



POWER TRADING & HEDGING FUNDAMENTALS

- Presented by Energy Management Institute - www.emi.org

What You Will Learn

In two dynamic, information-packed days, you'll develop a solid foundation in both power trading and hedging as you examine all of the instruments, tools and techniques available to the energy trader today.

This program brings you from basic terminology to trading mechanics. You'll learn about marginal cost, load capacity, LMP, Power volatility, implied heat rates, and forward contracts.

We'll also cover hedging accounting; portfolio and position management, value at risk, stress testing and credit risk. You'll explore the nuances and quirks specific to the power markets, understand the risks and rewards across sectors and develop a macro view designed to improve your working knowledge of the power market complex.

Who Should Attend

Power and fuel purchasers, analysts, traders, trade support staff, finance and auditing personnel. Entry-level to intermediate professionals from: merchant generators, banks, utilities, power marketers, retail providers, back office, hedgers, marketers, end-users, and government agencies.

CPE Credits



This course earns 12 CPE credits.

Energy Management Institute 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.learningmarket.org.

COURSE DATES & LOCATIONS

- **August 29-30, 2017 - Houston, TX**
Regus Conference Center
8:30am - 4:30pm both days
- **September 27-28, 2017 - New York, NY**
Regus Conference Center
9am - 4:30pm both days

See last page for venue addresses.

REGISTER ONLINE

EMI CERTIFICATION CREDIT



This course earns 6 credits towards EMI Certification.

Not enrolled? Learn more about EMI's Certification Program and enroll today at cert.emi.org

REGISTRATION FEES

1st delegate:	\$1,995
2nd delegate:	\$1,795
3rd delegate:	\$1,600



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FUNDAMENTALS

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DAY ONE

Morning

Session 1: Power Industry Basic Terminology

We'll start by exploring basic industry facts and terminology.

- How does the grid work?
- How is power delivered to our home or business?
- What is a peak day? Capacity? Reserves? Load?
- Generation technologies and marginal costs.

Session 2: Reliability and Comparative RTO Markets

- What is "reliability" and why is it so important? How is reliability ensured?
- FERC, NERC and the ISO/RTOs:
By FERC mandate, competitive markets are the future for power. We will deepen our understanding of the power markets by thoroughly examining the LMP markets where values are resolved. How do day-ahead and real-time differ?
- What are Financial Transmission Rights? How do the regions differ in their implementation of FERC mandates? How are ancillary services handled? How does FERC ensure that the markets are competitive? What plans does FERC have for the future?

Session 3: Locational Marginal Price (LMP)

- Why is LMP important?
- Impact of Supply Stack on LMP Values.
- Day Ahead Versus Real Time LMP.
- Two Settlements Example.
- Why is Natural Gas Important?

Afternoon

Session 4: Value Fundamentals

Any discussion of risk management must start with an analysis of the factors that drive power price volatility.

- How are power prices determined at the finest level of granularity, LMP?
- How does congestion drive price differentials and volatility? Negative congestion and negative prices.
- Scarcity pricing.
- FTRs.
- ARRAs.
- Ancillary services.

Session 5: Market Fundamentals

- How do fuel and weather interact to determine value?
- How do the power markets seem to defy, yet follow, economic principles?
- Implied heat rate.
- Emissions.
- Capacity Markets.

Session 6: Forward Contracts and Trading

In recent years, the Intercontinental Exchange (ICE) has challenged the CME NYMEX in energy trading. We will compare and contrast the two exchanges and their contractual offerings in power.

- What are futures, forwards, swaps and options?
- How do related energy markets influence power?
- What is financial versus physical settlement?
- Cleared versus bilateral?
- What regional differences are important?
- ISDA.
- Nodal.
- Firm vs. non-Firm.
- Terms traded.



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DAY TWO

Morning

Session 7: Trading Mechanics and Market Participants

We will extend our discussion of the markets with a focus on the mechanics and vocabulary of trading.

- Forwards, futures and swaps.
- Margins.
- Backwardation. Contango. Inverse. Bid/Ask.
- Spreads: Temporal. Locational. Spark. Strips.
- Execution Brokers.
- Who participates in the power markets and why? How do their motivations influence their strategies and behavior?
- Hedgers: Utilities, Merchants, Retail, and Power Marketers.
- Traders: Banks. Funds.

Session 8: Volatility Fundamentals

Understanding the nature of volatility and probability is central to understanding market risk, and we use the language and tools of options to describe it. In this session, we will explore how these concepts are used to understand and quantify market risk, and we will do so with limited mathematics.

- What is volatility and how is it measured?
- How is power volatility similar to conventional views of volatility?
- How does power volatility differ?
- How do the value fundamentals drive power market volatility?
- How do we develop a probabilistic, future directed, view of our portfolio?
- Spreads.
- Long-term fundamentals.

Session 9: Option Mechanics and The Framework for Risk Analysis

Options are a key derivative contract by which we trade and manage volatility. We will deepen our understanding of the markets by examining the mechanics, vocabulary and principles of options trading.

- Volatility.
- Greeks.
- Monthly exercise.
- Daily exercise.

Afternoon

Session 10: Mid and Back Office Functions

We will continue our discussion of risk management by examining reporting requirements.

- Office roles.
- Hedge Accounting - FAS 133.
How does FAS 133 influence accounting, financial reporting issues and hedge accounting? What policies and procedures are allowed? Required? Forbidden?
- Fair Value.
FAS 157, Value at Risk, time frames, stress testing, hedging tradeoffs, returns to risk, credit risk. How do we quantify credit exposure? How do we manage that exposure?

Session 11: Portfolio Management, Position Management, and Best Practices

- Once we understand the elements, how do we aggregate them so as to understand the risk profile of a power risk book?
- How do we account for correlation?
- How do we measure risk? Value at risk, earnings at risk, cash flow at risk and returns to risk will be discussed, along with their variations.
- How does a firm assess its risk tolerance?
- How can mitigating one risk often amplify a different risk?
- What role should formal risk management play in the management of a power risk book?
- How does management establish and control its corporate risk culture?
- What policies and procedures should be implemented to ensure prudence?
- Infrastructure requirements.: What valuation practices are acceptable? What documentation practices are acceptable? How should models be vetted? How should trading and risk management personnel be compensated? How are risk limits set and enforced? How do we ensure transparency?

Session 12: Cases

Using what we've learned so far, let's discuss an actual transaction, identify the risk factors, describe the types of standard products which can be used to hedge the transaction, and talk about what type of market factors might be relevant in our analysis of the deal. What are the residual risks and how does our Risk Management Department feel about them?



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Learn From the Experts that Experts Trust

EMI experts are frequent editorial contributors to petroleum magazines & are trusted by today's leading news sources.

Our experts have been featured in:

Futures Magazine • The Wall Street Journal • USA Today • The New York Times • The Washington Post • Journal of Commerce • CNN • NBC • CBS • ABC • Bloomberg • Reuters

EMI's leading industry experts have an average of over 30 years of knowledge and experience in:

**Energy • Commodity trading • Risk management
• Education • Consulting • Financial services**

Plus many years of managing marketing, international trading, manufacturing, consulting, start-up operations and project finance operations of well-known companies; integrated major oil companies as well as international trading companies.

EMI's industry experts have also provided risk and value management analysis, advice, information, and services to a variety of companies in the electric power industry. Clients have included power marketers, integrated utilities, retail power providers, hedge funds, and power plants.

Highlights of our instructors' experience include: • Developing a suite of models for a variety of power markets that quantify value and risk • Managing spark spread portfolios for hedge funds in the power markets • Operating in futures trading pits as a market observer in the power markets • Developing working papers for investigations and performing compliance audits in the power industry • Helping Texaco initiate its first use of futures exchanges as an integral part of hedging/trading strategy • Chief Operating Officer of Triwell Marketing and refining • Director of OPIS, Oil Price Information Service, a management-consulting and educational services group that solely focused on the downstream energy industry • Member of Board of Directors of Longview Refinery • Member of the New York Mercantile Exchange Petroleum Advisory Board • Expert witness for a hearing before the subcommittee on surface transportation for the Commerce, Science, and Transportation Committee of the US Senate • Supplied expert testimony to a US Senate sub-committee hearing on diesel petroleum product pricing • Supplied testimony to the Federal Highway Administration regarding fuel tax evasion • Expert witness in a MTBE litigation against the major oil companies • Publishers of The Daily Hedger, BTU's Daily Gas Wire and BTU's Daily Power Report, which advise thousands of petroleum professionals daily.

Our instructors are frequent expert speakers for numerous petroleum industry events and trade associations including: • DOE DESC World Energy Conference • OPIS Fleet Fueling • CME NYMEX • Fuel Management University • NATSO • ATA • AAA • Dairy Distribution • eyeforEnergy eCommerce • OPIS Supply Summit • CIOMA • American Society of Mechanical Engineers • American Society of Lubricating Engineers • Ambrust Aviation • NACHA.

Over the years EMI has developed a series of intensive courses covering all aspects of Energy from production all the way to managing the impact price and volatility on the margin of end-users, resellers, traders, marketers, shippers, retailers and refiners. Our instructors have had the privilege to instruct thousands of professionals representing all aspects of the energy industry, including every major oil company (i.e. Exxon Mobil, BP, Shell, Equilon, Motiva) major power utilities (i.e. Sempra, Edison Mission, Berkley, Toronto Hydro, Dominion, Conectiv) small marketers (i.e. Sprague, Getty, Southern Counties, Western Petroleum) trucking fleets from 50 to 10,000 (i.e. UPS, U.S. Postal Service, Yellow, Pepsi, Werner), gasoline-powered fleets hyper-markets (i.e. The Pantry, Wawa, BJs Wholesale) and many fortune 500 energy consumers.



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REGISTER ONLINE

Registration Fees:

1st Attendee: \$1,995 for full program

2nd Attendee: \$1,795

3rd Attendee: \$1,600

1 CHOOSE YOUR COURSE DATE/LOCATION

August 29-30, 2017
Regus Conference Center
800 Town and Country Blvd.
Suite 300
Houston, TX 77024
PH: 832.431.3000

September 27-28, 2017
Regus Conference Center
14 Wall Street, 20th Floor
New York, NY 10005
PH: 212.618.1700

Hotel recommendations for select course locations available online at www.energyinstitution.org/hotels

2 ENTER ENROLLMENT DETAILS

First Name: _____ Last Name: _____

Company Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ Email Address: _____

3 MAKE PAYMENT CHOICE

Please invoice my company (payment must be received prior to course date)

Pay by credit card (circle one): Mastercard Visa American Express

Card Number: _____ Expiration Date: / /

Card Holder Name: _____

Card Holder Signature: _____

4 SUMBIT REGISTRATION FORM

EMAIL: Send form to register@pmaconference.com.

TEL: Call PMA Conference Management at 201.871.0474

FAX: 253.663.7224

POST: PMA Conference Management
POB 2303
Falls Church, VA 22042

REFUND/CANCELLATION POLICY

Attendees may reschedule for a different date or course with no penalty. Attendees may substitute a colleague in place of themselves as long as prior notice is given to EMI.

Course fees are 100% refundable up to 14 days prior to course date, 80% refundable up to 5 days prior to course date and 50% refundable up to 2 days prior to course date. Cancellations are non-refundable thereafter.