OVERVIEW

Is your organization struggling to produce consistent and useful portfolio analytics and enterprise-wide risk metrics? Does your risk analysis really, comprehensively capture the true costs and exposures to the business? Are you finding it difficult in your deal capture systems to report on relevant market risk, credit risk or regulatory exposure? What is the best way to lead your team or organization beyond the current capabilities and modeling techniques?

Energy portfolios often contain many of the following items: standard financial instruments (futures, swaps, options), complex contracts, retail customers, as well as physical assets such as storage, pipelines, transportation and various forms of power generation (Oil, Coal, Gas, Nuclear, Renewable and Hydro). This course assumes a working knowledge of energy portfolio analytics and risk reporting. It is designed to help you examine modeling techniques in more depth, by providing exercises to compare analytic methods, and by determining best practices for valuation, as well as market and credit risk metrics.

The course will also look at the unique characteristics of energy markets, physical assets and complex contracts across a wide range of portfolio types. It will also examine optimization and valuation techniques for various parts of an energy portfolio including those hard-to-value contracts types (virtual storage, purchase power agreements, power and gas swing, etc.) And it will demonstrate how to develop meaningful, consistent information for reporting market and credit risk exposures.

WHO SHOULD ATTEND

Professionals in the power and liquid gas industry who work in the following disciplines:

- Front office
- Origination
- Structuring
- Risk management/Middle office
- Risk modeling
- Quantitative analysts
- Asset management
- Asset optimization
- Energy supply
- Transaction analysis
- Short term trading
- Energy marketers
- Valuation
- Contraction negotiation

LEARNING OUTCOMES

- Examine the latest methods for modeling risk factors including single factor, multi factor and hybrid techniques
- Identify appropriate methods for implementing energy price simulation processes
- Explore various numerical techniques to value options, contracts and physical assets
- Determine the effects of operational constraints on portfolio value
- Assess the types and relevance of various risk metrics
- Establish the value proposition for developing enterprise wide risk metrics
- Calculate important risk metrics such as value at risk, earnings at risk, cash flow at risk, gross margin at risk as well as exposure and potential future exposure
- Define the appropriate use of stress and scenario analysis
- Discuss new “best practices” for portfolio and risk analysis
- Acquire practical experience in group exercises and breakout sessions
AGENDA

Monday, November 4, 2013

8:00 – 8:30 a.m.  Registration and Continental Breakfast

8:30 a.m. – 4:30 p.m.  Course Timing

12:00 – 1:00 p.m.  Group Luncheon

Energy Market Dynamics, Valuation & Portfolio Optimization

I.  Lessons from the Data
   •  Price, load, temperature, wind speed
   •  Analysis of historical data

II.  Price Simulation
   •  Numerical techniques
   •  Parameter estimation
      •  Volatility, Mean reversion and Jump parameters
      •  Testing and calibration – the science & the art

III.  Incorporating Other Risk Factors
   •  Composite prices
   •  Weather-load
   •  Customer & system load
   •  Load-price

IV.  Modeling Gas & Power Portfolios
   •  Operational constraints
   •  Generating assets
   •  Storage
   •  Pipelines
   •  Transportation
   •  Asset valuation methodologies and mechanics
   •  Hedging physical assets

V.  Bringing It All Together
   •  Portfolio optimization
   •  Case study – optimizing gas supply agreements for a retail gas book and power generation
AGENDA

Tuesday, November 5, 2013

8:00 – 8:30 a.m.    Continental Breakfast

8:30 a.m. – 4:30 p.m.  Course Timing

12:00 – 1:00 p.m.  Group Luncheon

Beyond Valuation – Developing Meaningful & Consistent Market & Credit Risk Metrics

VI. What is “Best in Class” Risk Management?

VII. Developing the Value Proposition for Enterprise-wide Risk Metrics

VIII. Value at Risk for Energy and Commodity Portfolios

• The qualities of VaR
• Delta VaR
• Delta-gamma VaR
• Historic simulation VaR
• Monte-Carlo VaR
• Extreme value theory
• Incremental and marginal VaR
• Vega VaR
• VaR for physical assets

IX. What VaR Can and Cannot Tell Us

X. CashFlow Based (at-Risk) Metrics

• Moving beyond VaR
• CFA, EaR, GMA, etc.
• Custom at-risk metrics
• Sensitivity analysis
• Making at-risk metrics useful for entire portfolios
• Using at-risk for hedge strategies

XI. Credit Risk Metrics

• Current and potential future exposure
• Credit risk adjusted value
• Credit VaR and credit reserves
AGENDA

Tuesday, November 5, 2013 (CONTINUED)

XII. Sensitivity Analysis, Scenario Analysis and Stress Testing
• Attributes of good tests

XIII. Group Working Session
• Exercises to be provided

XIV. Case Studies

INSTRUCTORS

Dr. Chris Strickland / CEO and Co-Founder / Lacima

Dr. Chris Strickland is CEO and co-founder of Lacima - a specialist provider of valuation, optimization, and risk management software to the global energy and commodities markets. Chris also works extensively with senior executives consulting on energy risk management and complex derivative valuation issues for over 15 years, and is often retained for expert witness testimonials. Previously Chris worked for RBC Gilts Ltd and Kitcat and Aitken & Co in London. He is the co-author (with Les Clewlow) of the books ‘Energy Derivatives Pricing and Risk Management’ and ‘Implementing Derivatives Models’ and co-editor of the book ‘Exotic Options: The State of the Art’. He is a Coordinator of the Risk Metrics Subcommittee of the Committee of Chief Risk Officers (CCRO) based in Houston, and a member of the Energy Oversight Committee for the Global Association of Risk Professionals (GARP) based in New York. In 2005, Dr. Strickland was named in the Energy Risk Hall of Fame, and in 2009 he was named in an elite international group of five by Energy Risk Magazine as a pioneering quantitative analyst who has made an outstanding contribution to energy trading and has shaped today’s global energy markets.

Sid Bahl / Director of Quantitative Consulting and Optimization / Sapient Global Markets

Sid Bahl is Director of Quantitative Consulting and Optimization at Sapient Global Markets, in the Physical Portfolio Optimization practice. He has deep expertise and experience designing computationally challenging projects for oil, gas and power clients across US and Europe, with a deep understanding of both the business and the quantitative aspects of commercial contracts and assets in energy commodities.

Alexander Zhukovsky / Director Quantitative Risk and Financial Reporting / National Grid

Mr. Zhukovsky has worked as a “quant”, manager, and a director of Energy Portfolio Risk Management at the company for more than nine years. He also has been serving as a chair of Commodity Management Committee and a Director of Quantitative Risk and Financial Reporting. Dr. Zhukovsky specializes in applying advanced mathematical and computational techniques to the real-world energy risk problems, developing risk reporting, advanced risk metrics, and valuation models. Before joining National Grid, he worked as an adjunct professor at SUNY at Stony Brook and a researcher/software developer for firms specialized in scheduling, dispatching, and supply chain optimization. He holds advanced degrees in Applied Mathematics and Management and Policy.
INSTRUCTIONAL METHODS

A variety of presentation styles will be used, including case studies, PowerPoint presentations, and class exercises.

REQUIREMENTS FOR SUCCESSFUL COMPLETION OF PROGRAM

Participants must sign in/out each day and be in attendance for the entirety of the course to be eligible for continuing education credit.

IACET CREDITS

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

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

EUCI is authorized by IACET to offer 1.4 CEUs for the course.

EUCI is registered with the National Association of State Boards of Accountancy (NASBA) as a sponsor of continuing professional education on the National Registry of CPE Sponsors. State boards of accountancy have final authority on the acceptance of individual courses for CPE credit. Complaints regarding registered sponsors may be submitted to the National Registry of CPE Sponsors through its website: www.learningmarket.org.

Upon successful completion of this event, program participants interested in receiving CPE credits will receive a certificate of completion. EUCI is authorized by CPE to offer 16.5 credits for this program.

EVENT LOCATION

A room block has been reserved at the Royal Sonesta Hotel, 2222 West Loop South, Houston, Texas, 77027, for the nights of November 3-4, 2013. Room rates are $199, plus applicable tax. Call 713-627-7600 for reservations and mention the EUCI course to get the group rate. The cutoff date to receive the group rate is October 9, 2013, but as there are a limited number of rooms available at this rate, the room block may close sooner. Please make your reservations early.

PROCEEDINGS

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

**Mail Directly To:**  
Electric Utility Consultants, Inc. (EUCI)  
4601 DTC Blvd., Ste. 800  
Denver, CO 80237

**PLEASE REGISTER THE FOLLOWING**

- **ENERGY RISK ANALYTICS & PORTFOLIO OPTIMIZATION:**  
  A DEEPER EXAMINATION OF BEST PRACTICES AND ADVANCED METHODOLOGIES  
  NOVEMBER 4-5, 2013: US $1,495  
  EARLY BIRD ON OR BEFORE OCTOBER 25, 2013: US $1,295

- **Energize Weekly**
  EUCI’s Energize Weekly e-mail newsletter compiles and reports on the latest news and trends in the energy industry. Newsletter recipients also receive a different, complimentary conference presentation every week on a relevant industry topic. The presentations are selected from a massive library of more than 1,000 current presentations that EUCI has gathered during its 26 years organizing conferences.

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### CREDIT CARD

- **Name on Card**
- **Account Number**
- **Billing Address**
- **Billing City**
- **Billing State**
- **Billing Zip Code/Postal Code**
- **Exp. Date**
- **Security Code (last 3 digits on the back of Visa and MC or 4 digits on front of AmEx)**

**OR** Enclosed is a check for $ _________________ to cover ________________ registrations.

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All cancellations received on or before October 4, 2013, will be subject to a US $195 processing fee. Written cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event or publication. This credit will be good for six months. In case of event cancellation, EUCI’s liability is limited to refund of the event registration fee only. For more information regarding administrative policies, such as complaints and refunds, please contact our offices at 303-770-8800. EUCI reserves the right to alter this program without prior notice.