Leaders Development Institute

Certified Courses

Petroleum Economics, Risk and Decision Analysis

INTRODUCTION

- This training course provides practical guidance in the application of the techniques of the economic analysis currently used in the Oil & Gas industry. When executing a petroleum related project, one should be able to choose the best alternative from an economic point of view, as well as to properly evaluate various investment opportunities by determining economic indicators and sensitivity analysis. Techniques for predicting profit, production costs, and cash flow, enable the analyst to evaluate decision alternatives for optimum results. Understanding economic indicators, risk and uncertainty, different economic structures such as tax regimes and production sharing contracts, enhances the quality and the value of economic analysis.

Participants attending this training course will develop the following competencies:

- Familiarization with the application techniques of the economics analysis in the Oil & Gas industry
- Petroleum related project evaluation methods
- Screening of the petroleum projects based on evaluating the investment opportunities
- Identifying the risks and uncertainties of the project
- Application of risk management methods in mitigating the identified risks of the project

PROGRAMME OBJECTIVES

- This training course aims to enable participants to achieve the following objectives:
- Understand various economic terms used in the Oil & Gas industry
- Understand how to develop economic models of various petroleum fiscal regimes
- Carry out cash flow analysis, different economic analyses for petroleum related project and determine economic indicators
- Evaluate and quantify risks and uncertainties
- Make the right investment decision in the presence of risk
- Carry out a comprehensive economic evaluation study for any petroleum related project including risk analysis and sensitivity study using spreadsheet
- Contribute to the petroleum project investment within a solid economic system and do a detailed economic evaluation
- Contribute to the decision-making process for any petroleum related project

TRAINING METHODOLOGY

- The training approach is based on principles of economic evaluation of petroleum related project with focusing on step by step developing economic models, determining economic indicators, evaluating and quantifying risks and uncertainties and making the right investment decision for the project. To facilitate that, the Microsoft Excel based economics modules will be built and all discussions will be provided using high quality power point slides.

PROGRAM OUTLINE

Cash Flow Analysis

- Familiarization with Economic terms
- Depreciation Methods
- Loss Carry Forwards
- Inflation
- Nominal & Real Cash Flow
- Sunk Costs
- Project Financing

Economic Indicators

- Present Value Concept
- Economic Indicators Definitions
- Payback Period
- Profit/Investment Ratio
- Discount Factor
- Net Present Value
- Internal Rate of Return
- Effect of Project Delay
- 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 IRR 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
- Economic indicators used in decision policy, features, pitfalls to avoid
- Final remarks

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