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# Petroleum Project Economics & Risk Analysis

## INTRODUCTION

- Exploration and Production companies often must evaluate their potential E&P investment using proper present value analysis of expected future cashflows. From the projected cashflows and required investments, the annual rate of return and other project economic indicators can be extracted to evaluate the significance of company investment.
- This Petroleum Project Economics & Risk Analysis 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 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 cashflow 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.

This training course will highlight:

- 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

## OBJECTIVES

The primary objectives of this training course are to:

- Understand various economic terms used in the Oil & Gas industry
- Understand how to develop economic models of various petroleum fiscal regimes
- Carry out cashflow 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

## ORGANISATIONAL IMPACT

By sending delegates on this training course in Petroleum Project Economics and Risk Analysis, your organization will benefit by:

- Participants learn about the application of economic valuation and risk assessment processes and techniques within the global Oil & Gas industry
- Help the participants to identify and analyse the risk involved in a petroleum related project
- Help the participants to apply the decision-making procedures to justify the petroleum projects in term of profitability
- Help the participants to recognize the uses of options in the ranking criteria to select and execute the high profitable project
- Putting values to the Oil & Gas companies' active project through interpretation of economic results of applied case studies
- Help participants to recognize and identify the influencing parameters for oil and gas field developments

## PERSONAL IMPACT

By attending this training course you will:

- Learn to construct a project cashflow model
- Gain the techniques in project ranking and screening
- Gain the operational decision-making techniques under risk
- Capable of identifying the uncertainties in petroleum related project and how to manage them
- Enhance the participant's awareness about influential parameters in an oil and gas field development plan

## WHO SHOULD ATTEND?

- This Petroleum Project Economics & Risk Analysis training course is designed to provide technical and practical approaches to executing a petroleum related project in upstream sector.

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
- Project Management Professionals

## Course Outline

### Cashflow Analysis

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

### 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

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