



Energy Derivatives: Futures, Options & Swaps



Course Date: TBD



Course Length:

2 days

8:30 a.m. – 4:30 p.m. EST
each day (includes 60 min.
lunch break)



In-Person Onsite



Instructor/ Host:
Richard Weissman
Nour Zekhmi

Questions?

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WHAT YOU WILL LEARN

This in-depth examination of energy futures and options is presented by Richard Weissman, an energy derivatives trader and highly acclaimed author with over thirty years of real-world trading experience. Learn what derivatives are, how they work, how they're used, and where they are traded.

WHY YOU SHOULD ATTEND

Understand the benefits and limitations of each instrument and how they can be applied to speculative trading and commercial hedging strategies.

What are the pros and cons of hedging with various types of derivatives? What are the benefits and drawbacks to hedging with options vs. linear derivatives? How can swaps help hedgers match their physical consumption and production profiles? Why are exchange-traded futures the "gold standard" for commercial hedgers? We'll cover all this and more during this dynamic two-day course. You'll gain a thorough and practical understanding of what futures and options are, how they work, how they are used, and how to measure the risks and rewards associated with them.

Topics covered include:

- The vocabulary of futures and options
- The what, why, how, and who of energy futures and options markets
- The mathematics of options premiums, historical and implied volatility, and the Greeks
- The differences and similarities of futures and options
- Real-time trading and hedging examples for all products in energy markets using futures and options
- Setting up futures and options accounts
- Types of orders used on the exchange
- Margins and futures brokers
- Contract specifications
- Options pricing models: Black-Scholes and Cox-Ross-Rubenstein
- The basis between spot and futures markets
- Basis swaps and why they are popular
- How option premiums change in various market environments
- Commonly employed tools and techniques for energy risk managers
- The difference between historical and implied volatility
- Popular options spread strategies used by commercial hedgers in energy

Course Syllabus – Day One

Morning Session

Session 1: Why derivatives are traded

This introductory session will help attendees understand why energy derivatives are so popular among both commercial hedgers and speculators. We'll provide you with an overview of the most widely used tools for managing risk, monitoring performance, and maximizing profit in today's energy markets.

Session 2: An introduction to futures

A historical overview of the development and characteristics of futures markets, price discovery, and general terminology. This session explains why futures are the gold standard among exchange-traded derivatives.

Session 3: A detailed look at CME Group (NYMEX) & ICE futures

We'll cover how and why CME Group (NYMEX) and ICE provide a liquid, global market to trade and manage price and margin risk for all energy commodities. You'll understand how the exchange works, who trades, contract specifications, back office and clearing operations.

Session 4: How to use CME Group (NYMEX) & ICE

Learn how to establish a CME Group (NYMEX) and ICE futures account, choose a futures commission merchant, understand commissions and fees. We will explore how performance on CME Group (NYMEX) and ICE transactions are guaranteed as well as the importance of the daily mark to market.

Afternoon Session

Session 1: Trading & types of orders

With the help of a real-time futures trading simulation, this session will teach you the mechanics of trading including various types of orders used in futures and options as well as common trading terminology.

Session 2: Futures spreads

Why are spreads so essential to commercial hedgers in energy? What is the carry trade? How do various spreads relate to basis risk? This session answers all these questions and provides a thorough examination of popular energy spreads such as bull and bear spreads, quality spreads, locational spreads, the crack spread and the spark spread.

Session 3: Energy swaps

Discover the derivatives market, tools, mechanisms, electronic exchanges, contracts, and ISDAs.

- Differences and similarities between futures, options, and swaps
- Historical and real-time examples of trading and hedging energy products using futures, options, and swaps
- How swaps help minimize basis (correlation) risk
- EFPs vs. locational basis swaps

Session 4: Managing basis (correlation) risk

This session will show how energy futures markets correlate with various spot markets. Attendees will see examples of real-world outright physical market risks and how hedging with various types of derivatives minimizes outright price risk as well as basis risk. Finally, we'll examine the two-tier hedging solution where commercial hedgers hedge outright price risk with exchange-traded futures and then hedge basis risk with locational basis swaps.

Course Syllabus – Day Two

Morning Session

Session 1: Options basics

This session explores why options are used by commercial hedgers in energy. Throughout the session we will dispel some of the most common myths in derivatives trading. Despite their complexity, we'll show how easy it is to incorporate options into your trading and risk management portfolio. Attendees will learn basic options terminology including calls, puts, holders vs. writers, the difference between in-the-money, at-the-money, and out-of-the-money options, as well as the basic inputs for pricing options.

Session 2: Options basics – trading simulation

Using actual past price history attendees will make speculative options trading decisions. By the end of this simulation, you'll understand the difference between calls, puts, being a writer vs. being a holder, in-the-money, at-the-money and out-of-the-money, and how volatility impacts trading decisions in options.

Session 3: Case Study – Hedging with NYMEX Futures

Our case study compares spot Houston Ship Channel mark to market vs. Henry Hub natural gas futures for a consumer seeking to hedge Q4 2020 consumption with NYMEX futures from March-May, 2020. This session compares the economics of hedging with NYMEX vs. Houston Ship Channel spot pricing and highlights the value of augmenting this hedge with a locational basis swap.

Session 4: Option pricing models

This session looks at the various models for calculating theoretical option premiums and implied volatility of outright option positions, as well as option spreads. We will discuss the inputs used in calculating theoretical premiums, including the three most widely used models: Black-Scholes, Cox, Ross-Rubenstein, and Monte Carlo. Learn the strengths and weaknesses of each type of model and how traders compensate for these weaknesses.

Afternoon Session

Session 1: The Greeks

This session explores the impact of option delta, gamma, vega, and theta as the underlying asset moves over time. How does each impact price exposure, time decay (options are a depreciating asset), and volatility? We'll examine option hedging techniques, such as delta hedging and delta neutral position management, from both speculative and commercial hedging viewpoints.

Session 2: Volatility

Take part in an in-depth examination of one of the most essential aspects of optionality risk and pricing — volatility. See how it is measured for the underlying commodity as well as the implied volatility of options. Learn how traders use technical analysis to help forecast future volatility trends and review appropriate trading strategies based on this information. Finally, we will examine volatility backwardation and skews, and how they help indicate the most appropriate strike prices and expiration dates for trading.

Session 3: Directional option spread strategies

This session provides a detailed examination of various directional spread strategies, such as collars, vertical debit spreads and backspreads. We will emphasize matching directional spread strategies with the hedger's directional and volatility forecasts. This session includes a trading simulation where attendees will trade collars and vertical debits spreads based on their directional and volatility views.

Session 4: Putting it all together

In this final session, we'll develop a rule-based active hedge strategy using various tools and techniques examined throughout the two-day course including futures, options and option spreads from both the perspective of the producer as well as the consumer of energy commodities.

MEET YOUR INSTRUCTOR

Mr. Richard Weissman is one of the world's foremost authorities and thought leaders in the fields of derivatives, risk management and technical analysis. He is the author of two books: *Mechanical Trading Systems: Pairing Trader Psychology with Technical Analysis* (Wiley, 2004) and *Trade Like a Casino: Find Your Edge, Manage Risk and Win Like the House* (Wiley, 2011) which was a finalist for the 2012 Technical Analyst Book of the Year Award.

Richard has more than 30 years of experience as a derivatives trader and has provided training and consultation services to traders and risk managers at investment banks, hedge funds, energy and agricultural companies for more than 20 years. He has helped train staff from virtually every major firm that uses derivatives including Morgan Stanley, Citicorp, Exxon-Mobil, Shell, Exelon, Cargill, CFTC, EIA, Platts, Intercontinental Exchange and CME Group. He has been the featured speaker at leading industry conferences throughout the world.

Richard provides state-of-the-art training and consulting solutions for traders, risk managers and professionals supporting traders and risk managers. Although his primary focus continues to be serving the needs of the energy and agriculture industries, many of the courses and risk management solutions he provides are applicable to all asset classes including foreign exchange, interest rates, equities, metals and softs.



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