Paradigm

New York City – May

Best Practices

Enterprise-Wide Energy Risk Management

May 12-14

Register On-line

Seminar Venue:

Cornell Club, New York, NY

Seminar Topics Include:

- Interdependence of risk in the enterprise
- Top-down vs. bottoms-up risk measures
- Risk as a measure of capital requirements
- Concepts underlying Value at Risk
- Portfolio aggregation of price risks
- Applying risk analytics to energy companies
- "Closed-form " vs. " Monte Carlo" methods
- Credit risk metrics and analytics
- Implementing Credit Value at Risk
- Aggregating price and credit risks
- Credit risk mitigation techniques
- Categories of operational risks

+$495 Value

Includes Comprehensive Reference Textbook

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3 Signups from Your Organization & 4th is Free

Detailed Seminar Outlines Below

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Best Practices: Enterprise Wide Energy Risk Management

Day 1

Enterprise Risk and Capital

Risks in the Energy Enterprise

- Categories of price risk
- Physical and volumetric risks
- Cash liquidity risk and financing risks
- Credit risk as non-performance risk

Interdependence of Risk

- No risk elimination; only risk trade offs
- Choosing among risk positions
- Price risk vs. credit risk

Operational Risks

- Components of operational risk
- Emergence of operational risk in the energy sector
- Risk event frequency vs. loss severity

Risk & Capital Requirements

- Risk and capital adequacy
- Portfolio approach to capital allocation in an energy company
- Risk aggregation and diversification
- The efficient allocation of risk capital

Risk Identification & Unbundling

- Separating physical from financial risks

Approaches to Enterprise-Wide Risk Aggregation

- Bottom-up approaches
- Top-down approaches
- CFaR
- Advantages/disadvantages

roup Review

The Concept of Value at Risk

The Emergence of Modern Risk Metrics

- Inadequacy of earlier risk measures
- Translating subjective probability into objective probability
- Measuring & controlling risk in an energy company
- Sarbanes-Oxley & corporate governance

Risk and Maximum Potential Loss

- Assigning an acceptable level of uncertainty
- Measuring worst-case loss
- Measuring risk by counting price paths
- Establishing confidence levels
- The role of time in risk measures

Group Review

Conceptual Foundation of Risk Analytics

Risk as Dispersion of Possible Outcomes

- Probability vs. frequency distributions
- Relationship between standard deviation & volatility
- Adjusting volatility for term
- Applicability of volatility to energy risks

Understanding Volatility

- Types of volatility
- Measuring historic volatility
- Path dependency of volatility
- Deriving annual and periodic volatility

Measuring Confidence

- Interpreting Z values to measure 'tail' risk
- Skewed distributions
- Kurtosis

Aggregating Risks for Multiple Positions

- Aggregating means and volatilities
- Aggregating risk for multiple positions
- Correlation as the key element in risk aggregation
- Volumetric and other non-additive risks

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Day 2

Applying Risk Analytics to Energy

Key Factors in Measuring Risk

- Holding period and confidence level
- Volatility and risk distribution
- Return on capital
- The closed form calculation

Aggregating Risk Measures

- Additive risks
- Basis spread risk
- Using delta to measure VaR for option positions

Determining the Appropriate Volatility Level

- Using appropriate volatility input for calculation risk
- Complexities of energy volatility
- Volatility smiles & skews
- Term structure of volatility
- Instantaneous vs. implied (average) volatility
- Seasonality

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Earnings at Risk (EaR)

The Emergence of EaR

- The limitations of VaR for energy companies
- Measuring risk for accrual accounting
- Earnings at risk/profits at risk
- The appropriate holding period for EaR

Evaluating Hedge Strategy with EaR

- Measuring residual risk after a hedging
- Evaluating 'dirty' (imperfect) hedges
- Integrating EaR with VaR
- Expanding the scope of EaR beyond price risk
- Using simulation models to include volumetric and other non-price risks

Historical Simulations

- Model assumptions
- Building a historical simulation
- Incorporating correlation in an historical simulation
- Advantages/disadvantages of the historical approach

Monte Carlo Simulations

- Creating random price paths
- Analyzing distribution of price-path outcomes
- Monte Carlo for aggregating multiple risks
- Advantages/disadvantages of Monte Carlo methods
- Monte Carlo vs. historic method
- Aggregating volumetric & price risks using Monte Carlo

Using Historical Approach with Monte Carlo Methods

- For Single Risk VaR/EaR
- For Multiple Risk VaR/EaR

Using Risk Simulations to Evaluate Hedges Beforehand

- Evaluating alternative hedge strategies
- Advantages of simulation methods
- Differences between EaR and VaR with option hedges
- Modeling binary asymmetries in EaR models
- Limitations of EaR

Stress Testing

- Identifying model risk
- Divergence of future events from historic pattern
- "Fat Tails"
- Energy stress factors

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Day 3

Credit Risk Metrics

Characteristics of Energy Credit Risk

- Uncertain exposure amounts
- High volatility
- Weak counterparties & sector concentration

Nonperformance Risk

- Insolvency
- Enforceability of contracts & suitability
- Political/regulatory risk
- *Force majeure & "price" majeure*

Risk Metrics in Credit Analysis

- Current and potential exposures
- Credit exposure vs. credit risk
- Using CVaR to measure maximum potential exposure

Capital at Risk (CaR)

- The concept of CaR
- Pricing capital requirements in a transaction

Credit Quality Metrics

- Relating credit ratings to default probability
- Ratings migration
- Marginal vs. cumulative default probabilities
- Expected recovery rate

Credit Scoring

- Sourcing information
- Credit scoring vs. rating agencies
- Analyzing spreads in bond yields
- Using market spreads to measure credit risk
- Credit derivative pricing as a risk measure

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Measuring Credit Exposures

Calculating CVaR

- Components in calculating credit value at risk (CVaR)
- Impact of holding period on CVaR
- The profile of CVaR for term contracts
- Aggregating credit exposures
- Using marginal default rates with time buckets

Aggregating Price Risks and Credit Risks

- Portfolio diversification effects
- Price correlation
- Jointly supported credits and credit uplift
- Correlation of default probabilities

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Mitigating Credit Risk

Netting and Risk Offsets

- Transactional netting
- Netting default claims
- Bilateral netting
- "Cherry picking"
- Cross-affiliate netting

Multilateral Netting

- Clearing
- Margining
- The clearinghouse: advantages and limitations

Unwinding Risk Positions

- Reversing transactions
- Buyouts and assignments
- Credit risk in unwinding structures
- Managing credit exposure under netting
- Reliability of netted exposures as a risk measure

Credit Risk Mitigation Tools

- Bank stand-by letters of credit & guarantees
- Intermediation/sleeving
- Margins and margin triggers
- Establishing margin thresholds
- New transaction with negative correlation
- Periodic pricing resets to market
- Bond puts
- Default swaps and options

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About Paradigm and Our Instructors

Paradigm provides practical non-theoretical training in energy derivatives, and their related risk management technologies. Programs are structured to the specific needs of today's dynamic energy industry and are designed to excite participants by knocking down the myths and mystiques built around derivative products. Paradigm's instructors offer participants a clear understanding of the business potential arising from combining physical energy and financial products.

The following program is an intermediate level (group-live offering) courses with no prerequisites or advanced preparation required. *CPE credits for each class are: Auditing 1, Finance 3, Management Advisory Services 11, Specialized Knowledge & Applications 4, Statistics 3 Total = 22.*
(All fees include a comprehensive reference textbook, continental breakfast, lunch and snacks.)

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An understanding of the new metrics of risk, Value at Risk (VaR), Earnings/Cash Flow at Risk (EaR), Capital at Risk (CaR), and Credit Value at Risk (CVaR) is essential to the management of risk in today's energy company. This program explores, in non-technical terms, the methods and assumptions underlying these metrics as well as issues faced in their implementation and administration. This seminar examines (from a conceptual and not from a mathematical perspective) methodologies and issues common to all these approaches to assessing risk: risk distributions, volatility, confidence levels, holding period, correlation, risk aggregation, capital adequacy, etc. The program then demonstrates how these concepts can be applied in numerous variants to measure not only price risks, but also credit risks and risks to earnings. Beyond simple "closed form solution" methods, the program explains, also in non-technical terms, simulation approaches to risk measurement including historical and Monte Carlo methods."

Program Instructors

Paradigm's instructors bring to the classroom the hands-on experience of working in related business areas. Combining this extensive knowledge with their experience in conducting dedicated training for thousands of executives insures that our seminars feature lively interaction between participants and the instructor.

Frank H. Ribeiro

Frank began his career in the energy sector as an Economist with the Federal Power Commission. He has managed profit-generating deal origination and structuring teams at major international institutions. Since 1994 he has worked in close association with leading natural gas and power marketers, researching the emerging trading and deal structuring techniques evolving in these rapidly deregulating industries, and developing application-based training programs for electric utilities and energy marketers.

John A. Doble

John's career spans the spectrum from trading and developing special applications for derivative products, through to actual corporate treasury responsibilities where managing risk positions and working with Value at Risk are a priority. John has considerable experience in the field of training and he has developed and delivered seminars on derivative products and the mechanics and uses of Value at Risk concepts. These courses are noted for being extremely practical in nature, and impart a sound knowledge of Value at Risk without involving complex mathematics. John has also managed the aspects of designing and implementing risk management systems for trading rooms.

Special Promotions

- Team Discount — Your organization may send one participant FREE with every 3 registered.
- Early Bird Discount — Register now through April 4th and receive $100 off of your registration fees.

Due to the wide choice of hotels in the New York City area, no specific room blocks are allocated to this program and participants are free to make their own arrangements.

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Should you be unable to attend, a substitute participant from within you company is welcome at no extra charge. For all cancellations received (by phone, email, letter, or fax) 14 days or more prior to the program start date, we will make a prompt refund less an administrative charge of $100. Those cancellations received within 14 days of the program start date will be given a credit (good for one year from the original program date) to attend a future paradigm program. For more information regarding administrative policies such as complaint and refund, please contact PMA at 201.784.5389.