

# Advanced Financial Modelling & Petroleum Project Economics

## INTRODUCTION

- In the globally competitive world of the 21st century, business decision-makers face unprecedented levels of change, risk and uncertainty and nowhere is this more true than in the oil and gas sector. To survive and flourish in this dynamic environment petroleum professionals need the right tools with which to analyse the economic and other challenges faced by their organisations and to anticipate and manage the many opportunities and threats that may emerge. Traditional forms of economic and financial analysis no longer meet these needs and the most progressive firms are using the power of financial models to help them analyse the challenges and take a more powerful approach to managing risk and uncertainty in their planning and forecasting.

This training seminar will highlight:

- The challenge of risk and uncertainty in modern business
- Principles of business planning and performance management
- How financial models can be used to improve business decision-making
- Practical skills in designing financial models using Excel
- Advanced approach to analysing oil and gas sector economic indicators

## OBJECTIVES

- This training seminar has been designed to provide petroleum sector delegates with real practical skills to design and build financial models that will have highly relevant applications in modern oil and gas organisations. By applying advanced techniques for economic and financial analysis, delegates will develop improved skills in forecasting and business decision-making.
- At the end of this training seminar, you will learn to:
- Plan the design and functionality of economic and financial models in Excel
- Use powerful functions built in to Excel for statistical and financial analysis
- Apply financial analysis techniques to improve investment decision-making
- Design and build financial models for forecasting sales, costs and profit
- Implement up to date techniques for managing risk and uncertainty
- Use financial models to assist in business decision-making

## TRAINING METHODOLOGY

- This is a highly participative workshop style training seminar focused on developing practical skills that delegates can apply in real life business situations on return to their own organisation. Each module includes a thorough review of the relevant theory before focusing on life-like business case studies with which delegates can practice the design and construction of financial models, analysis tools and forecast applications in Excel, using laptops provided for the training seminar.

## ORGANISATIONAL IMPACT

- The organisation will benefit from the practical implementation of up to date techniques in financial analysis, forecasting and financial modelling that can be applied to improve the quality and relevance of business decision-making in the context of modern levels of risk and uncertainty – specifically:
  - An integrated approach to managing business risk and uncertainty
  - The use of financial analysis tools improve business information and insights
  - Application of economic and financial models to petroleum project decision-making

## PERSONAL IMPACT

- Delegates will benefit from this hands-on workshop that has been designed to provide them with the essential theory of financial analysis, forecasting and financial decision-making whilst focusing heavily on building the practical skills to develop their own financial models in Excel.
- This training course will greatly enhance their contribution to organisational performance and improve their career prospects by:
  - Developing an awareness of the nature and management of risk and uncertainty
  - Greater involvement in management planning and decision-making
  - Improved knowledge of Excel and its most powerful financial functions
  - Using powerful Excel economic and financial modelling skills for forecasting and decision-making
  - Applying up to date methods to planning and forecasting
  - Understanding and applying investment decision-making techniques

## WHO SHOULD ATTEND?

- This Techniques for Managing Risk and Performance in Oil and Gas training seminar is designed to provide useful insights and practical skills to professionals from a wide range of disciplines and industry sectors, but particularly those involved in planning, forecasting and investment decision-making in an age of risk and uncertainty.
- This training seminar is suitable to a wide range of petroleum sector professionals but will greatly benefit:
  - Finance Professionals
  - Budgeting and Planning Managers
  - Commercial Managers
  - Divisional Managers
  - Purchasing and Supply Chain Managers
  - Project Managers

## Course Outline

### MODULE I - Financial Analysis, Modelling & Forecasting

#### The Competitive Challenge in the 21st Century

- Identifying and Managing Stakeholder Needs
- Business Models and How They are Disrupted
- An Integrated Approach to Risk Management
- The Essentials of Business Performance Management

#### Fundamentals of Financial Modelling

- Financial Statements Basics
- Fundamentals of Financial Modelling

#### Mastering Financial Analysis

- Building a Financial Ratio Database in Excel
- Practical Modelling: The Cost-Volume-Profit Relationship
- Measuring and Improving Return On Investment
- Measuring and Improving Asset Management Efficiency
- Measuring and Managing Capital Structure and Risk
- Practical Modelling: The Effect of Gearing on Shareholders' Earnings

#### Improving Financial Forecasting

- Practical Modelling: Using Excel Statistical Analysis Tools
- Avoiding Common Forecasting Problems
- Using Moving Averages to Analyse Time Series Data
- Using Linear Regression for Sales Trend Analysis
- Using Excel Solver to Minimise Forecasting Error
- Using Regression and Correlation to Forecast Costs
- Practical Modelling: Cash Flow Forecasting

#### Financial Models to Improve Investment Decision-making

- Principles of Capital Investment Decision-making
- Sources and Cost of Business Finance
- Practical Modelling: Using Excel Discounted Cash Flow Tools
- Practical Modelling: Capital Investment Analysis
- Essentials of Business Valuation

## Managing Risk and Uncertainty

- Identifying and Analysing Business Risk
- Probability Based Approach to Decision-making
- Monte Carlo Simulation
- Sensitivity Analysis and “what-if” Forecasting
- Identifying the Key Drivers of Financial Performance
- Practical Modelling: Key Driver “what-if” Forecast

## MODULE II - Petroleum Project Economics & Risk Analysis

### Cash Flow Analysis

- Familiarization with Economic Terms
- Setting-up Cash Flow Calculation
- Depreciation Methods
- Loss Carry Forwards
- Inflation
- Nominal & Real Cash Flow
- Sunk Costs
- Project Financing

### 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 Cash Flow 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

