To register or for more information contact:
Valerie DeLorenzo
Phone: 215.493.4482
Email: vdelorenzo@emimail.org
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For easy reference, icons are included in each course description to help you quickly identify which industry segments are covered in each course.

- Oil
- Natural Gas
- Power
- Alternative Fuels
Get the actionable skills you need to survive and thrive in today’s unpredictable energy complex with training from Energy Management Institute.

Energy Management Institute provides practical yet innovative training with an emphasis on trading, risk management and the physical markets.

**EMI Energy Training Is All About You and Your Success**

When you participate in an EMI energy training program, our experts become your mentors. Their goal is to ensure that you learn from their experience and leave our courses with knowledge you can use in the real world. Each EMI course promises to deliver:

- Easy learning environment with small, personalized classes
- Hands-on instruction
- Real-life examples and current market data
- Expert instruction with real, applicable industry experience
- Forward market perspective for understanding tomorrow’s industry
- A fully accredited EMI certificate, awarded in each program upon completion

**Learn From Respected Industry Leaders**

EMI instructors are recognized leaders in the energy industry, each with more than 30 years’ experience. Recently, EMI was appointed to the CFTC Environmental Markets Advisory Committee (EEMAC). As an EEMAC member, we are preparing the government for regulated trading. But more important, it means we have access to leading-edge energy information we share directly with you.

**Join Esteemed Alumni Around the Globe**

EMI alumni include energy professionals representing natural gas and power companies, including marketers, utilities, co-ops and regulators, major and independent oil companies, Fortune 500 end users, utilities, large financial institutions, public transit, large petroleum distributors, and U.S. state and federal government agencies.

EMI is a trusted education provider for the InterncontinentalExchange (ICE) and CME NYMEX.

**Bring Any EMI Training Program to Your Location!**

EMI On-Site Programs offer your company ultimate flexibility and affordability while delivering the same high-quality, in-depth instruction offered by our traditional programs. Choose from our selection of course offerings or build your own with our custom-tailored option. EMI On-Site Programs allow you to:

- Eliminate costly travel expenses
- Customize content and tailor our existing courses to your specific learning requirements
- Acquire critical knowledge using real-world examples
- Set flexible dates, times and locations
- Promote a team environment and ensure a common knowledge base geared toward your level of expertise
- Communicate with our industry experts anytime after your event.

For more information or to book your EMI On-Site Program, CALL 215.493.4482.

For a current schedule of EMI courses, visit www.emi.org or call 215.493.4482.
About Energy Management Institute

Energy Management Institute is dedicated to providing the most comprehensive and exciting training experiences available to energy professionals. Our series of workshops addresses the fundamentals of the petroleum, natural gas and power industries, with a particular emphasis on trading and risk management.

Industry members are introduced to purchasing and selling methodologies, manufacturing, and marketing, as well as hedging and risk management strategies. Moreover, they are provided with highly focused insight into the key factors that drive success in these markets. EMI utilizes current market data, real-life examples and expert instruction. Class participants will learn how to be successful in today's competitive market, and will be given a "sneak preview" of future industry trends.

EMI courses are also available for on-site presentations. It is our goal to fulfill your corporate training objectives and to provide meaningful instruction that is geared toward the experience level of those in attendance. We welcome and encourage clients to provide any specific knowledge requirements that they wish to have incorporated into their training program.

The CME Group/NYMEX and EMI

The CME Group and the New York Mercantile Exchange, Inc. (NYMEX), have formed a strategic alliance with Energy Management Institute of New York to provide higher education and training to the domestic and international exchange community. EMI’s CME NYMEX-sponsored programs are held at the CME NYMEX headquarters in lower Manhattan and Chicago, and at the CME NYMEX London.

The CME NYMEX and Energy Management Institute are committed to providing the highest-quality education and training to promote market awareness, hedging, trading and CME NYMEX contract opportunities. Energy producers, suppliers, distributors, end users and investors will be prepared to better use the CME NYMEX to price, trade and hedge energy risk.

Building on the heritage of CME, CBOT and NYMEX, CME Group serves the risk management needs of customers around the globe. CME Group provides the widest range of benchmark futures and options products available on any exchange, covering all major asset classes.

The EMI/ICE Connection

IntercontinentalExchange (ICE) operates global commodity marketplaces, including the world’s leading electronic energy marketplace and soft commodity exchange. ICE offers a complete range of front-to-back-office trading and risk management services powered by an integrated technology platform. ICE’s leading-edge, global network brings participants together with benchmark commodities, clearing services and market data in one vibrant marketplace.

ICE Education, as part of the group, has a responsibility to provide learning programs that promote market awareness and builds capabilities for hedging and trading opportunities for all industry participants exposed to the fluctuations in commodity market prices. In doing this, ICE, along with selected learning partner EMI, provides a unique opportunity to learn from professionals at the heart of the markets.
For a current schedule of EMI courses, visit www.emi.org or call 215.493.4482

Enroll in EMI’s
PROFESSIONAL CERTIFICATION PROGRAM

EMI Certification is Your Fast Track to Energy Industry Success

EMI’s Certification Program is helping to qualify and fast-track career-minded professionals who are seeking accelerated success in the dynamic oil, gas and power industries.

Candidates who follow EMI’s recipe for success will gain invaluable specialized knowledge that can be applied and rewarded within the exciting field of energy trading.

How EMI Certification Works

EMI prepares you by providing the most comprehensive and exciting training experiences available to energy professionals.

Achieving the EMI certification culminates by passing our industry-specific online examination.

Choose from Two Certification Options.

Choose the certification that meets your career path and goals. EMI offers two unique certifications: Certified Energy Professional (CEP®) and Certified Energy Trading Professional (CETP®).

Earn as You Learn.

EMI core courses earn you credits good towards certification. Take a minimum of 3 eligible EMI courses for at least 9 EMI Credits - EMI onsite courses included.

Eligible courses you’ve completed within 12 months prior to your enrollment in the certification program can be applied to your certification credits.

Save On Each Course You Take!

When you’re enrolled in the EMI certification program, you’ll get a unique promo code that will give you a $200 discount on each course you take towards earning your certification.

Take your EMI Certification Exam.

After earning the required number of EMI credits, your certification is just a test away. The exam is administered online, at your convenience. Exam fee is $25.

Receive your framed EMI CETP® designation.

Your certification includes a printed, framed certificate that we’ll mail directly to you upon successfully passing the certification exam.

Continuing Education/Certification Retention

Keeping your certification is easy! Simply take 2 EMI courses per year to retain your certification.

For more information and to request an application, go to: www.emi.org

Or call EMI at 215.493.4482.

For a current schedule of EMI courses, visit www.emi.org or call 215.493.4482
Simulated Oil Trading: A Live Simulated Oil Trading Experience

Course Length: 2 Days      CPE Credits: 13      EMI Credits: 6      Prerequisites: Assumes some basic understanding of oil trading

Are you ready to spend a few days trading the dynamic oil market? This exciting two-day training will give you the chance to learn by doing. We’ll start by covering fundamental and technical analysis. You’ll get a thorough understanding of the main oil instruments traded in the oil complex and how to trade these instruments. Armed with what you’ve learned, you’ll put your skills to the test using EMI’s Trading Simulator:

- **Participate in 5 different simulated trading sessions**
- **Face various real-world trading scenarios**
  These scenarios will use live data and actual historical data that has been selected to let you experience the pain and gain in trading under conditions that have actually occurred.
- **Get insightful, constructive comments and critiques of your trading performance**
  Successful trading comes with not only learning and preparing but also with critiquing one’s performance. This will help you build a “what to do and not do” type of trading diary to guide you through various market environments in the future.
- **See how you stack up against the competition**
  We’ll rank participants based on profitability after each session and for all sessions combined. Be the most profitable overall trader and win a prize from EMI!

The program will use oil examples in each session with actual historical data selected to demonstrate many of the key points of trading along with the risks. EMI’s trading simulator will also incorporate up-to-date information as well as simulated examples to demonstrate all of the main points in the course. You will have the opportunity to develop your own specific trading strategies most suited to meet the objectives of your company and then test your model in the trading simulator.

Simulated Oil Hedging: A Live Simulated Oil Hedging Experience

Course Length: 2 Days      CPE Credits: 13      EMI Credits: 6      Prerequisites: Assumes some basic understanding of oil hedging

Get hands-on oil hedging experience using various historical scenarios! This exciting two-day training will give you the chance to learn by doing. We’ll start by covering fundamental and technical analysis. You’ll get a thorough understanding of the main oil instruments traded in the oil complex and how to trade these instruments. Armed with what you’ve learned, you’ll put your skills to the test using EMI’s Trading Simulator:

- **Participate in several simulated hedging sessions**
- **Face various real-world trading scenarios**
  These scenarios will use live data and actual historical data that has been selected to let you experience the pain and gain in hedging under conditions that have actually occurred.
- **Get insightful, constructive comments and critiques of your trading performance**
  Successful hedging comes with not only learning and preparing but also with critiquing one’s performance. This will help you build a “what to do and not do” type of hedging diary to guide you through various market environments in the future.
- **See how you stack up against the competition**
  We’ll rank participants based on profitability after each session and for all sessions combined. Be the most profitable overall trader and win a prize from EMI!

You will leave this course with a solid and immediately useful understanding of:

- The basics and fundamentals of oil hedging
- The vocabulary of oil hedging
- The what, why, how and who of oil hedging
- Real-time hedging examples for all products in the oil complex
Oil Storage Economics and Fundamentals

Course Length: 1 Day  
CPE Credits: 6  
EMI Credits: 3  
Prerequisites: None

FROM WELLHEAD TO FINAL CONSUMPTION POINTS AROUND THE WORLD

The oil industry is very complex and international. And with the worst collapse in oil prices since the Great Recession of 2008/09, it has become even more complex, with many more drivers impacting price on a daily, if not hourly, basis. Storing oil as a virtual or future supply source is driving many of the important aspects of this industry, including every trading, purchasing and hedging decision.

No matter what infrastructure level you’re working in, one thing is certain...storing oil will play a major part in your everyday thinking and decision making throughout 2015 and beyond.

EMI’s Oil Storage Economics and Fundamentals course will give you the insight and knowledge you need to be competitive with your peers both inside and outside your company.

Understanding oil storage is critical to operating profitably in this highly volatile and dynamic industry. EMI’s Oil Storage Economics and Fundamentals course will delve into every detail of storing oil, from the wellhead to the final consumption points around the world. You’ll be introduced to all of the important relationships, from the various macro and micro fundamentals to the intricacies of the various financial and economic factors associated with storing oil.

Topics covered include:

• The economics of storage
• What drives storage economics
• The impact on price from rising storage levels
• The impact on price from the inventory side
• How the micro fundamentals from around the globe impact storage
• How the non-economic drivers like shipping and transportation impact storage
• The impact OPEC has on storage
• What happens when the storage trade is reversed

You’ll be exposed to specific market analysis for each and every step in the process of identifying, evaluating and developing oil storage strategies. This will allow you to develop your own specific understanding of the many drivers of storage trades and how that information is suited to meet the objectives of your company.
Fundamentals of the Petroleum Industry

Course Length: 2 Days      CPE Credits: 12      EMI Credits: 6      Prerequisites: None

EMI packs this course with practical experience and powerful learning examples. Join us as we explore the entire petroleum complex, from crude production to the refinery and down to the pump. You will understand the complexities of one of the world’s most exciting and dynamic industries. You’ll learn about crude oil, from exploration to production, and about the refining process, from basic distillation to complex hydro-cracking. We’ll cover pipeline transports and U.S. spot markets – trading in the intermediary markets and the critical role these components play in the downstream infrastructure. We’ll also explore wholesale markets and exchanges. And we’ll highlight everything from proprietary additives to exchange agreements between oil suppliers used to keep our nation supplied. Finally we’ll dive into the retail landscape and examine the players, trends, brand value and margins and the pricing components that make up a street price in any given market.

Topics covered include:

- Key elements of downstream oil supply, wholesale and retail
- Flow from the refinery to the street
- Refinery basics
- Critical price benchmarks
- Basics of trading and risk management
- Major U.S. energy policy
- Valuation of refined products
- Spot market, wholesale rack market, the retail landscape, deal strategy, structure and traditional and nontraditional purchasing
- Key players
- Fundamental pressure on price and supply
- New boutique and alt fuel trends
- Technical pressures on price
- Political pressures on price and supply
- Downstream trends and current market outlook
- Simple, complex and very complex refinery configuration
- Terminology
- Pipeline transport and U.S. spot markets in the intermediary markets, and the critical role these downstream components play in the infrastructure
- Wholesale markets and exchanges, from proprietary additives to the exchange agreements between oil suppliers used to keep our nation supplied
- Retail landscape – examining the players, trends, brand value, margins and pricing components that make up a street price in any given market
- Branded vs. unbranded trends, plus the emerging role of hyper-marketers

Oil Industry Economics: From Wellhead to Gas Pump

Course Length: 2 Days      CPE Credits: 13      EMI Credits: 6      Prerequisites: None

A global battle for market share is raging in the oil industry as we cycle through the second major price collapse in less than a decade. With the United States taking the lead, North America has become the new powerhouse in world oil production. 2014 saw the United States breaking all-time production records, but will it continue? And where will we go from here? The Saudi’s may be weathering the storm just fine but other OPEC member economies are being ravaged by low prices.

Never has it been so important to understand the dynamics that drive the industry. EMI’s course Oil Industry Economics: From Wellhead to Gas Pump will explain the influences that establish the global price of crude oil in the upstream and every facet of refined product in the downstream.

The oil industry is very complex with international economics driving every aspect and every decision. This course will delve into the detailed economics from the wellhead to the final consumption point. With this course, we will assemble the key operational characteristics and associated economics of each major industry component giving you a solid understanding of the complete industry.

- Exploration and production economics
- The economics of producing or temporarily shutting in oil
- Economics of gathering oil
- Economics of moving oil to the manufacturing sector from all major methods
- Economics of the new freight markets
- Basic refining economics of various types of refineries and refineries.
- Refinery economic optimization
- Economics of moving refined products to various spot markets by various methods…truck, rail, pipeline, barges and ocean-going vessels
- Economics of moving products to wholesale and retail levels
- How the economics relate to various pricing methods at each level
- Economics of storing crude oil
- All about the economics of crude oil arbitrage trading
- Macro economics of worldwide energy complex
Intro to Energy Markets: Focus on Oil, Gas and Power

**Course Length:** 2 Days  |  **CPE Credits:** 12  |  **EMI Credits:** 6  |  **Prerequisites:** None

Gain a thorough understanding of the oil, natural gas and power industries. *Intro to Energy Markets* will introduce you to these dynamic and evolving industries and expose you to all of the critical need-to-know industry components.

The course describes the power, natural gas and oil industries across four major aspects:

- Origins and destinations of gas, power and oil
- Exploration through distribution
- Buying, selling and marketing
- Transportation

Additionally, this course highlights the intertwined relationships of:

- Market macro- and micro-fundamentals
- Purchasing and selling methodology
- Producing and marketing
- The various market relationships that impact the everyday aspects of the business

**Specific topics covered include:**

- Power transmission – electron flow from the plant to the end user
- Natural gas distribution – gathering field to the burner tip
- Oil upstream and downstream – production well to the pump
- Locational marginal power economics
- FERC orders and their impact on the natural gas industry
- The players and where they fit in the infrastructure

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Energy In A Day

**Course Length:** 1 Day  |  **CPE Credits:** 7  |  **EMI Credits:** 3  |  **Prerequisites:** None

Volatile fluctuations have propelled oil and energy prices into uncharted territory over the past several years and now impact every aspect of the national economy. This fact presents a myriad of threats and opportunities regardless of who you are. This course is your first step toward understanding this complex industry and applying it to your situation.

*Energy in a Day* is a whirlwind tour of petroleum, natural gas, and power delivered in one day. This beginner-level course starts with a thorough understanding of oil production and refining and builds from there. Natural gas is explored in the context of its similarities and differences to oil production. The last product examined is electric power with its own systems of generation and distribution. This trio of energy products touches upon every aspect of life and commerce in the United States. With a base understanding of physical markets in place, the course moves to the financial arenas of energy trading. Here the course takes attendees through a basic understanding of futures markets and how they are used by industry.

**Subjects covered include:**

- Crude oil exploration
- Oil production
- “Peak Oil”
- Basic fuel chemistry
- Refining processes
- Refining economics/big oil motivations
- Pipeline operations
- Terminal operations
- Natural gas production
- Natural gas pipeline distribution
- Underground gas storage
- Basic electric power generation
- Generation sources
- Electric power distribution
- Exchange traded futures
- Exchange traded options
- Simple uses of hedging
- Over-the-counter derivatives
Introduction to Energy Trading and Hedging

Course Length: 2 Days  |  CPE Credits: 12  |  EMI Credits: 6  |  Prerequisites: None

In two dynamic, information-packed days, you’ll develop a solid foundation in energy trading and hedging as you examine all of the instruments, tools and techniques available to the energy trader today. You’ll explore the nuances and quirks specific to the energy markets, understand the risks and rewards across sectors, and develop a macro view designed to improve your timing and help you develop a successful trading program. Topics covered include:

- The basics and fundamentals of energy trading
- Energy market structure, market behavior and participants
- The intertwined relationship of fundamentals and futures
- Technical and fundamental analysis; combining the two
- System development and testing
- Real-time trading examples
- Energy trading and risk management instruments, tools and techniques, and how they work
- Getting started in hedging energy
- Governance and controls to successfully integrate a program into your company's operation
- How to value the risk and periodically assess the success of the program
- How to manage a hedge program using a nondiscretionary model approach
- Risk measurement
- Defining your price/margin exposure
- Quantifying the volume of energy
- The myths and what companies are really doing to protect margins
- Reviewing the structure of your supply contracts
- Assessing the risk profile of your company
- Establishing your corporate risk policy and obtaining board approval
- Designating an individual(s) responsible for hedging
- Establishing a futures account and an OTC account
- Designing a risk management program
- Defining your company's hedge objectives and strategies
- Understanding the daily mark-to-market
- Monitoring and adjusting your hedge strategy

Energy Trading Fundamentals

Course Length: 2 Days  |  CPE Credits: 12  |  EMI Credits: 6  |  Prerequisites: None

Taught by leading energy experts, this in-depth course is filled with tips, techniques and insight that only years of successful energy trading experience can bring. In two dynamic, information-packed days, you’ll develop a solid foundation in energy trading as you examine all of the instruments, tools and techniques available to the energy trader today. You’ll explore the nuances and quirks specific to the energy markets, understand the risks and rewards across sectors, and develop a macro view designed to improve your timing and help you develop a successful trading program. Topics covered include:

- The basics and fundamentals of energy trading
- The vocabulary of trading
- The what, why, how and who of trading
- Energy market structure
- Market participants
- The intertwined relationship of fundamentals and futures
- Technical and fundamental analysis; how and when to combine the two
- Market behavior
- System development and testing
- All about CME NYMEX and ICE
- Various energy trading instruments, tools and techniques, and what is encompassed in the profession of energy trading
- How all the tools and techniques work
- How these tools can be applied to the development of a successful trading program
- Real-time trading examples for all products in the energy infrastructure, using the various technical tools and techniques
**Intro to Energy Trading for the Non-Trader**

*Course Length: 1 Day | CPE Credits: 8 | EMI Credits: 3 | Prerequisites: None*

Are you aware of the myriad of instruments available for trading, and do you know the implications of each tool and technique as it relates to your specific job function? Have you ever wondered how the CME NYMEX and ICE actually work? How floor and electronic trading operations function? These are but a few of the questions that will be answered in this action-packed, comprehensive program designed for the non-trader.

This dynamic program will help you develop a solid foundation in energy trading as you examine all of the instruments, tools and techniques available to the energy trader today. You’ll explore the nuances and quirks specific to the energy markets, understand the risks and rewards across sectors, and develop a macro view designed to improve your trading knowledge and help you understand successful trading programs. Topics covered include:

- The basics and fundamentals of energy trading
- The vocabulary of trading
- The what, why, how and who of trading
- Energy market structure
- Market participants
- The intertwined relationship of fundamentals and futures
- Technical and fundamental analysis; how and when to combine the two
- Market behavior
- System development and testing
- All about CME NYMEX and ICE
- The various energy trading instruments, tools and techniques, and what is encompassed in the profession of energy trading
- How all of tools and techniques work
- How these tools can be applied to the development of a successful trading program
- Real-time trading examples for natural gas using the various technical tools and techniques

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**Commodity Trading Fundamentals**

*Course Length: 2 Days | CPE Credits: 12 | EMI Credits: 6 | Prerequisites: None*

_Taught by leading commodity experts, this in-depth course is filled with tips, techniques and insight that only 30 years of commodity trading experience can bring._

In two dynamic, information-packed days, you’ll develop a solid foundation in commodity trading as you examine all of the instruments, tools and techniques available to the commodity trader today. You’ll explore the nuances and quirks specific to the commodity markets, understand the risks and rewards across various asset classes and develop a macro view designed to improve your timing and help you develop a successful trading program! Topics covered during this course include:

- The basics and fundamentals of commodity trading
- The vocabulary of trading
- The what, why, how and who of trading
- Energy market structure
- Softs market structure
- Agricultural market structure
- Metals market structure
- Market participants
- The intertwined relationship of fundamentals and futures
- Technical and fundamental analysis; how and when to combine the two
- Market behavior
- Introduction to system development and testing
- All about the futures exchanges: ICE and CME Group
- Real-time trading examples for all products in the commodity infrastructure
- Using the various technical tools and techniques
- What the various commodity trading instruments, tools and techniques are and what is encompassed in the profession of commodity trading
- How all of the tools and techniques work
- How these tools can be applied to the development of a successful trading program
- Real-time trading examples for natural gas using the various technical tools and techniques
Energy Risk Management

Course Length: 2 Days | CPE Credits: 13 | EMI Credits: 6 | Prerequisites: None

Gain comprehensive exposure to energy risk management tools and strategies, macro- and micro-market fundamentals, margin preservation, key drivers, manufacturing and marketing and cutting-edge purchasing techniques that drive success in the energy markets.

- Learn the unique steps you should take NOW to reduce price exposure, manage risk and guard against price spikes
- Define your price/margin exposure
- Quantify hedge base percentage
- Review the structure of your supply contracts
- Assess the risk profile of your company
- Learn how to implement hedge strategy
- Define the hedge objectives of your company
- Establish your corporate risk policy and obtain board approval
- Establish an OTC account
- Design your risk management program
- Determine the appropriate hedge strategies for your company
- Develop daily mark-to-market
- Monitor and adjust your hedge strategy

Specific purchasing and risk management objectives will be discussed along with expert hedging strategies and policies. This will allow you to develop specific hedge strategies most suited to meet the objectives of your company. The course will also elaborate on the corporate policies, procedures, board resolutions, FASB 133 requirements and checks and balances required to meet the most diligent auditor’s requirements.

Futures, Options and Derivatives

Course Length: 2 Days | CPE Credits: 13 | EMI Credits: 6 | Prerequisites: None

Have you hedged too early? Have you applied the wrong tools for trading? Are you aware of the myriad of instruments available for trading and hedging, and do you know the implications of each tool and technique? Have you ever wondered how the CME NYMEX actually works and how the trading floor functions? These are just a few of the questions that will be answered during this dynamic two-day course.

You’ll leave this course with a practical yet rigorous understanding of what futures, options and derivatives are, how they work, how they are used and how they can be applied to YOUR SPECIFIC BUSINESS. Topics covered include:

- The vocabulary of futures and options
- The what, why, how and who of futures markets
- The market participants
- The mathematics of futures and options premiums
- All about CME NYMEX and ICE
- Differences and similarities of futures, options and derivatives
- Real-time trading and hedging examples for all products in the energy infrastructure using futures, options and derivatives
- Correlation and basis analysis
- EFPs and alternate delivery procedures
- Setting up a futures, options or derivatives account
- Types of exchange orders
- Margin
- Brokers
- Contract specifications
- Black-Scholes Model
- Spot and futures market relationships
- How option prices change when market conditions change
- The latest tools and techniques for risk managers
- Historical and implied volatility
- Option pricing relationships
- History of the CME NYMEX
Trading OTC Derivatives: Options and Linear Instruments

Course Length: 2 Days  |  CPE Credits: 11  |  EMI Credits: 6  |  Prerequisites: Futures, Options and Derivatives and energy trading strategies courses or equivalent experience

You’ll leave this course with a comprehensive understanding of the various strategies employed in the world of over-the-counter derivatives. The course is designed to help management, traders, risk managers and back-office personnel in the energy industry gain a thorough understanding of what OTC financial instruments are, when they should be employed and how they can be managed successfully. Topics covered include:

- What OTC derivatives are and when to use them
- When to use and how to price various linear and nonlinear OTC derivatives
- Weather derivatives
- Types of basis risk, how basis is calculated and how to decide if basis risk should be hedged
- What basis swaps are and when they should be used
- Optionality risk and the “Greeks” (delta, gamma, vega, theta and rho)
- Historical and implied volatility (including volatility smiles)
- Option pricing models
- Volumetric vs. delta hedging
- Directional, volatility and synthetic option spread strategies
- Option exercise styles
- Exotic options
- Forward curves, backwardation and contango markets
- Matching hedge strategy to price and volatility forecasts
- Extendable and cancelable swaps
- Swaptions and costless collars
- Bull call and bear put spreads
- Financed and ratio spreads and backspreads
- Christmas trees
- Time spreads (calendars and jelly rolls)
- Spread, compound, average-priced, one-touch, digital, swing, embedded-swing and look-back options
- Double barriers and double-barrier boxes

Trading OTC Advanced Options and Derivatives

Course Length: 2 Days  |  CPE Credits: 11  |  EMI Credits: 6  |  Prerequisites: Futures, Options & Derivatives, Trading OTC Derivatives: Options & Linear Instruments, & energy trading strategies courses or equivalent experience

Get a comprehensive understanding of the various trading strategies employed in the world of over-the-counter derivatives. This course is designed to help management, traders, risk managers and back office personnel in the energy industry gain a thorough understanding of what these financial instruments are, when they should be employed and how they can be managed successfully.

Attendees will get a practical yet rigorous understanding of various OTC instruments including vanilla swaps, weather derivatives, extendible swaps, cancelable swaps, basis swaps, vanilla swaptions, vanilla OTC options and exotic options. The course includes an overview of the different types of OTC instruments, why they are used, pros and cons of OTC derivatives and when specific types of OTC instruments are most suitable.

We then delve deeper into OTC options through an examination of option pricing models along with an in-depth examination of historical and implied volatility. Having firmly established an understanding of the nuances of volatility, the Greeks and option pricing models, we spend the remainder of day two discussing specific option strategies including volatility spreads, synthetics and exotic options.

This course includes four trading simulations.

1. The first trading simulation will familiarize attendees with collars and vertical call and put spreads
2. The second simulation will cover ratios, backspreads, Christmas trees and financed spreads
3. The third simulation will be a real-time mock trading exercise with digital options
4. In our final trading simulation, attendees will work with volatility spreads such as straddles, strangles, iron butterflies and iron condors
Technical Analysis

Course Length: 2 Days  |  CPE Credits: 14  |  EMI Credits: 6  |  Prerequisites: Attendees should have a basic understanding of futures, options and trading

Gain vital knowledge about the latest tools, techniques and tactics for hedging and trading. While using technical analysis can add enormous value to a firm, a lack of understanding can easily lead to disastrous results. This two-day course explains the derivations, applications, strengths, weaknesses and variations of the major technical indicators and techniques. EMI’s Technical Analysis is designed to help traders and risk managers in the energy industry gain a thorough understanding of the most popular and successful techniques and how they can be applied to their specific business. Topics covered include:

• The technical tools and techniques at your disposal to trade and manage the ongoing volatility and the price impact of the various energy markets
• A view of the main elements of technical analysis used for trading discipline, quantifying and managing risk and coordinating with fundamental analysis
• Using trend lines, Japanese candlesticks, support and resistance and retracement levels
• How to analyze and use volume and open interest
• The characteristics of the Elliot wave theory
• Calculating and using moving averages and MACD
• Hedging and speculating with technical analysis
• Using DMIIs, parabolics, stochastics, RSiIs, %R, momentum, market profile and Bollinger Bands
• How to combine indicators and approaches
• Mechanical trading system development: trend-following, counter-trend and combining non-correlated trading systems
• How to eliminate the downside risk without limiting the upside potential
• Knowledge through real-world trading and hedging examples using real-time data with a marked-to-market evaluation
• Harami candlestick reversal pattern

Advanced Technical Analysis

Course Length: 2 Days  |  CPE Credits: 11  |  EMI Credits: 6  |  Prerequisites: Technical Analysis course or equivalent experience

Gain an in-depth understanding of the various strategies employed in the field of advanced technical analysis. You’ll examine a wide array of advanced technical tools and strategies, including what they are and how and when they should be used. Topics covered include:

• The principles of behavioral finance and how these principles can be fully integrated into a trading strategy
• Systematic irrationality of the markets and its application to technical analysis
• Decision-making behavior, prospect theory and cognitive dissonance theory
• Integrating volatility studies with traditional mathematical technical analysis
• Multiple-time-cycle analysis of the markets
• Risk management pyramid including stop losses, volumetric limits, VaR limits, correlation analysis, stress testing and fixed fractional money management
• How to use trend exhaustion indicators including TD Sequential and TD Combo
• How to combine DeMark's Trend Exhaustion Indicators with "traditional" percentage oscillators
• How to implement DeMark's TD Carrie and TD Setup Trend as Mechanical
• Trading Systems
• How to use TD Risk Lines as support, resistance and pivot levels
• Mechanizing Elliott Wave with the Elliott Wave Oscillator and Profit-Taking Indicator
• Neural networks
• Machine induction methods
• Applying fractals and self-similarity to technical analysis.
• Genetic algorithms
• Building Trend-following trading systems with Ichimoku Clouds
• Chaos theory and Fuzzy logic
• Applying fuzzy logic to candlestick patterns
• Applying neural nets, machine induction methods and genetic algorithms to mechanical trading systems
• Making money with mechanical trading systems. In this real-time trading simulation you will analyze the energy markets with mathematical technical indicators, develop a short-term trading system to capitalize on probable market behavior over the next 24 hours and see how various trading strategies unfold in real time.
• Developing trading models with CQG software
• Matching the system to your personality
• Cutting-edge insights in the field of trader psychology
• Avoiding the pitfalls in model development
• Back-testing and forward-testing of models
• Optimization studies
• Development of trending: Following trading systems
• Development of mean reversion trading systems
• Development of mean reversion systems with trending-following filters
• Combining negatively correlated trading systems
• Regret Minimization Techniques: What they are, how to develop trend-following and countertrend models that incorporate these strategies.
Best Practices and Financial Risk

Course Length: 2 Days | CPE Credits: 14 | EMI Credits: 6 | Prerequisites: Futures, Options and Derivatives and energy trading strategies courses or equivalent experience

Get an integrated framework to understand various types of financial risk and how to measure, monitor and manage them. **Includes a detailed look at the implications of Dodd-Frank on the trading of OTC energy derivatives.** The course provides attendees with a practical yet rigorous understanding of business ethics and reputation risk, compliance and regulatory risk (including Sarbanes-Oxley Act of 2002 and FAS 133 compliance issues), legal risk, systemic risk, operational risk, market risk, liquidity risk and credit risk. In addition, the course covers tools for managing market risk (including value-at-risk and stress testing), and implementing broad-based and specific best practices and trading controls. Finally, the course provides detailed case studies of both failures in trading controls as well as a SOX compliance case study. Topics covered include:

- History of the Securities and Exchange Commission and how it led to the Sarbanes-Oxley Act
- **Implications of Dodd-Frank on trading of OTC energy derivatives**
  - Cutting-edge issues in compliance and regulatory risk including FASB 133 and an in-depth study of SOX
  - What legal and systemic risk are and how these issues affect companies within the energy industry
  - Different types of market risk and how hedging of outright price risk results in basis and optionality risks
  - The "Greeks"

- All of the tools at your disposal to manage market risk including traditional, position-based tools such as stop loss placement and volumetric limits as well as portfolio-based tools such as mark-to-market, Value-at-Risk, stress testing and fixed fractional money management

- Application of statistical theories and how they relate to calculation of Value-at-Risk including assumptions of a normal distribution as well as how non-normal distributions (skewness, kurtosis and stable Paretian distribution) effect Value-at-Risk calculations. Included are tools such as Extreme Value Theory and GARCH which are specifically designed for measuring the tail of a stable Paretian distribution.

- Models for calculating Value-at-Risk including the Linear model, the Delta-Gamma model, the Historical Simulation model and the Monte Carlo Simulation model. Also included is a discussion of the pros and cons inherent in the employment of each of the four major types of VaR models.
- Application of theories of financial mathematics and how they relate to calculation of Value-at-Risk including the difference between a VaR measure, VaR model and a VaR metric. Also covered are portfolio mapping, inference procedures and transformation procedures.
- Modeling for price shocks and paradigm shifts
- What liquidity risk is and how to integrate it within a dynamic market risk management program
- The importance of implementation of broad-based and specific trading controls in order to reduce operational risk
- Credit risk management issues including various credit risk models (such as CVaR, KMV, Z-Score, Econometric, Actuarial and Rating Agency) and mitigation tools (including credit derivatives)
- Financial risk case studies: Cray Inc., Barings Bank and Enron
**Introduction to Petroleum Hedging**

*Course Length: 1 Day | CPE Credits: 8 | EMI Credits: 3 | Prerequisites: None*

*Introduction to Petroleum Hedging* is the perfect primer for anyone looking to gain base-level knowledge on the subject of energy price risk management and fuel hedging. This one-day course walks attendees through an introduction to the major topics necessary to understand petroleum hedging. Topics will not only be addressed in an academic matter, but also will be put into context as we construct and walk through case study examples. The course focuses on using regulated exchange-traded instruments. If you have ever had an interest in understanding hedging or risk management in the petroleum industry, this course is your perfect opportunity. Topics covered include:

- The definition and need for hedging
- Industry needs for risk management
- Regulated exchange functionality
- Futures trading
- Forward month trading
- Inter-market connections
- Defining market correlations
- FASB requirements
- Basis definition and calculation
- Cash management
- Regulated exchange options

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**Oil Spread Trading**

*Course Length: 2 Days | CPE Credits: 12 | EMI Credits: 6 | Prerequisites: Basic understanding of oil trading*

The oil industry is very complex and international, and since the worst economic downturn since the Great Depression it has become even more complex with many more drivers impacting the flat price on a daily, if not hourly, basis. The various interrelationships drive every aspect of this complex industry and every trading, purchasing and hedging decision. That said the world of oil spread trading has not changed all that much during these very volatile and changing times.

This critical two-day course will give you an integrated framework for trading oil spread instruments from a financial and physical perspective.

During this course the attendees will achieve a very rigorous understanding of the what, who, and how of successfully trading oil spread instruments on the three main domestic and international oil trading venues:

- Regulated futures and options
- Bilateral and cleared derivatives markets
- International physical crude oil and refined products markets

This course is designed to help traders, managers and trading support personnel in the oil and trading industry gain a more detailed understanding of the instruments, tools and techniques available for trading the many different spreads, and how these instruments, tool and techniques perform under various scenarios.

You will leave this course with a solid and immediately useful understanding of:

- The various oil spread trading instruments, tools and techniques and what is encompassed in the profession of oil spread trading
- How all of the tools and techniques work, and how they can be applied to the development of a successful spread trading program
- The physical and technical tools and techniques at your disposal to trade and manage the ongoing volatility and price impact of the various spread markets around the world
- A view of the main elements of the various techniques used for spread trading from a disciplined perspective while quantifying and managing risk and coordinating with fundamental analysis
- How to combine physical and technical indicators, approaches and techniques that work for the various oil spread markets around the world
Oil Market Pricing Interrelationships

Course Length: 2 Days | CPE Credits: 12 | EMI Credits: 6 | Prerequisites: None

If you are in the oil industry or even thinking about being in this dynamic industry, you need to register for this course to understand and grasp all the tools needed to survive. Irrespective of the infrastructure level you are working in, it is certain that both internal and external relationships will play a major part in your everyday thinking and decision making.

This two-day course will introduce you to all the important interrelationships, from the various macro- and micro-fundamentals to the intricacies of the various financial and economic indicators. The course approaches the price and direction of oil from many perspectives...supply, demand, inventories, value of the U.S. dollar and global equities as well as various economic indicators. It also approaches the oil market with a view of the main elements that not only impact price and volatility but also form the decision-making tools needed to manage price, volatility and, most important, the margins of your particular business.

This course intertwines the relationships of:
- Market macro- and micro-fundamentals
- Supply, demand and inventories
- Global equity markets
- U.S. dollar and its relationship to currencies around the world
- The impact of economic growth and contraction and how various indicators provide guidance for the direction of oil prices.
- Techniques to put all the above pieces together

Some of the areas we will focus on include:
- All about the economics of oil trading
- Macroeconomics of worldwide energy complex. What is driving oil prices?
- The impact on price from the supply side
- The impact on price from the demand side
- The impact on price from the inventory side
- How micro-fundamentals from around the globe impact price
- How noneconomic drivers like shipping and transportation impact price
- How the myriad of various economies, both emerging and developed, impact price
- How various central bank strategies that are employed to manage the global economies impact oil prices
- The performance of oil prices under various economic cycles
- The impact of oil prices from moves in the various global equity markets
- How and why the U.S. dollar impacts prices
- The impact on prices if OPEC moves away from the U.S. dollar as the currency for dealing in oil
- How and why other commodities impact oil prices
- Is oil the new inflation hedge?

Physical Crude Oil and Products Trading

Course Length: 2 Days | CPE Credits: 12 | EMI Credits: 6 | Prerequisites: None

This highly interactive and intensive two-day physical crude oil and products trading course will provide the attendees with a comprehensive understanding and knowledge base of the U.S. and international physical oil trading business from the perspective of both the trader and the supply analyst. EMI’s unique program delves into the details of the physical market on day one, including discussions on the fundamentals, major crude oil and products markets, characteristics of the markets, operations and logistics, freight trading and distinct differences between the physical and financial markets. On day two the program focuses on making money. Finally, the program will end with a very exciting simulated trading exercise. Topics covered include:

- Crude oil and products supply and demand
- Crude oil evaluation and selection
- Oil refining and products
- Discussion of various pricing mechanisms
- Physical oil markets and pricing
- Operations and logistics
- Freight trading
- Comparison of physical and financial trading
- Arbitrage/spread trading
- Refinery trading and supply
- Physical outright (long/short) trading
- Approach to trading physicals
- Simulated trading session

Plus you will:
- Learn about supply and demand for crude oil and products
- Understand the principles of crude oil evaluation and selection
- Develop your knowledge of oil refining and products
- Explore physical oil markets, pricing formation, shipping, operations and contracts
- Gain knowledge about futures, swaps, options and over-the-counter markets
- Become familiar with trading techniques, terminology, hedging and physical trading
- Develop expertise in management of market exposure and price risk
- Improve your negotiation skills
- Understand the commercial aspects of the downstream oil business
Global Oil Supply and Demand Balance

Course Length: 2 Days  CPE Credits: 12  EMI Credits: 6  Prerequisites: None

UNDERSTAND GLOBAL SUPPLY & DEMAND BALANCE AND THE IMPLICATIONS ON MARKET PRICES.

Irrespective of the infrastructure level you are working in, it is certain that the changing fundamentals of the oil market will play a major part in your everyday thinking and decision making going forward. The US and global crude oil supply situation is in the midst of a growth spurt not seen in years. Geopolitical risk to oil supply is at an all-time high. The flat price and spread value interrelationships are in the midst of a major transition to what could be called a bit toward history and a bit toward developing a so-called “new normal” relationship.

Supply and demand have been relatively in balance for the last several years as the US crude oil revolution continues to gain momentum while the global economy continues to grow at a slower than needed pace. At some point in the not-too-distant future demand will pick up and the balances will get tighter.

Many new factors are driving both the flat price of crude oil as well as the various spread and inter-market pricing relationships, from the most widely traded Brent/WTI spread down to the many international crude oil and product spread relationships. Fundamentals are playing an increasingly important and timely role in setting and establishing all of the various relationships that need to be understood if you are operating in this very dynamic global oil environment.

Some of the areas we will focus on during this critical 2-day course include:

- A detailed discussion on the parts of the global supply and demand balances
- The source of all of the data
- What is good and timely data; what is flawed data
- The evolving US crude oil revolution and the impact it is having on the supply side of the equation
- How the changing refining sector impacts the global supply and demand models and ultimately the various pricing interrelationships between crude and refined products
- The changing demand picture and who is now the incremental consumer, and the implications it has on the model
- The most important element of the balances… macro and micro inventory data
- The market impact from the supply data
- The market impact from the demand data
- The market impact for the inventory data
Crude Oil Market Transformation

Course Length: 2 Days   CPE Credits: 13   EMI Credits: 6   Prerequisites: None

LEARN HOW THE US CRUDE OIL RESURGENCE IS IMPACTING GLOBAL SUPPLY, DEMAND, LOGISTICS AND TRADING.

If you are in the oil industry or even thinking about being in this dynamic industry, you need to register for this course to understand and grasp all of the tools needed to prosper in the fast moving and changing crude oil supply landscape.

The North American and global crude oil supply situation is in the midst of a growth spurt not seen in years. Crude oil production is projected to continue to rise over the next decade on top of the production increase experienced so far. According to the EIA, tight oil production will lead to growth in US domestic production of 2.6 million bpd between now and 2019. The implications of just the US revolution is changing the dynamics throughout the entire crude oil infrastructure, from production to logistics to refining to the impact on the flow of international crude oil around the world.

This critical course will give you an integrated understanding of the quickly changing North American and global crude oil supply picture. During this course you'll achieve a very rigorous understanding of the what, who, and how at every level of the US, Canadian and global crude oil infrastructure and what it means to the market participants both domestically and globally.

The course is designed to help participants at all levels of the industry (including but not limited to traders, managers and trading support personnel in the oil and trading industry) gain a more detailed understanding of all of the implications on every level of the energy infrastructure both domestically and globally. At the end of this course, you'll be able to understand the tremendous amount of changes going on in the crude oil sector, or what can be called the “new normal” in US and global crude oil markets... when the market ultimately gets to a steady-state level.

The oil industry is very complex and international, and it is becoming even more complex as changes in distribution are occurring on an almost weekly basis. The changing crude oil spread interrelationships drive every aspect of this complex industry and every trading, purchasing and hedging decision. The world of crude oil processing, trading and hedging is changing quickly in an environment that is already very volatile and, in many instances, far from stable.

- Macroeconomics of the worldwide energy complex. What is driving oil prices?
- The evolving US crude oil revolution
- The evolving Canadian crude oil situation
- The implications of a crude oil independent North America
- The changing North American logistics and crude oil distribution system
- The impact of new pipeline capacity as well as reversals
- The resurgence of the rail industry in the crude oil distribution network
- The changing international trade flow and how it changes the economics around the world
- The changing valuation of various crude oil categories and the implications on the refining side of the business
- The changing Brent/WTI spread relationships
- The evolving Cushing and midwest crude oil inventory pattern
- A thorough understanding of how the changing crude oil landscape is changing all of the pricing interrelationships and what that means to the entire global oil markets
- And much more
Refining 101 (Non-Technical)

Course Length: 2 Days | CPE Credits: 12 | EMI Credits: 6 | Prerequisites: None

The refinery is at the center of the petroleum industry, linking all upstream and downstream activities. The refinery provides the key conversions from crude oil and other feedstocks into an array of petroleum products needed by the energy marketplace. This course presents a "low-to-mid-tech" view of the basics of petroleum refining, the processing units that make up typical refining configurations in world markets and the key factors comprising the economic drivers of refinery operations.

There are about 150 operating refineries in the U.S., and their technology, processes and market significance vary widely. EMI will guide you through each complex refining stage of distilling diverse crude grades into a host of refined products from gasoline to residual products.

The key processing operations involved in a refinery will be discussed. We'll apply just enough "chemistry" to understand the big picture of what conversions are taking place and why. You will also learn how value is added in the refinery, and you'll learn about the derivation of "relative value" among the various crude oil and feedstock choices in the global marketplace. Topics covered include:

- Crude oil characteristics
- Oil sands production
- Refinery types and degrees of complexity
- Distillation (atmospheric and vacuum)
- Cracking (thermal and catalytic)
- Hydrogen treatment
- Alteration (such as catalytic reforming and isomerization)
- Unification (such as alkylation and polymerization)
- Gas treatment
- Hydrogen production
- Primary product pools
- Alternative energy sources
- Blending operations and primary product pools

Refining 201

Course Length: 2 Days | CPE Credits: 14 | EMI Credits: 6 | Prerequisites: EMI's Refining 101 (Non-Technical) Course

Designed for intermediate-level professionals and for those who have completed EMI’s Refining 101 (Non-Technical) course.

The refinery is at the center of the petroleum industry, linking all upstream and downstream activities. The refinery is where the conversion of the various crude oils into the petroleum products needed by society takes place. This course presents a more technical view of the chemistry, catalysts and units involved than is covered in our Refining 101 (Non-Technical) course.

Specific topics covered include:

- Types of crude oil (including syncrude) and their properties and characteristics
- How crude oil is processed in the field
- Chemistry of refining (with emphasis on the hydrocarbon molecules)
- Catalysts (how they work, promoters and inhibitors)
- Refinery types and complexity
- The affect of product specifications on equipment design
- Molecular changes by unit
- Desalting
- Distillation (atmospheric, vacuum, catalytic, azeotropic)
- Other separation techniques
- Thermal cracking (steam, visbreaking)
- Severe thermal cracking (coking)
- Catalytic cracking
- Severe catalytic cracking (hydrocracking)
- Unification processes (alkylation and polymerization)
- Alteration processes (isomerization)
- Catalytic reforming
- Solvent Refining (including aromatics extraction and amine treatment)
- Hydrotreating
- Hydrogen production
- Sulfur production
- Other functions such as blending, waste water, automated control systems, and safety
- Profitability
**Midstream Oil and Gas Fundamentals**

**Course Length:** 2 Days  |  **CPE Credits:** 13  |  **EMI Credits:** 6  |  **Prerequisites:** None

The midstream, that vital trading and transportation segment in the oil and gas industry, is changing worldwide and most dramatically in North America. What we know about long-established flows, capacities and differentials that provide transportation and logistics for crude oil and natural gas are being radically redefined with impacts on their respective markets and trading activities.

The recent phenomenal growth of domestic crude oil and natural gas and the need to get the product to market has necessitated the building of vast new pipeline, processing and terminal/plant systems. Many production flow systems are volume-restricted or flow in the wrong direction. This course is about the production flow of crude oil and natural gas, from wellhead to refinery/gas plant to end-user, using North America as a prime example of a sophisticated operational network. International examples are also included. There is also exposure to concepts, tools, terms, players and principles regarding commodity markets, trading activities and corporate structures like Master Limited Partnerships.

*Midstream Oil and Gas Fundamentals* is designed to provide a working knowledge of oil and gas gathering, processing, pipelines and storage facilities. In addition to the operational aspects of the infrastructure, there is examination of the history and evolution and forward trends impacting this sector. Such forward trends include new projects not only for pipelines, marine vessels and rail options but also discussion about LNG (liquefied natural gas) as a key transport option for the fuel of the future (GAS).

Topics this course focuses on include:

- Crude oil and natural gas gathering
- Pipeline infrastructure, operations and trends
- Marine and rail transport options
- Storage facilities and operations
- Crude oil and natural gas marketing and trading
- Evolution of the Master Limited Partnership
- LNG operations, markets and major projects
- Trends toward midstream differentiation
- Transition point – The natural gas future

**Upstream Oil and Gas Fundamentals**

**Course Length:** 2 Days  |  **CPE Credits:** 13  |  **EMI Credits:** 6  |  **Prerequisites:** None

Join EMI for an introduction to the upstream petroleum industry. This course will introduce you to the formation of oil and gas, then move on to how exploration and reservoir engineering activities bring the oil and gas to surface, and finish with how the surface facilities operate just ahead of the sales transaction point. You will learn about risks, technologies, investment decisions and operations in one of the world’s most important industries.

The course is taught in a format that reveals the economics and risk management decisions that are inherent in the industry. Actual examples from the industry will be used to illustrate decision processes. We’ll deliver a high-level view of the technologies employed by the industry, giving even the non-technical attendee a feel for the business.

Special focus on:

- The four requirements for an oil and gas reservoir
- Land lease acquisition and obligations of the operator
- Exploration program planning and goals
- Geologic risk and how it is quantified
- Drilling and how a well is planned
- Vertical vs. directional vs. horizontal drilling choices
- The importance of appraisal work
- What are the key issues in determining how a field is developed
- Definitions of proven, probable and possible volumes
- Reservoir engineering to optimize the recovery
- Special techniques to recover more oil, i.e., waterflooding, miscible gas injection, polymer-surfactant injection and thermal processes
- Where petroleum economics impacts the discovery-appraisal-development-production stages
- The theory of peak oil production … why prices are going upward

For a current schedule of EMI courses, visit www.emi.org or call 215.493.4482
**Intro to Petroleum Geology**

**Course Length:** 2 Days  |  **CPE Credits:** 11  |  **EMI Credits:** 6  |  **Prerequisites:** None

The last few years in the world energy industry have seen the most explosive advances, from deep-sea discoveries, to new frontier discoveries with LNG (liquefied natural gas) options, to revolutionary technology and geologic play developments in shale gas and tight oil. It’s never been more important than now to understand how the exploration and production sector operates and the critical role of the geosciences in its success. *Introduction to Petroleum Geology* will give you this critical understanding.

This course will provide a thorough understanding of the history, the current state of development, and a look into the future of petroleum geology and the energy industry. We will also be examining the key issues of technological advances, new E&P provinces, environmental concerns and market implications.

You’ll understand the changes in the industry relationships and the importance of National Oil Companies, their objectives and their reserves/resource. Plus you’ll gain a broad historical perspective of the industry, including the latest global developments in infrastructure, managing environmental issues and emerging markets like India and China.

**Specific topics covered include:**

- **The Role of the Geologist**
  - Overview geology and earth history
  - Geologist functions and contributions
  - Geology and seismology concepts
  - Tools and terminology

- **The Petroleum System**
  - Origin of hydrocarbons
  - Essential elements of a productive petroleum system
  - Reserve estimation and global reserves outlook

- **Exploration and Production Geology**
  - Exploration data/methods
  - Production data/methods
  - In-class exploration mapping exercise
  - In-class field development decisioning exercise

- **Infrastructure, Market Implications and Future Trends**
  - Infrastructure – pipeline capacity, storage capacity, pipeline expansions
  - Supply and demand equation
  - Locational basis
  - Impact on investment
Transportation Fuels Purchasing

Course Length: 2 Days  |  CPE Credits: 12  |  EMI Credits: 6  |  Prerequisites: None

Get all the information, tools, tips and techniques you need to build an effective and manageable fuel program. This course is designed specifically for the unique fueling needs of your Class 8 LTL, TL and transit fleet. Although it incorporates basic strategies like retail discounts and cost-plus, this course moves well beyond these concepts to the next generation of fuel management. We'll cover everything from bulk strategies that will enhance your buying power to building your own price and retail network through swaps for over-the-road buyers.

This course will arm you with a logical path of fundamental and technical education on how petroleum markets work. Next, you will learn how to apply that overall knowledge to your company. Finally, you will learn the tools and strategies essential to successfully achieving your company's fueling objectives. Topics covered include:

- How the petroleum industry can work to your advantage
- How to determine your company's price objective
- Reasonable discount/cost-plus targets
- How the forward exchange markets work
- Basic risk management tools
- Correlation indicators between markets
- How to apply risk tools to your company
- How the forward market affects the price you pay
- How to segment the supply chain and where to buy
- Bulk strategies that will enhance your buying power
- Building your own price and retail network through swaps
- Eliminating surcharges to gain competitive advantage

Fuel Supply Chain

Course Length: 2 Days  |  CPE Credits: 12  |  EMI Credits: 6  |  Prerequisites: None

Whether you are in management, a fuel coordinator, inventory clerk, marketing representative, buyer or seller in wholesale or in retail, this course will teach you everything you need to know about the fuel supply chain.

During this course, you will obtain a very comprehensive and analytical understanding of the fuel supply chain, which will allow you to further contribute to the continuing success of your organization.

Our instructor's experiences in all related petroleum areas will allow us to discuss the material in a fully integrated process, avoiding the possible smokestack approach to specific areas or concentration. You will:

- Learn the ABC's of the fuel supply chain
- Become familiar with the basics and interrelationships of the various petroleum markets
- Understand the cost basics differentiating market locations, quality differences and taxes
- Become familiar with how to evaluate fuel commodity equivalents
- Recognize potential to expand business models to include various classes of consumers
- Comprehend the basics of energy conservation and sustainability issues
- Identify the basic resources to obtain metric evaluations

Topics covered include:

- Supply chain links
- Fuel pricing components
- Product transportation logistics
- Alternative energy sources
- Utilization of assets
- Conservation and sustainability issues
- Preferred fueling networks
- Expanding marketing opportunities past FOB opportunities
- Providing energy services as an additional revenue stream
Geopolitics of Energy

Course Length: 2 Days | CPE Credits: 14 | EMI Credits: 6 | Prerequisites: None

Geopolitical events have been at the heart of almost all oil shocks over the last 50 years. Integrating Geopolitical risk into your hedging, trading and analytical operations is a must. Learn how.

**Geopolitics of Energy** will give you an excellent overview of the current state of the world’s energy situation in both the current economy and what is likely to be the so-called “new economy”. What are the problems, exposures and pitfalls from both the producing and consuming sides? What is happening right now and what is on the horizon? Topics covered include:

- The latest on the Iranian nuclear standoff. Are sanctions working? Is the military option getting closer? Is Israel the wildcard? What happens to mid-east balance if Iran does in fact get a nuclear weapon?
- How turmoil in the Middle East still threatens supply and price even now that several dictators are gone.
- Could oil become a political weapon if the major producers suffered a regime change?
- Can the Saudi King’s new strategy work? What is the new heir apparent in Saudi Arabia like? What happens with the next regime change? Can Saudi Arabia continue to keep the populace quiet and peaceful?
- What are the major geopolitical themes influencing oil?
- What role does OPEC play in the world oil markets? What is Saudi’s position in OPEC?
- What are the geopolitical factors influencing Russian and other non-OPEC producers and exporters?
- How stable are the new major producers of the Caspian?
- What are the geopolitical factors influencing policies in consumer nations?
- How secure are energy supplies in the face of a terrorist attack?
- What are the factors creating and impacting volatility of energy prices?
- What are the oil policies of both producing and consuming states?
- What is next for the global economy?
- Will the euro survive?
- Will China have to bail out the global economy again and are they up to the task?
- How do China and the rest of Asia impact the US and Europe?
- The latest on the Iranian nuclear standoff. Are sanctions working? Is the military option getting closer? Is Israel the wildcard? What happens to mid-east balance if Iran does in fact get a nuclear weapon?
- How turmoil in the Middle East still threatens supply and price even now that several dictators are gone.
- Could oil become a political weapon if the major producers suffered a regime change?
- Can the Saudi King’s new strategy work? What is the new heir apparent in Saudi Arabia like? What happens with the next regime change? Can Saudi Arabia continue to keep the populace quiet and peaceful?
- What are the major geopolitical themes influencing oil?
- What role does OPEC play in the world oil markets? What is Saudi’s position in OPEC?
- What are the geopolitical factors influencing Russian and other non-OPEC producers and exporters?
- How stable are the new major producers of the Caspian?
- What are the geopolitical factors influencing policies in consumer nations?
- How secure are energy supplies in the face of a terrorist attack?
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- Will the euro survive?
- Will China have to bail out the global economy again and are they up to the task?
- How do China and the rest of Asia impact the US and Europe?

Natural Gas and Power Industry Fundamentals

Course Length: 2 Days | CPE Credits: 12 | EMI Credits: 6 | Prerequisites: None

This course provides comprehensive hands-on instruction, lecture and real-life examples that bring to life the entire gas and power market complex. This course provides introductory-level participants with a comprehensive view into the inter-workings of the U.S. gas and power industries. Beginners will learn the essentials and key factors that make up today’s as well as tomorrow’s gas and power markets. Topics covered during this course include:

- Physical properties of natural gas
- Where natural gas is found
- How natural gas is measured
- Where have we been and where are we going: the history and future of natural gas in North America
- The major consumers of natural gas, from home use to manufacturing
- Exploration: the role of geologists and technology
- Drilling: onshore and offshore
- Production, treatment, compression and processing
- Gathering, storage and transmission
- Transportation: construction, safety, operations
- Overview of natural gas marketing processes
- Distribution: how natural gas gets to the burner tip
- Gas Industry Standards Board
- The “players” who make the industry work: suppliers - marketers - brokers - local distribution companies - industrial and commercial end users
- Natural gas futures and OTC derivatives
- Transportation and how it works
- Storage usefulness and seasonal peaking and balancing needs
- Market centers (hubs): services provided
- State of the North American power markets
- Basic industry facts and terminology
- What is the status of power market deregulation and where is it headed?
- How do ancillary services, emissions and renewable mandates affect the power markets?
- Why are the power markets the most volatile of all markets?
- What fundamental factors drive the power markets?
- Market participants and motivations
- What role do fuel prices play in determining power prices?
- What are locational marginal prices and why should I care?
- Market fundamentals
Fundamentals of Power and Gas

Course Length: 1 Day    |    CPE Credits: 8    |    EMI Credits: 3    |    Prerequisites: None

Gain a thorough understanding of the natural gas and power industries. Fundamentals of Power and Gas will introduce you to these dynamic and evolving industries and expose you to all the critical need-to-know industry components. The course describes the natural gas and power industries across four major functions: 1) Origins and destinations of natural gas; 2) Exploration through distribution; 3) Buying, selling and marketing; 4) Transportation.

Additionally, this course highlights the intertwined relationships of: 1) Market macro and micro fundamentals; 2) Purchasing and selling methodology; 3) Producing and marketing; 4) The various market relationships that impact the everyday aspects of the business. Topics covered include:

- Overview of U.S. natural gas and power market macro and micro fundamentals
- State of the power industry
- Power transmission – electron flow from the plant to the end user
- Power economics
- FERC orders and their impact on the natural gas industry
- The players and where they fit in the natural gas infrastructure
- Transportation: moving natural gas to market
- Traditional buying techniques

Natural Gas Fundamentals

Course Length: 1 Day    |    CPE Credits: 7    |    EMI Credits: 3    |    Prerequisites: None

Gain a thorough understanding of the entire natural gas industry, from wellhead to burner tip. The course approaches the industry across four major aspects: 1) Origins and destinations of natural gas; 2) Exploration through distribution; 3) Buying, selling, and marketing; 4) Transportation.

The course highlights the intertwined relationships of: Market macro and micro fundamentals • Purchasing and selling methodology • Producing and marketing • The various market relationships that impact the everyday aspects of the business.

And you'll examine topics such as:

- Physical properties of natural gas
- Where natural gas is found
- How natural gas is measured
- Where have we been and where are we going: the history and future of natural gas in North America
- The major consumers of natural gas, from home use to manufacturing
- Exploration: the role of geologists and technology
- Drilling: onshore and offshore
- Production, treatment, compression and processing
- Gathering, storage and transmission
- Transportation: construction, safety and operations
- Distribution: how natural gas gets to the burner tip
- Overview of natural gas marketing processes
- Gas Industry Standards Board
- The "players" who make the industry work: suppliers - marketers - brokers - local distribution companies - industrial and commercial end users
- Natural gas futures and OTC derivatives
- Transportation and how it works
- Storage usefulness and seasonal peaking and balancing needs
- Market centers (hubs): services provided
Intro to Shale

Course Length: 2 Days  |  CPE Credits: 13  |  EMI Credits: 6  |  Prerequisites: None

A paradigm shift in the natural gas market has occurred due to the development of shale gas production. The shear size and locations of the production areas has made shale gas the most significant change to the North American energy complex in the last ten years. Tight oil production from shale formations is also increasing rates and reserves.

With the pending impact of shale gas on the complex, it is critical to understand all of the implications and issues associated with this new production. The energy professional will need to be well versed in regards to shale production.

This course will provide a thorough understanding of the history, the current state of development, and the future of natural gas shale. We will also be examining the key issues surrounding shale gas production, such as regulatory, environmental concerns and market implications. Many of these issues as well as advances in technology relate similarly to tight oil production.

At the conclusion of the class, participants will have gained a thorough understanding of the dynamics of the development of natural gas shale and the implications on not only the North American market, but globally as well. Topics covered include:

- Exploration and Production
  - History
  - Current status of existing shale plays
  - Seismology and geology
  - Drilling specifics – materials needed, costs, density, schematic steps, well depletion
- Ancillary Services
  - Wastes removal
  - Regulatory
  - Midstream services – gathering, processing, NGLs
- Environmental Issues
  - Fracking fluid, deforestation, ground water contaminants, safety, political pressures
  - Infrastructure – pipeline capacity, storage capacity, pipeline expansions
- Market Implications
  - Supply and demand equation
  - Spot market
  - Forward market
  - Locational basis
  - Impact on investments

Introduction to Liquefied Natural Gas (LNG)

Course Length: 2 Days  |  CPE Credits: 11  |  EMI Credits: 6  |  Prerequisites: None

Understand the dynamics of natural gas and its burgeoning transport via the LNG value chain, the global implications for continued progress in finding new conventional and unconventional gas resources, the environmental concerns and the market implications. Shale gas success is well-established in the lower 48. The shear size and locations of the production areas have made shale gas the most significant change to the North American energy complex in the last ten years.

With the pending impact of game-changing rising reserves and production of gas on the global energy complex, it is critical to understand all of the implications and issues associated with their production and distribution techniques for global supply.

*Introduction to Liquefied Natural Gas (LNG)* will give you a thorough understanding of the history, the current state of development and the future of LNG and its relation to the energy industry. We'll also examine the key issues of technological advances, new natural gas provinces, environmental concerns and market implications. You will:

- Understand the basic relationship of LNG to the natural gas industry and how it operates, including:
  - Exploration
  - Processing
  - Production
  - Infrastructure
  - Consumption
  - Commodity pricing
- Understand the fundamentals of the LNG value chain:
  - Gas field
  - Liquefaction trains
  - Shipping
  - Receiving/re-gasification terminals
  - Related technologies
- Gain appreciation of the revolutionary and rapid changes occurring in the LNG industry from the success of the shale gas in the U.S. to the large gas discoveries on the northwest shelf of Western Australia that are spurring radical changes in planned project investments.
- Learn about the global LNG infrastructure and current developments in the world LNG markets from the traditional Asia-Pacific base to the new emerging markets of India and China.
- Understand specific details of LNG projects from case studies about development as well as studies regarding market development considerations for new entry customers like India, including a brief history/overview of the industry.
Natural Gas Economics 101

**Course Length:** 2 Days  |  **CPE Credits:** 10  |  **EMI Credits:** 6  |  **Prerequisites:** None

*Understand the factors that sustain the price of natural gas in the upstream and every facet of the downstream, including pipelines, utilities, regulators and consumers in North America.*

The natural gas industry is very complex and international, with economics driving every aspect and every decision. This course will delve into the detailed economics from the wellhead to the final consumption point both in North America and around the globe. And you will be able to understand a myriad of the normal, everyday economic decisions from both a strategic and tactical perspective. Questions we’ll be asking and answering include:

- When will the market reach a sustainable plateau with new found production growth of shale plays and the economy still recovering from the global recession in 2008?
- What are the economic drivers for price and production and storage incentives?
- How does the Canadian market vary from the US market?
- What is the short-term and long-term outlook for pricing beyond the futures exchanges?
- You will leave this course with the knowledge you will need to make informed, smart economic decisions, from both a strategic and tactical perspective.

**Specific topics covered include:**

- Exploration of producing economics
- The economics of temporarily shutting in natural gas
- Economics of gathering natural gas
- Economics of moving natural gas to the manufacturing and large consuming sectors by pipeline and LNG tanker
- Basic processing economics that focus on creating pipeline-quality gas while developing market value from waste
- Netback analysis
- Pricing at various levels and economic methods employed
- Economics of storing natural gas
- Economics of producing LNG
- Economics of natural gas arbitrage trading – futures versus storage
- Macroeconomics of the worldwide energy complex
- Current geopolitical factors impacting price
- Internal determinants affecting price

Natural Gas Risk Management

**Course Length:** 2 Days  |  **CPE Credits:** 14  |  **EMI Credits:** 6  |  **Prerequisites:** None

*Natural Gas Risk Management* will help you understand what market factors impact your margins and why you need to manage your company's risk.

You'll examine: *Market macro and micro fundamentals • Natural gas purchasing and selling methodology • Processing and marketing • Futures and options for natural gas risk management • Over-the-counter swaps, options, forwards for natural gas risk management and trading • Techniques to put all of the above pieces together.*

**Specific topics covered include:**

- Establishing a futures account
- Establishing an OTC account
- Establishing relationships with all suppliers
- Designing a risk management program
- Defining the hedge objectives of your company
- Determining the hedge strategies for your company
- Understanding the daily Marked to Market
- Monitoring and adjusting your hedge strategy
- Designating individual(s) responsible for hedging
- Defining your price/margin exposure
- Quantifying the volume of natural gas
- Qualifying the mix and quality of natural gas
- Reviewing the structure of your supply contracts
- Assessing the risk profile of your company
- Establishing your corporate risk policy
- Obtaining board approval of risk policy
Physical Natural Gas Trading

Course Length: 2 Days  |  CPE Credits: 14  |  EMI Credits: 6  |  Prerequisites: None

This highly interactive and intensive two-day class will provide the attendees with a comprehensive understanding and knowledge base of how gas is traded physically among major participants. EMI's unique program delves into the details of the physical markets, operations and logistics, and the distinct differences between physical and financial markets. We'll focus on making money for traders and saving money for buyers. Course attendees will be exposed to arbitrage (spread) trading as well as outright (long/short) trading opportunities. EMI will present approaches that work for physical trading as well as valuing and relating natural gas back to the wellhead. The program will end with a very exciting simulated trading exercise, showing the value of the CME NYMEX as a remarkable and powerful tool to manage and create transactions.

You will:
- Learn about supply and demand for natural gas in various geographic areas of the U.S.
- Explore physical gas markets, pricing information, operations and contracts
- Gain knowledge about futures, swaps, options and over-the-counter markets
- Become familiar with trading techniques, terminology, hedging and physical trades
- Develop expertise in management of market exposure and price risk
- Improve your negotiation skills

Subjects covered include:
- Natural gas supply and demand
- Cost of natural gas from the wellhead to the burner tip
- Discussion of various pricing mechanisms
- Physical gas markets and pricing
- Operations and logistics
- Comparison of physical and financial trading
- Arbitrage/spread trading
- Physical outright (long/short) trading
- Approach to trading physicals
- Simulated trading session

Power 101

Course Length: 1 Day  |  CPE Credits: 11  |  EMI Credits: 3  |  Prerequisites: None

Participants will get comprehensive hands-on instruction, lecture and real-life examples that bring to life the entire power market complex. Our curriculum sets a new standard in higher learning as we delve deeply into the power markets with highly relevant content for today’s and tomorrow’s energy industry.

This course provides introductory-level participants with a comprehensive view into the inner workings of the power industry. Beginners will learn the essentials and key factors that make up today’s as well as tomorrow’s power markets. EMI delivers highly focused insight into the key factors that drive success in power markets. Topics covered include:
- State of the North American markets
- Basic industry facts and terminology
- What is the status of power market deregulation and where is it headed?
- How do ancillary services, emissions and renewable mandates affect the power markets?
- Why are the power markets the most volatile of all markets?
- What fundamental factors drive the power markets?
- Market participants and motivations
- What role do fuel prices play in determining prices?
- What are locational marginal prices and why should I care?
- Market fundamentals
Smart Grid 101

**Course Length:** 1.5 Days  
**CPE Credits:** 10  
**EMI Credits:** 5  
**Prerequisites:** None

This course will show both the liabilities and options of the electric Smart Grid, which can vary dramatically from one geographic area to another. In its contemporary form, the Smart Grid encompasses the facilities, control systems and protocols from the electric generators to the retail customers and their usage patterns. The new Smart Grid will be a target for foreign governments, terrorists, hackers and disgruntled employees that may be intent on causing damage to the U.S. electric grid and utility system integrity. The Smart Grid will also offer a wealth of benefits in energy conservation, control of electric generation, and transmission of energy to best meet customers’ needs economically and dependably. This course will explore the Smart Grid vulnerabilities and implementation options that may best protect and utilize new technologies, with a focus on best practices around the country.

This highly interactive and intensive day-and-a-half program will focus on two areas:

1. **Smart Grid Options**  
   Attendees will gain an understanding of best practices to enhance energy conservation; control and plan electric generation; and transmit electricity from lowest-cost and environmentally acceptable electric generation sources to serve dynamic, critical electric loads.

2. **Grid Vulnerabilities**  
   Attendees will gain an understanding of what vulnerabilities exist in the electric grid today and how the Smart Grid will expand risks. You will see the progression of liabilities with Smart Grid deployment and the means available to protect the system against external unwanted influences. You will see the critical infrastructure and how it has evolved into the Smart Grid with increased risks to society from cyber threats to control systems.

The program will end with a very exciting simulated exercise to show groups of attendees how to look at a sample utility system and assess needs for improvement, including system protection.

**Subjects covered include:**

- Electric grid operation and evolution to the Smart Grid, including electric system design and operation, technical and tariff changes ahead, and integration between utilities and Regional Transmission Organizations
- Smart Grid components, including metering, demand response, virtual power plants, dynamic pricing, grid enhancement funding, demand analysis, promotion of “green” resources, governmental regulation, network standards, network integration, loan guarantees, consumer privacy, and how all parties benefit from the grid operation
- Risks to the Smart Grid and protective measures to ensure system integrity and supply reliability
- Simulated exercise to apply materials learned to a case study to collectively discuss best practices and grid protection that may apply

Fundamentals of Retail Power

**Course Length:** 2 Days  
**CPE Credits:** 12  
**EMI Credits:** 6  
**Prerequisites:** None

Join our leading industry experts and gain a comprehensive understanding of how the retail power markets work.

With particular attention paid to supply issues, this course provides basic to mid-level participants with comprehensive training on how the retail markets function. Beginners will learn the essentials, while more advanced students will learn many finer points. Topics covered include:

- How do the retail markets differ from traditional power distribution?
- Where has retail power advanced the farthest, and how does it work?
- How is default service provided?
- How do we supply the retail customer with power?
- What fundamental factors drive wholesale price and volatility?
- What role does weather play in driving load profiles and prices?
- What role do fuel prices play in determining prices?
- What are locational marginal prices and why should I care?
- What trading tools are used in the power markets, and where can participants find liquidity?
- How do price and load interact to drive cost and risk? How do we aggregate this into a risk book?
Fundamentals of Power Trading

Course Length: 2 Days  |  CPE Credits: 11  |  EMI Credits: 6  |  Prerequisites: None

Attendees will get comprehensive, hands-on instruction, lecture and real-life examples that bring to life the entire power market complex. Our curriculum sets a new standard in higher learning as we delve deeply into the power markets with highly relevant content for today’s and tomorrow’s energy industry.

This course provides basic to mid-level participants with comprehensive training on power trading. Beginners will learn the essentials, while more advanced students will learn many finer points. EMI delivers highly focused insight into the key factors that drive success in the power markets.

Topics covered include:

- Why are the power markets the most volatile of all markets?
- What fundamental factors drive the power markets?
- What role does weather play in determining prices?
- What role do fuel prices play in determining prices?
- What are locational marginal prices and why should I care?
- What is the difference between real-time, day-ahead and forward-power prices?
- What trading tools are used in the power markets, and where can participants find liquidity?
- How are power trading books analyzed, and how do risk management best practices apply?
- What is the status of power market de-regulation and where is it headed?
- How do ancillary services, emissions and renewable mandates affect the power markets?

Power Trading and Hedging Fundamentals

Course Length: 2 Days  |  CPE Credits: 12  |  EMI Credits: 6  |  Prerequisites: None

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.
Marketing Natural Gas and Electricity

Course Length: 2 Days    CPE Credits: 12    EMI Credits: 6    Prerequisites: None

Natural gas and electricity marketing has become complex and critical as regulated utilities and major energy companies have voluntarily diminished their influence on customers, giving rise to the need for more sophisticated marketing of both energy commodities and energy efficiency methodologies. This course will offer a wealth of knowledge in the progressive development, transmission, pricing, delivery and balancing of energy to larger consumers through contemporary marketing mechanisms. Participants will also learn best practices to market both gas and electricity.

This course will show the comprehensive development of the marketing process from understanding the customer's needs to fulfilling those needs through optimal contracting and long-term business relationships. Marketers, brokers, energy producers, financial partners, regulated utilities, government agencies and even large customers can benefit immensely by understanding both the fundamental resources available to all parties in a transaction and the opportunities for working together to minimize operating costs, simplify the marketing process and accommodate the minimum of energy resources to satisfy prudent customer needs.

1. Natural Gas Marketing
   Attendees will gain an understanding of how customers procure hydrocarbons (oil and natural gas), the supplier perspective of marketing and sales, utility and market pricing, alternative fuel considerations, customer loads, imbalance management of intrastate and interstate pipelines, risk management strategies and products, long-term delivered cost forecasting, and optimal contracting including credit.

2. Electricity Marketing
   Attendees will gain an understanding of how and why customers procure electricity, utility and market pricing, alternate bundled vs. deregulated supply considerations, customer loads, demand response and energy efficiency initiatives and their effect on supply and demand, imbalance management of costs and congestion in nodal and traditional systems, near-term impacts of the Smart Grid development, long-term delivered cost forecasting and optimal contracting including credit.

Attendees will leave this course with a comprehensive understanding of how energy is produced, transmitted, regulated, priced, consumed, balanced, hedged against risk, forecasted for long term prices, and ultimately negotiated between all parties for an optimal satisfaction to needs and wants in the marketplace. EMI's unique program delves into the details of the successful mutual operation of the energy, with useful examples of best implementation practices.

Finally the program will end each day with a very exciting, simulated, non-technical exercise to show groups of attendees how to look at a sample market condition and demonstrate how coordination can optimize benefits for all parties.

Biodiesel Fundamentals

Course Length: 2 Days    CPE Credits: 12    EMI Credits: N/A    Prerequisites: None

Those with a stake in biodiesel typically come from agriculture or other industries that lack a thorough understanding of petroleum basics. At the same time, petroleum industry participants see the biodiesel tide rising, yet they lack a clear picture of how this product fits into their mix.

Biodiesel Fundamentals will bridge the petroleum-agriculture gap and provide a solid foundation of knowledge for all who attend. The focus is on "fundamental" issues that are important to all sides of the industry. Biodiesel will never gain widespread acceptance until it is merged into the mainstream infrastructure. This course connects those critical dots.

Topics covered include:

- Crude oil and the "peak"
- Refining economics/"big oil" motivations
- Pipeline operations
- Price-setting economics
- Terminal operations
- Fuel-retailing economics
- World oil/alternatives environment
- Clean Air/Energy Policy Act
- Transesterification/manufacturing process
- Feedstock issues
- Biodiesel fuel specifications
- Tax issues/rebates
- Plant feasibility
Biofuel Fundamentals

Course Length: 2 Days  |  CPE Credits: 11  |  EMI Credits: N/A  |  Prerequisites: None

Attend this intensive program and gain a solid foundation in biofuels and the fundamental issues that impact agriculture, oil and alternatives.

Biofuel Fundamentals is a cross-discipline course drawing its content from the ethanol, biodiesel and petroleum industries. These industries are changing rapidly and it is vital to have a balanced knowledge of each. Current and future biodiesel and ethanol producers and marketers cannot afford to be focused solely on the metrics of domestic ag-based production. Similarly, traditional petroleum players will be left behind if reticent in their adoption of the advancing biofuels wave.

This course will provide a thorough education highlighting key topics from these rapidly evolving industries. The course builds from an understanding of basic production technologies and infrastructure up through the complexities of environmental legislation leading to today’s boutique fuels. It examines biofuel's present role and the call for an increasing role as an alternative to foreign oil.

Attendees of EMI's Biofuel Fundamentals benefit from a diverse base of subjects. As a fundamental-level course, topics are comprehensive yet introductory and require no prerequisite learning. Topics covered include:

- Feedstock economics
- Ethanol dry milling production
- Ethanol wet milling production
- Ethanol cellulosic technology
- Biodiesel transesterification
- Biodiesel thermal depolymerization
- Refining economics/“big oil” motivations
- Pipeline operations
- Rail economics
- Boutique fuels
- Terminal operations
- Fuel-retailing economics
- World oil/alternatives environment
- Clean Air/Energy Policy Act
- Fuel specifications
- Global influences
- Risk management

Understanding Clean Energy: Alternative, Renewable, and Non-Conventional Sources

Course Length: 2 Days  |  CPE Credits: NA  |  EMI Credits: N/A  |  Prerequisites: None

Understanding Clean Energy is a primer on the subject of alternatives, renewables, non-conventional, and emerging sources of energy; those that fall in the “clean” category. The course provides a thorough exploration of developments in environmental, geopolitical and traditional oil sectors that have given rise to today’s clean energy sources.

The Energy Policy Act defines seven different fuels as being commercially viable alternatives, while the renewable and emerging fuel categories more than doubles that list. We’ll look at each of these energy sources in detail and discuss their feasibility, renewability, production, advantages, disadvantages, uses, and current state of development. While many of these sources have been utilized for decades, we’ll take a fresh look at the latest advancements in areas like Jatropha, Algae, Bio-/Coal-/Gas-to-Liquids, and non-conventional Shale. Topics covered include:

- Historical factors pushing “clean”
- Conventional vs. non-conventional
- Clean infrastructure issues
- DOE classified alternatives
- Pricing/economics
- Energy efficiency/renewability
- World oil/alternatives environment
- Clean Air/Energy Policy Act
- Manufacturing processes
- Feedstock issues
- Fuel specifications
- Tax issues/policy
- Vehicle issues/availability
- Emerging fuels
- Energy sources examined:
  - Biodiesel
  - Electricity
  - Ethanol
  - Hydrogen
  - LNG
  - Natural Gas
  - Oil Sands
  - P-series
  - Propane
  - Shale
  - Solar
  - Wind
  - What’s ahead
GARP ERP® Exam Preparation

Course Length: 1 Day  |  CPE Credits: N/A  |  EMI Credits: N/A  |  Prerequisites: None

Prepare for the GARP ERP Exam with this comprehensive, one-day course based on the requirements for Energy Risk Professional (ERP®) certification.

1. Introduction – What we will cover, how we will cover it and why it will help
2. Physical energy markets
   - Crude oil and refined products: terminology; physical properties (grades and benchmarks); exploration and production; refining processes and operations; refined products (plus ethanol); transportation; storage
   - Natural gas: terminology; physical properties (compare/contrast with crude oil); exploration and production; fractionation; transportation; storage; hubs; city gates, locational basis and basis trades; uses: LNG
   - Coal: terminology; physical properties (grades); mining; uses; emissions
   - Electricity: terminology; generation (fuel sources); transmission/location; reliability/storage issues; emissions
   - Alternative energy: Current situation and future outlook – fuels: CTL; oil sands; wind; geothermal; solar; emissions trading: SOX, NOX, carbon
3. Financial trading instruments
   - Terminology and why used: derivatives vs. cash; basis
   - Exchange-traded derivatives: futures, options on futures (calls and puts) and EFPs
   - Introduction to OTC derivatives: bilateral vs. cleared; forwards, swaps and swaptions, options
   - Energy-specific linear OTC derivatives: participation swaps; basis swaps; swing swaps
   - Options: terminology; valuation inputs; greeks; valuation models; spread strategies; exotic optionality; volatility issues; energy-specific optionality and valuation issues
4. Valuation and structure of energy transactions
   - Refinery economics
   - Pipeline economics; storage economics (including storage trades and forward price curves)
   - Energy spread trading economics (spark spreads; crack spreads)
   - Development of an LNG project
   - Electricity trading and electricity trading models
5. Risk management in financial trading
   - General risk management terminology
   - Types of risk: price, credit, operational, legal/regulatory
   - Types of price risk: outright, basis, optionality
   - Price risk modeling issues: types of hedges; skewness; kurtosis; VaR models and stress testing
6. Financial disclosure, accounting and compliance in the energy industry
   - General disclosure, accounting and compliance terminology
   - SEC regulations, FASB/GAAP and SOX
   - FERC, PUC and environmental compliance - Kyoto Protocol
   - Exchange trading rules and regulations
7. Summary – How to pass the GARP ERP exam and pretest
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- Green technologies
- NERC CE
- Energy trading and hedging

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**NERC CE**
Largest NERC library in the industry! EMI provides 400+ NERC-approved continuing education hours (CEH) that will assist your organization and personnel with the necessary knowledge to ensure that emergency preparedness levels remain high. Among the 400 CEH hours, we offer over 34 hours in NERC Standards training. Automatic upload to NERC SOCCED upon successful completion. Plus our courses are dual-approved: Approved by NERC.com for CEH and by PDH from NCEES.

**Power Generation, Transmission and Distribution**
This curriculum is aimed at all personnel who are involved in plant maintenance, including operators, maintenance technicians, craftsmen and management.

**Green Technologies (ASHRAE)/Engineer CE**
Now, with EMI Online Training, you can get access to five essential LEED-related ASHRAE eLearning courses. ASHRAE eLearning is a cost-effective, simple way to develop your skills online, on-demand, anytime and anywhere. Our library of content includes 75+ courses, many 1.5 to 3 hours each, totaling 200+ hours. You can: Earn/maintain your P.E. license • Prepare for the U.S. GBC’s LEED AP Exam • Provide training to necessary staff • Earn PDH/CEU credit in all 50 states.

**Energy Trading**
This curriculum is aimed at professionals seeking introductory-level energy trading and hedging concepts including jargon and fundamentals. Courses are designed to help hedgers, purchasers, managers and risk management support personnel in the energy and energy consuming industries gain a more detailed understanding of the instruments, tools and techniques available for energy trading and hedging.

**Petro Skills**
Program lessons range from industry jargon, refining and crude oil to process heaters, tanks, distillation, separators, reactors, etc. This course will teach you all the necessary fundamentals to get started and to properly operate and use safety systems.

**Industrial Skills**
Our industrial technologies curriculum has been developed by subject matter experts with field and educational experience within each discipline. All lessons are designed using learning outcome-based instructional design methods. These online courses incorporate varying types of media, including photographs, graphics, video, animations, and three-dimensional representations. Interactive instruction and simulation is also developed for each lesson to maximize the learning experience.

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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 and 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 U.S. Senate
- Supplied expert testimony to a U.S. Senate subcommittee hearing on diesel petroleum product pricing
- Supplied testimony to the Federal Highway Administration regarding fuel tax evasion
- Expert witness in MTBE litigation against the major oil companies

Our instructors are frequent expert speakers for numerous petroleum industry events and trade associations, including:
- DOE DESC World Energy Conference
- OPIS Fleet Fueling
- 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 (e.g. Exxon Mobil, BP, Shell, Equilon, Motiva), major power utilities (e.g. Sempra, Edison Mission, Berkley, Toronto Hydro, Dominion, Conectiv), small marketers (e.g. Sprague, Getty, Southern Counties, Western Petroleum), trucking fleets from 50 to 10,000 (e.g. UPS, U.S. Postal Service, Yellow, Pepsi, Werner), gasoline-powered fleets and hyper-markets (e.g. The Pantry, Wawa, BJs Wholesale) and many Fortune 500 energy consumers.
Judge Us by the Company We Keep!

Our professional instructors have taught thousands of companies. Here’s just a sample of the esteemed companies that have learned from our top market experts...

Agway Energy Products LLC
AIG
Allegheny Energy, Inc.
Alon USA
American Freightways
American Medical Response
Amerigas
Apex-Petroleum
Apollo Traders/Integra
Applied Physics Laboratory
APSC
ARAMCO
Arizona Public Service Co.
Atlantic Trading and Mktg.
Atlas Oil Company
Berkeley Electric Cooperative
BJs
BNSF
Boyd Brothers Transportation
BP
Calgary Transit
California Energy Commission
California Fresno Oil Company
Cargill
Caribbean Petroleum Company
Cedar Falls Utilities
Cenex Harvest States
Cenovus
Chevron
Chicago Transit Authority
CIOMA
Circle K
Citgo
City of Philadelphia
CME NYMEX
Comcar Industries, Inc.
Comdata
Conectiv
Consolidated Freightways
Constellation New Energy
Cosmo Oil
Country Energy
CSX
Danone Waters of N. America
Direct Energy
Distribuidora Nicaraguense De
Djibouti
DOAS
Dominion Resources
Dreyers Ice Cream
DTE Energy
El Paso Electric
Encana
Equilon
Exxon Mobil Corporation
Farmers Distributing
Federal Express
Ferrellgas
Financial Engineering
First Student
Florida Power and Light
Flying J. Corporation
Formosa Plastics Corp.
Getty Petroleum
Gresham Petroleum
Growmark, Inc.
GSA Fleet Mgmt.
Gull Industries
Honeywell Corp.
Idemitsu Apollo Corp.
Indonesia Power, Inc.
Intel Corp.
Jack in the Box, Inc.
Jerry Brown Company
Laidlaw Transit, Inc.
LEPCORP
Los Angeles County
Lower Coloroda River Authority
Malcolm Pirnie
Motiva Enterprises
Murphy Oil
Navy Exchange
North Atlantic Energy, Inc.
Nuclear Management Co.
OPEC
Osaka Gas
Pepco
Pepsi Americas
Pepsi-Cola Co.
PG&E
PHH
Pilot Travel Centers
Praxair
Proliance
PSEG Power
Reliant Energy
San Diego Gas and Electric
Sasol North America
SBC
Schneider Logistics
Schneider National
Selkirk Cogen
Sempra
Service Master
Shell Canada
Southern California Gas
SouthStar Energy
Southwest Florida Water
Sprague Energy
Stat Oil
State of Connecticut
Strategic Energy
Suncor
Tenaska
Tesoro Petroleum
The City of Calgary
The Pantry
Toronto Hydro-Electric
Tosco Marketing Company
Tosco Refining Company
TotalFinaElf
TransAlta
TransCanada
Tri-Rail
U.S. Postal Service
U.S. Tobacco
Ultrimar
University of Lagos
UPS
Veeder-Root
Wal-Mart
Walmart Stores, Inc.
Waste Management
Wawa, Inc.
Werner Enterprises, Inc.
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Get daily unbiased expert analysis of the fundamental, technical and inter-market drivers that influence the natural gas markets in the U.S. and internationally, including the global LNG market. Includes a comprehensive analysis of the events that impact price as well as daily recommendations regarding price direction and trading and hedging opportunities.

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AFI is your lifeline to the alternative fuels market, providing a wholesale pricing index covering all seven alternative fuel products registered and approved by the Department of Energy.
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Three Easy Ways to Enroll:

1. Contact Valerie DeLorenzo at 215.493.4482 or vdelorenzo@emimail.org.
2. Complete and fax this form to 443.383.0059.
3. Complete and mail the form to: Energy Management Institute, 1324 Lexington Avenue, #322, New York, NY 10128.

A Choose your seat block below
Seats must be used within a 12-month period. Entire seat block must be prepaid. 100% satisfaction guaranteed.*

<table>
<thead>
<tr>
<th>Seats Per Block</th>
<th>Price Per Seat</th>
<th>Total Due</th>
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<tbody>
<tr>
<td>10-seat block</td>
<td>$1,395 per seat</td>
<td>$13,950</td>
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<tr>
<td>15-seat block</td>
<td>$1,200 per seat</td>
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<td>20-seat block</td>
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<tr>
<td>25-seat block</td>
<td>$1,050 per seat</td>
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</tr>
<tr>
<td>30-seat block</td>
<td>$ 895 per seat</td>
<td>$26,850</td>
</tr>
</tbody>
</table>

B Billing Information (please print clearly):
NAME: ____________________________
COMPANY: _________________________
ADDRESS: _________________________
PHONE: __________________________
FAX: ____________________________
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C Payment Method:

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

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  Card Number: ______________________
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