set of course notes including references, list of acronyms, and a glossary of terms. A Certificate of Completion is also provided at the end of the course.



Instructor

Dr. Frank Felder, is an expert on the economics and reliability of restructured electric power systems. A well-known consultant and speaker, Frank advises the electric power industry's most prominent companies on market design, market power, electricity price forecasting, and risk management. He has testified before the Federal Energy Regulatory Commission and many state public utility commissions. As part of his consulting practice, Frank holds frequent seminars that explain complex – and sometimes arcane – material in an intuitive, humorous, and accessible manner. Frank is a professor at the Bloustein School of Planning and Public Policy, Rutgers University where he conducts research in electricity markets at the Center for Energy, Economic & Environmental Policy. Frank holds a PhD in Technology, Management, and Policy from the Massachusetts Institute of Technology, where his research focused on the economics and reliability of restructured electric power systems.

Visit online at www.independentelectricityconsultants.com

“Very Good. Much more intelligent presentation and response to questions than I've seen at other classes.”

Sarah Adams Lien, Energy Attorney, Stoen Rives LLP

Contact

For additional information or to arrange an in-house seminar/presentation, contact Frank Felder at:
ffelder@independentelectricityconsultants.com
Tel: 781.504.8424

