VALUATION OF OIL & GAS ASSETS
A highly practical guide to valuing and modelling assets in the oil and gas industry

London Dates:
4-6 July 2016

COURSE LEADER:
Dr. David Wood, International Energy Expert

During this hands-on intensive course you will:

• Gain detailed insights into the key components of oil and gas asset valuation models
• Learn how to apply sensitivity and simulation analysis to reveal valuation uncertainties
• Understand how to deal with the challenging issues that commonly arise when interpreting valuation models
• Develop the practical skills to build and evaluate valuation models at your own pace
• Obtain the knowledge to make better economic decisions based on robust valuation models
• Explore the practical models used within upstream and midstream facilities along with debt and hedging models
• Conduct analysis in Excel on workbooks provided

Rhode Luemba, Contracts Analysts, Chevron

The trainer is very experienced and illustrates the subject of the course with relevant case studies

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Valuing oil and gas assets is a complex task and in today’s industry environment it is even more challenging – a trend that is set to continue! Uncertainty around revenue and cost projections along with financing issues means that it is a key skill for oil industry analysts, petroleum economists and decision makers to understand how valuation models are built, developed and manipulated on a spread sheet platform. Spread sheets in conjunction with built-in functions, add-ins and VBA macros can provide powerful and sophisticated tools for such analysis and therefore facilitate better commercial decision making.

This course provides a much needed “practical” insight to valuing oil and gas assets using spread sheet models. The models supplied are designed to be useful to experienced spread sheet users and also those with more basic spread sheet skills. Delegates are required to bring their own laptop computers loaded with a functioning version of Excel for use during the course. This will facilitate hands-on learning for each attendee. The emphasis is on learning oil and gas industry valuation methods and techniques, rather than developing spread sheet skills, although the latter should also be an outcome for attendees.

The course is structured in time into approximately one-quarter theoretical instruction and three-quarters practical hands-on facilitated spread sheet model evaluation and analysis. Brief PowerPoint presentations will be delivered to review the key requirements and objectives of oil and gas industry asset valuation and these will lead swiftly into the practical sessions. Most of the models provided focus on upstream oil and gas assets, but models covering midstream facilities, debt and hedging are also addressed.

Course Leader: Dr. David Wood

Dr. David Wood has more than 30 years of international energy experience spanning commercial, fiscal and technical functions within the exploration and production sector, holding senior corporate, strategic and operational management positions.

His industry experience includes working with government agencies, national oil companies, major and independent oil and gas operators in most continents, including long-term postings in the Middle East and South America. This has provided him with a broad insight to commercial and technical issues along international oil, gas and energy supply chains.

David now works as an independent international consultant and expert witness. He has published an extensive body of work on energy related topics including: performance modelling of fiscal terms, economic analysis, enterprise risk and portfolio simulation, LNG, GTL and gas supply, deep-water exploration and production techniques, corporate performance, portfolio and strategy management, mergers and acquisitions, negotiations & project management. He is actively involved in energy consulting, professional training, research and development programmes. He is a member of the Energy Institute (UK) and the Petroleum Exploration Society of Great Britain and associate editor of the Journal of Natural Gas Science & Engineering.

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Valuation of Oil & Gas Assets

UPSTREAM OIL AND GAS VALUATION MODELS

- Fundamentals of Measuring Profitability
  - Measures of profitability
  - Cash flow calculations
  - Distinguishing income from cash flow
  - Taxation and depreciation calculations
  - Essentials components of multi-year cash flow models
- Time-Value Analysis
  - Impacts of timing on valuations
  - Discounted cash flow techniques
  - Applying a meaningful range of discount rates
  - Calculate Net Present Value (NPV) and Internal Rate of Return (IRR)
  - Discounted payback and profit / investment ratios
- Using Key Financial Indicators to Assess Value
  - Calculating a suite of key financial and value indicators
  - Using key financial indicators to rank assets by value
  - Factoring in strategic preferences to prioritise certain value indicators
  - Recognising the limitations of specific key financial indicators
- Multi-Year Cash Flow Valuation Models
  - Cash flow analysis model for upstream gas field development
  - Multi-year production profiles
  - Production vs. reserves
  - Capital expenditure and operating cost profiles
  - Using graphics and key financial indicators to frame value
- Valuations Using Various Upstream Fiscal Designs
  - Mineral interest cash flow model
  - Different functions of royalties and taxes
  - Production sharing and cost recovery mechanisms
  - Government and contractor takes underproduction sharing agreements (PSC)
  - Fiscal design model components for production sharing contract

FINANCING ISSUES AND MIDSTREAM TARIFFS

- Valuing Projects Involving Debt and Equity Financing
  - Equity and debt perspective of asset value
  - Debt-supported cash flow model for oil and gas projects
  - Use of loan cover ratios to determine debt repayment schedules
  - Reserve tails and decommissioning issues for lenders
  - Issues potentially leading to default and recall of loans
- Inflation and Currency Exchange Rates
  - Factoring in inflation to multi-year valuations
  - Expressing value in real and nominal terms
  - Applying real and nominal discount rates
  - Inflation indices
  - Currency exchange rate issues in oil and gas asset valuations
- Valuing Infrastructure Throughput Tariffs
  - How infrastructure tariffs are applied
  - Levelised models for valuing infrastructure
  - Capital and cost of capital components
  - Operating and maintenance (O&M) components
  - Alternatives for pricing access to midstream infrastructure
- Valuing Liquefied Natural Gas (LNG) Transactions
  - Components of typical LNG supply chains
  - Cash flow analysis to value LNG supply chains
  - Distance to market impacts on value
  - LNG shipping issues including boil-off gas
  - Netback pricing models
- Valuing Other Gas Transformation Technologies
  - Gas-to-Liquids (GTL) supply chain components
  - Oil product prices and gas prices both impact GTL project value
  - High upfront capital requirements challenge GTL projects
  - GTL plant valuation model
  - Cash flow valuation model a Combined-Cycle Gas Turbine (CCGT) plant
- Evaluating Oil and Gas Price Hedges
  - Hedging oil or gas prices
  - Using futures, swaps and options to hedge prices
  - Profit / loss diagrammatic model for swaps and options
  - How hedges can enhance project risked values

SENSITIVITY AND STOCHASTIC MODELS TO QUANTIFY UNCERTAINTY

- Evaluating Meaningful Cases
  - The need to factor in uncertainty to oil and gas valuations
  - Evaluating downside risks and upside opportunities
  - Sensitivity analysis in valuing oil and gas assets
  - Spider diagrams and tornado charts
  - Breakeven-price analysis
- Building and Forecasting Production Profiles
  - Well decline models to build multi-year production forecasts
  - Exponential, hyperbolic and harmonic decline models
  - Extrapolating well decline curves from historic data
  - Shale gas field development cash flow model
- Expected Monetary Value (EMV) and its Applications
  - Expected Monetary Value (EMV) factors in uncertainty to valuation
  - Decision-tree models use EMV to evaluate alternatives
  - Valuing terms for farm-in / farm-out opportunities
  - Probabilistic risk analysis model to calculate EMV
- Simulation Analysis of Value and Risk
  - Why simulation models help to quantify uncertainty
  - Monte Carlo simulation models
  - Taking care over input distributions to improve credibility of models
  - Considering correlations and dependencies among input variables
  - Demonstration of Excel add-in “Crystal Ball” for simulation and optimisation
- Establishing and Visualising Valuation Confidence Limits
  - Establishing key statistics to express valuation uncertainties
  - Revealing downside risks and upside potential in valuations
  - Statistical Analysis of simulation-calculated distributions
  - Applying Excel’s-in-built statistical analysis package
  - Using graphics to effectively display valuation model outputs

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In-Company Training

The International Faculty of Energy has been the world leader in specialist in-company training for over 20 years. We excel at designing and providing customised training solutions which meet your organisational goals, objectives and business challenges, whilst delivering an outstanding return on investment.

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If you would like to contact us with a registration form via email, please tick which date you wish to register for, providing your contact details below in BLOCK CAPITALS. You can send this to us, using the contact details above.

Course: 3 day IFE Valuation of Oil & Gas Assets
Venue: Central London

4-6 July 2016 (FLF3664)

Full Name:
Email Address:
Phone Number:

Administration Details:
Cost: Including documentation, lunch & refreshments your investment in this course is £1999 plus VAT = £2398.80

The VAT is subject to change and may differ from the advertised rate. The amount you are charged will be determined when your invoice is raised. (Our VAT number is: 365 4626 36)

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PLACES CANNOT BE GUARANTEED UNTIL FULL PAYMENT HAS BEEN RECEIVED.

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