

A LDI Training Course

Petroleum Economic Evaluation, Project Cost Estimation and Risk Analysis

by

Sjafri Joenoes & Pulung Susilo Rahardjo

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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 Joenoos

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 please contact to:

PT. Loka Datamas Indah
LDI Training

Telephone: +62 21 6326911
E-mail : Lditrain@indo.net.id
Web site : www.Lditraining.com