Advanced Oil & Gas Economic Projections, Risk Uncertainty & Decision Analysis

Handling Uncertain Scenarios

Introduction

One of the most significant, riskiest, and capital-intensive industries is the petroleum sector. Spending on exploration and production worldwide increased to $644 billion in 2013, from $604 billion the previous year, a 7% increase. The budget for exploration reached $654 billion in 2014; however, by 2015, it had dropped to $521 billion, and by 2016, it had decreased by a further 27%. Global expenditures on exploration and production are predicted to rise by 7% this year.

Many issues, including increased costs associated with developing new assets, lower oil and gas discovered per foot of exploratory drilling, growing inflation, global oversupply, and price volatility, are seriously pressuring the profit margins of the upstream industry. Business risk and uncertainty are exacerbated by competition for investments, acreage and concessions, the ageing of existing reservoirs, and the unconventional oil and gas revolution.

Projects in the petroleum business are dangerous by nature; the difficulty is in anticipating, controlling, and reducing this risk. The three most difficult planning tasks are risk management, profitability assessment, and cost prediction. These are all early-stage capital planning responsibilities, and serious losses may result from a failure to properly assess these components.

This training session on Course N Carry will emphasize:

- Determining the steps that must be taken in the risk analysis process, such as planning, modelling, and doing risk analysis
- Creation of the risk model, evaluation of the likelihood of different factors, risk analysis, and investigation of the effects of unknown variables
- Permit the participants to use Excel to generate reports with features like scatter plots, cumulative probability functions, and tornado diagrams.
- To create profitability indicators, decision trees and Monte Carlo simulations are used.
- Give the participants the tools to create probabilistic profitability indicators and cash flow reports for use in making decisions.

Objectives

The following are the main goals of this training programme:

- Discover how to manage ambiguity in petroleum projects.
- Recognize the many economic phrases used in the gas and oil sector.
- Recognize the anticipated value notion and how decision tree analysis is affected by it.
- Discover the anticipated theory's ideas and perspectives on risk, risk eversion, and risk premium.
- Learn to use spreadsheets, including RISK's simulation programme.
- Perform a cash flow analysis for projects using petroleum and compare competing options using basic economic indicators.
- Conduct a thorough economic analysis with spreadsheets to assess projects connected to petroleum by utilizing risk and sensitivity analysis.

Training Methodology

A variety of teaching strategies will be used in this Advanced Oil & Gas Project Economics, Risk & Decision Analysis training course, including but not limited to excellent power point presentations, quick videos, and active class participation.

During this training session, a thorough understanding of quantitative risk analysis approaches and practical problem-solving abilities will be established. The participants will be able to make greater use of the taught content by using PCs to tackle a range of challenges. Additionally, the attendees of this Oil & Gas Technology training course will be able to make the best capital expenditure decisions possible.

The Microsoft Excel add-on @Risk module will be used to enable this Advanced Oil & Gas Project Economics, Risk & Decision Analysis training course, which will also help to foster conversations among the participants.

Organizational impacts

Your company will gain from sending representatives to this training program in the following ways:

- Acquiring knowledge of how to use risk assessment and economic valuation procedures and approaches in the global oil and gas sector
- Assist the participants in determining and evaluating the risk associated with a project linked to petroleum.
- Help the participants implement the decision-making processes to demonstrate the petroleum projects' financial viability.
- In order for participants to actively engage in multidisciplinary review teams, they are taught the decision analysis process and fundamental ideas.
- The Monte Carlo simulation is thoroughly explained and experienced via practical exercises.
- Using case studies to enhance the oil and gas company's ongoing initiatives
- Assist participants in recognizing and identifying the factors that influence advances in oil and gas fields.

Personal Imapct

Attending this training session will enable you to:

- Discover how to define the decision analysis process's components and how to build a project cashflow model that includes sensitivity analysis.
- Use decision tree analysis to assess investments and create alternative designs.
- Learn how to use @Risk to make operational decisions.
- Acquire essential information for recognizing the significant risks in petroleum projects.
- Become more knowledgeable about the factors that impact oil and gas field development initiatives.

Who should attend?

The goal of this Advanced Oil & Gas Project Economics, Risk & Decision Analysis training course is to provide participants practical and technical methods for carrying out upstream petroleum-related projects.

A broad variety of professions may benefit from this Course N Carry training course, but the following are particularly noteworthy:

- Managers of Planning
- Engineers in Oil and Gas
- Supervisors of Projects
- Analysts
- Managers of Commercial Operations
- The economists
- Government Representatives
- Geologists
- Advisors for Businesses
- Managers of Assets
- Managers of E&P
- Managers of Products
- Experts in Project Management

Course Outline

Day 1

Economics of Development

- A concise overview of energy use history
- Development Economics Foundations
- Knowledge of economic terminology
- The effects of inflation on nominal and real cash flows
- Project funding
- Project ranking

Day 2

Investment Uncertainty

- Managing ambiguity in large-scale initiatives
- Knowing the principles of probability
- The idea of anticipated value: advantages and disadvantages
- Monetary Expectation (EMV)
- Index of Expected Profitability (EPI)
- Predicted Loss of Opportunity (EOL)

Day 3

Hazards and Uncertainties

- Uncertainty and risk
- Risk premium and aversion
- Risks and possibilities associated with the exploration project
- Economic standards for decisions
- Analysis of decision trees
- Distribution of probabilities
- Monte Carlo modelling

Day 4

Using Excel to Set Up Spreadsheet Calculations

- Calculations on Spreadsheets
- Analysis of cash flow
- Computations for sensitivity analysis
- Diagrams of tornadoes
- Overview of @Risk Monte Carlo simulations
- Establishing a project in an oil field

Day 5

Using the @Risk add-on practically: Oil Field Development Model

- Creating an oil field development's integrated economic model
- Creating and applying an Analysis of the @Risk Model
- Sensitivity analysis of the project using @Risk Model data

- Final evaluation and closure of the training course

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