

# Financial Modelling and Petroleum Project Economics

## INTRODUCTION

- Many senior and middle managers do not utilise Excel to its maximum potential. Instead they use it as they would a calculator. If you fall into this category then this training course is for you. Having completed this 10-day training course you will have the requisite tools to utilise Excel to its fullest and be better equipped to challenge decisions.
- In addition, if you work in the upstream or downstream, and your career progression is being restricted by outdated knowledge of modelling techniques then this Financial Modelling and Petroleum Project Economics training course will help you move your career forward.

Highlights of this training course include:

- A course which takes delegates from Excel basics to the most advanced use of Excel
- Real world approach to the discipline
- Numerous examples based around the oil and gas industry
- Dual approach that not only develops modelling skills but also financial management skills

## OBJECTIVES

This training seminar provides delegates with the tools required to find better answers to questions such as:

- How to improve the quality of the quantitative analysis of my corporate presentations
- How to model and advise on hedging price changes in the oil and gas industry
- How to model investment appraisal techniques and utilise decision trees to model the option to abandon

## TRAINING METHODOLOGY

- Each of the sessions will involve formal lectures, demonstration of modelling techniques and the opportunity for practical application. Screen recordings of important techniques and examples will be made available to delegates to assist in the practical applications and to facilitate application of the techniques used when they approach to the workplace.

## **ORGANISATIONAL IMPACT**

By sending delegates on this 10 Day Programme in Financial Modelling & Petroleum Project Economics, your organisation will benefit by:

- Providing your staff with the opportunities to develop high level financial management techniques appropriate to the Oil and Gas industry
- Updating their quantitative techniques to enable them to make better informed decisions
- Transforming their Excel skills so that they leave with advanced knowledge of Excel for financial modelling

## **PERSONAL IMPACT**

By attending this training course, you will:

- Have advanced ability in financial modelling using Excel
- Have a larger skills set when contributing to corporate decisions
- The ability to question important decisions formed using financial modelling

## **WHO SHOULD ATTEND?**

This training course is suitable to a wide range of professionals but will greatly benefit:

- Oil & Gas Field Engineers
- Oil & Gas Managers
- Oil & Gas Auditors
- Oil & Gas Planners
- Financial Analysts
- Decision-makers and Financial Modelers in the up-stream and down-stream Oil and Gas industry
- High level Managers integral to the decision making process who wish to develop their financial modeling skills

## **Course Outline**

**MODULE I: Oil and Gas Financial Modelling - A Practical Approach**

**An Introduction to the Excel Environment, with Oil and Gas based Examples**

- A quick-start tutorial for Excel
- Describing data sets using statistics
- Representing data sets graphically
- Understanding the concept of normal distribution
- Trend analysis using Excel

## Statistical Analysis (Applied to the Oil and Gas Industry) Using Excel

- Use of Excel functions for statistical analysis
- Descriptive statistics
- Mean, Median, Standard deviation, Skewness and Kurtosis
- Use of scatter diagrams, frequency and Histogram distribution
- Regression techniques to calculate cost of equity financing
- Analysis of equity returns of Oil and Gas industry companies
- Mini-Case studies

## Investment Appraisal Using Excel

- Investment appraisal using NPV, IRR and payback as applied to the Oil and Gas industry
- Use of Excel functions for investment appraisal: IRR, PV and NPV
- Modified Internal Rate of Return (MIRR)
- Use of scenario analysis and stress testing
- Predicting financial distress
- Mini-Case studies

## Financial Analysis in the Up and Down Stream Oil and Gas Industry

- Introduction to financial statements
- Ratio analysis applied to the Oil and Gas Industry
- Ratios as a system – pyramids of ratios
- Financial modelling
- Cash flow forecasts using Excel
- Mini-Case studies

## Oil Product Spreads

- Examining the relationship between energy products
- Differences between data sets
- Correlation analysis
- Confidence intervals
- Analysis Of Variance (ANOVA)
- Mini-Case studies

## MODULE II: Petroleum Project Economics & Risk Analysis

### Cashflow Analysis

- Familiarization with Economic terms
- Setting up Cashflow Calculation
- Depreciation Methods
- Loss Carry Forwards
- Inflation

## Economic Indicators

- Economic Indicators Definitions
- Present Value Concept
- Discount Factor
- Net Present Value
- Internal Rate of Return
- Effect of Project Delay
- Payback Period
- Profit / Investment Ratio
- Incremental Projects

## Risks and Uncertainties

- Risk & Uncertainty
- Expected Value Concept
- Decision Tree Analysis
- Farm-out Decision
- Probability Analysis
- Sensitivity Analysis
- Probability Distribution
- Monte Carlo Simulation

## Setting up Spreadsheet Calculation

- Introduction to Spreadsheet Calculation
- Simple Cashflow using Excel
- NPV Calculations
- Application of Economic Indicators
- Class Discussion

## Setting-up Oil Field Development Model

- Group Activities
- Setting up an Integrated Economic Model of a Typical Oil Field Development
- Project Sensitivity Analysis for the Selected Model
- Introduction to Russell Field Model
- Final Remarks