



# IN-DEPTH INTRODUCTION TO ELECTRICITY MARKETS

March 15-16, 2010 • Hyatt Regency Cambridge • Cambridge, MA

**"I would make this course mandatory for all new employees. The course is an extremely informative and instructive introduction."**

Assistant Analyst, American Electric Power

**"An excellent course. Clearly one of the best I have attended. Frank is great!"**

Counsel, Ontario Power Authority

**"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."**

Attendee from U.S. Department of Energy

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

Planning Engineer III,  
Louisville Gas and Electric Company

**"Course is exactly as advertised - an in-depth introduction full of substance."**

Asset Manager, DTE Energy Services

**"I wish I would have taken this course 10 years ago. Things make so much more sense now."**

Resource Accounting Analyst, Avista



EUCI is authorized by IACET to offer 1.3 CEUs for this program.

## OVERVIEW

This in-depth introductory course is designed for those with a limited knowledge of the electric power system 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. This seminar uses several approaches to elicit participation from attendees including group exercises and an 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 will 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.

## TRAINING/LEARNING OBJECTIVES

This intensive two-day course will provide participants with a solid understanding of the basic engineering and economic terms, issues, and methods of analysis necessary to be successful in electricity markets. Attendees will learn the following:

- Identify the basic components, design, and operation of electric power systems
- Describe types of generation units and price-responsive load
- Analyze 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
- Discuss the impetus for restructuring the electric power system and introducing competition and the status of restructuring in different regions of the United States
- Identify the major industry players and the strategies that they are pursuing
- Examine the fundamentals of risk management as applied to electricity products
- Distinguish critical issues confronting the industry such as market power and reliability and likely future directions

## WHO SHOULD ATTEND

- Employees new to the industry or with limited industry experience
- Attorneys and regulatory personnel new to the industry
- Accounting, IT personnel, 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
- Energy service companies
- Energy purchasing agents

## IACET



EUCI has been approved as an

Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102. In obtaining this approval, EUCI has demonstrated that it complies with the ANSI/IACET Standards which are widely recognized as standards of good practice internationally.

As a result of their Authorized Provider membership status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standards.

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### Instructional Methods

Instruction methods will include PowerPoint presentations and discussion.

### Requirements for Successful Completion

Participants must sign in/out each day and be in attendance for the entire program to be eligible for any continuing education credit.

## PROGRAM AGENDA

**MONDAY, MARCH 15, 2010**

- 8:00 – 8:30 a.m. Registration and Continental Breakfast**
- 8:30 – 9:00 a.m. Introductions, Logistics, and Course Overview**
- 9:00 a.m. – 12:00 p.m. 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
  - Electricity market simulation
  - Power system blackouts
- 12:00 – 1:00 p.m. Group Luncheon**
- 1:00 – 4:00 p.m. Electricity Markets 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 (LMP) and financial transmission rights (FTRs)
  - Capacity markets: functions, design, and operation
  - Emission markets and their implications
  - Ancillary services markets: operating reserves, automatic generation control, and other necessary services
  - Market power analysis and mitigation policies
  - Electricity market simulation
- 4:00 – 5:00 p.m. Group Exercise and Discussion (Design of a Bulk Power System)**

## CPE CREDITS



EUCI is registered with the National

Association of State Boards of Accountancy (NASBA) as a sponsor of continuing professional education on the National Registry of CPE Sponsors. State boards of accountancy have final authority on the acceptance of individual courses for CPE credit. Complaints regarding registered sponsors may be addressed to the National Registry of CPE Sponsors, 150 Fourth Avenue North, Suite 700, Nashville, TN, 37219-2417. Web site: [www.nasba.org](http://www.nasba.org).

### CPE CREDITS

Upon successful completion of this event, program participants interested in receiving CPE credits will receive a certificate of completion.

### Course CPE Credits: 15.5

There is no prerequisite for this conference.

**Program Level:** Beginner

**Delivery Method:**

Group-Live

**Advanced Preparation:**

None

## PROGRAM AGENDA

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### TUESDAY, MARCH 16, 2010

- 7:30 – 8:00 a.m. Continental Breakfast**
- 8:00 – 8:30 a.m. Review of Previous Day; Opportunities for Questions and Discussion on Previous Day's Material**
- 8:30 – 10:00 a.m. The History and Future of Restructured Electricity Markets in the US**
- Description of regulated electric power systems
  - Public policy rationale for restructuring the US 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
- 10:00 a.m. – 12:00 p.m. Recent FERC Initiatives and Likely Future Industry Directions**
- 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
- 12:00 – 1:00 p.m. Group Luncheon**
- ISO New England Topics**
- *Marc Montalvo, Director of Assessment and Investigation, ISO New England*
- 1:00 – 3:00 p.m. Industry Players, Bidding, Investment and ISO Strategies, and Risk Management**
- Types of players: generators, traders, brokers, energy service companies, merchant transmission, incumbent 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
  - Energy price forecasting (technical and fundamental)
  - Managing energy volatility with futures, options, and physical assets
  - Credit issues
- 3:00 – 4:00 p.m. Wrap up, Final Questions, and Completing Course Evaluation Form**

## INSTRUCTORS

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**Frank Felder**, is an expert on the economics and reliability of restructured electric power systems. He consults to a wide range of clients in the industry, advising them on market design, market power, electricity price forecasting, and risk management. He has testified before the Federal Energy Regulatory Commission and several state public utility commissions. As part of his consulting practice, Frank has conducted numerous seminars and lectures, and has widespread experience explaining complex – and sometimes arcane – material in an intuitive, humorous, and accessible manner. Frank is also Assistant Research Professor at the Bloustein School of Planning and Public Policy, Rutgers University, where he conducts research in electricity markets with the Center for Energy, Economic & Environmental Policy. He 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 <http://www.independentelectricityconsultants.com>

**Marc D. Montalvo** is the Director of Assessment and Investigation in the Internal Market Monitoring Unit of ISO New England Inc., the not-for-profit organization that operates New England's bulk power grid and wholesale electricity markets. From 2004 to 2009, Mr. Montalvo served as the Director of Market Development. Mr. Montalvo has energy industry experience that includes power market design and implementation, risk management, resource planning and power project finance. He has testified before the FERC in support of ISO New England market design proposals and has testified before state regulatory agencies on issues including resource economics, portfolio design, and asset valuation. Prior to joining the ISO in 2004, Mr. Montalvo served as Manager of Wholesale Market Analytics at La Capra Associates, an energy industry consultancy based in Boston, MA. Before joining La Capra Associates, he was an Analyst in the generation operation and marketing group at New England Power Company (NEES). Mr. Montalvo holds a M.S. in Finance from Clark University and a B.S. in Mathematics from Allegheny College.

## PROCEEDINGS

The proceedings of the course will be published and one copy will be distributed to each registrant at the course.

## COURSE LOCATION

A room block has been reserved at the Hyatt Regency Cambridge, 575 Memorial Drive, Cambridge, MA 02139, for the nights of March 14-15, 2010. Room rates are \$129, plus applicable tax. Call 617-492-1234 for reservations and mention the EUCI course to get the group rate. Make your reservations prior to February 22, 2010. There are a limited number of rooms available at the course rate. **Please make your reservations early.**

## REGISTRATION INFORMATION

### REMEMBER, EVERY 4TH REGISTRANT IS FREE

For instant registration, call (303) 770.8800 or fax the Registration Form to (303) 741.0849.

Register 3, Send 4th Free!!

Any organization wishing to send multiple attendees to this course may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.

All cancellations received on or before February 12, 2010 will be subject to a \$195 processing fee. Written cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI conference or publication. This credit will be good for six months. In case of conference cancellation, Electric Utility Consultants' liability is limited to refund of the conference registration fee only. For more information regarding administrative policies such as complaints and refunds, please contact our offices at (303) 770.8800.

EUCI reserves the right to alter this program without prior notice.

### MAIL DIRECTLY TO:

Electric Utility Consultants, Inc. (EUCI)  
5555 Preserve Drive  
Greenwood Village, CO 80121

**FAX TO:** (303) 741.0849      **PHONE:** (303) 770.8800

## PLEASE REGISTER THE FOLLOWING

- In-Depth Introduction to Electricity Markets, March 15-16, 2010, US \$1395  
**Early Bird on or Before March 5, 2010, US \$1195**

### ENERGIZE WEEKLY

When you sign up for "Energize Weekly" you will receive a new conference presentation each week via email on a relevant industry topic. The presentations are selected from a massive library of over 1000 current presentations that EUCI has gathered during its 22 years organizing conferences.

- Sign me up for "Energize Weekly"**

How did you hear about this event?  
(Direct email, Colleague, Speaker(s), etc.)

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Name \_\_\_\_\_ Job Title \_\_\_\_\_

E-Mail \_\_\_\_\_

Company \_\_\_\_\_ Telephone \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

## PAYMENT METHOD

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Visa and MC cards have a 3 digit code on the signature panel on the back of the card, following the account number. American Express cards have a 4 digit code on the front of the card, above the card number.

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