

A LDI Training Course

Petroleum Economic Evaluation, Project Cost Estimation and Risk Analysis

by

Sjafri Joenoes & Pulung Susilo Rahardjo

Introduction

The purpose of decision analysis is to help a decision maker think systematically about complex problems and to improve the quality of the resulting decisions. In this regard, it is important to distinguish between a good decision and a lucky outcome. A good decision is one that is made based on a thorough understanding of the problem and careful thought regarding the importance issues. Outcomes, on the other hand, may be unlucky, regardless of decision quality. Therefore, decision analysis allows making effective decisions more consistently.

Course Overview

This course is prepared in 2 phases where first phase will explain regarding project financial understanding when valuing oil and gas assets. Executing a petroleum related project such as field development, evaluate various investment opportunities by determining economic indicators and sensitivity analysis. Understanding techniques for predicting profit, production, costs, and cash flow for optimum result. Familiar with economic indicators, risk and uncertainty, gain knowledge on different economic structures such as tax regimes and production sharing contracts.

This 1st phase course is also designed to give a better understanding of Reserves and Resource Definitions and Guidelines for Classifications. Various

aspects of the evaluation of hydrocarbon reserves as well as learn how to use reserves reports and studies.

2nd phase of the course will explain regarding to manage a complex and risk-laden project successfully you may need a comprehensive and effective management tool. This course will give you the latest concepts, methods and practices used by progressive companies worldwide to manage projects to achieve technical and financial success.

The content of this course phase is based on a structured gate approach to develop a business case, project scope definition and execution planning for successfully result in developing complex projects. The course participants will use Front End Loading (FEL.) method to apply the project management techniques discussed in the course.

The course of whole project from the beginning to the end will take time for 5 days as follow; 2 days for Projects Economics Evaluation and 3 days for Project Cost Estimation and Risk Analysis.

What You'll Learn

1st phase of the course.

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 and determine economic indicators
Carry out different economic analysis for petroleum related projects
Carry out a comprehensive economic evaluation study for any petroleum related project including risk analysis and sensitivity study using spreadsheet
Understand reserves measurement methodology
Understand reserves and resource definitions and guidelines for classification
Understand the relation between technical and commercial aspects of resources
Understand the process performed by independent evaluator in performing reserves certification
Case Study

2nd phase of the course

Select leadership techniques to increase the probability of your success
Apply the concept of complexity science to project management
Determine the true complexity, with a clear understanding of variables involved and move forward to develop a plan that provides the right level of control and flexibility for success
Use a stage-gate methods and Independent Project Analysis (IPA) database to access your goals & business case for better results in developing complex

projects

Determine a new approach to applying already know project management knowledge, skills, tools and techniques, and it will enable you to assess your projects complexity

To deploy the most relevant techniques to achieve project success.

Course Outline

DAY 1: By. Sjafri Joenoes

Economics on Reserves

Economic Indicators

- Discounted Cash Flows
- Present Value
- Cost of Capital
- Internal Rate of Return
- Payback Period
- Profit Investment Ratio
- Maximum Cash in Red

Sensitivity Analysis

Risk and Uncertainties

- Source of Risk
- Source of Uncertainty
- Risk versus Uncertainty
- Decision Tree Analysis
- Spider and Tornado Diagrams
- Quantifying Uncertainty
- Probability Distribution

Production Sharing Contract (PSC)

- History of PSC
- Petroleum Fiscal System
- PSC Definitions and Guidelines
- Upstream Oil and Gas Activity
- Develop PSC Model
- PSC models in other countries

Economic Evaluation on Reserves

DAY 2: By. Sjafri Joenoes

Petroleum Resources Management System (PRMS)

PRMS Definitions and Guidelines

Reserves Reporting Requirement

Reserves Reporting System

Security Exchange Commission (SEC)

Due Diligence and Audit Process

Valuation of Reserves

PSC Economic Model for Reserve Audit

Net Sharing (PSC) vs Gross Sharing

Gross Sharing Contract

DAY 3: by Pulung Susilo Rahardjo

Executive Overview of Project Management

What is a Project and Project Management

What is Program Management

Benefits and Obstacles of Project Management

Basic Concepts of Project Management

Defining Roles of Leadership in a Project

What are Complex Systems

Stage-Gate :

What is the Stage-Gate[®] Process?

How Does the Stage-Gate[®] Process Work?

What are the benefits of using the Stage-Gate[®] Process?

Standardized work process with Front End Loading (FEL)

Project Management Process

The Management Process

The Project Management Process

The Project Life Cycle

Project Life Cycle and Uncertainty

Project Scope Planning

Day 4 : by Pulung Susilo Rahardjo

Work Breakdown Structure (WBS) and Organizational Structures

Work Breakdown Structure

Organizational Structures

Selecting the Organizational Form

Selecting the Project Manager

Building the Project Team

Complex Systems: Organizational Issues

Bounding Project Scope

Stakeholders

Requirements

Project Classification Frameworks-Creating the Project Charter

Project Charter Elements

Examples

Leading and Managing the Project Team

Difference Between Management and Leadership

Power and the Influencing of Behavior

Situational Aspect of Leadership Styles and Follower Readiness

Team-Building and Conflict Resolution Techniques

Successful Motivation Practices

Effective Leader Communications

Task Planning & Introduction to Estimation

Cost & Time Estimates

Equipment Driven Activities

Labor Driven

RAM

Day 5 : by Pulung Susilo Rahardjo

Project Network Modeling

Introduction to Networks

Creating the Network

Determining the Critical Path

Gantt Charts

Fast-Tracking The Project Schedule

Project Management Software

MS Project, Primavera and Other Software Packages

Resource Leveling and Project Budget

Resource Leveling

Generating a Project Budget

Management Reserve/Contingency Funds

Budget Estimation Tips

Project Control

Elements of Project Control

Earned Value Analysis

Change Control and Configuration Management

Risk Management

Risk Management Process

Identifying Risks

Qualitative and Quantitative Techniques

Risk Mitigation

Evaluating, Directing, and Closing Out a Project

Independent Assessments

Project Closeout

Lessons Learned

Who Should Attend

Oil & gas professionals such as project managers, project engineers, project support managers & their staff, project planning & cost controller, auditors, inspector, geologists, economists, accountants, technicians who need to learn

how to conduct economic evaluation and to understand the role of petroleum economics in investment decision making and also to understand the oil & gas project management. This program is also recommended for non-technical financial professionals whose work relates to the petroleum industry, supervisors & managers in the Exploration, Production, Financing and Bank & Insurance Company.

Your Course Instructor

Sjafri Joenoes

He received Bachelor degree from Mechanical Engineering Department, Industrial Engineering Faculty, Bandung Institute of Technology (ITB) on 1979 and also he has Business Master from Prasetya Mulya Business School on 2004. He Has a professional and Practice experiences as various disciplines such as; Drilling, Reservoir Management, Planning & Budgeting more than 35 years in National & Multinational Company Specially Oil & Gas Industry. He retires from PT. Medco E&P Indonesia on year 2013 and focused in Strategic Planning & Budgeting and Specialist of Reserves Management and Reporting

Pulung Susilo Rahardjo

He received Bachelor degree in Aeronautical Engineering Sub-department from Mechanical Engineering Department, Industrial Engineering Faculty, Bandung Institute of Technology (ITB) on 1981. He has a professional and practice experiences as Project Management Senior Staff more than 35 years in National & Multinational Company Special Oil & Gas Onshore & Offshore Industry. He also attended at many project management seminar & course program at Indonesian & overseas institution. He retired from PETRONAS Indonesia (PCINO) on year 2014 and focused in Project Management Advisor.

For more information about the course, please visit
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