Decision Making in the Upstream Oil and Gas Industry

Experience in making the Best Quality Decisions in Complex Challenging Projects

Introduction

Attendees of this training session will acquire a solid grasp of how project teams and management roles work together in oil and gas organisations to produce high-quality decisions.

This training session on decision-making in the oil and gas sector emphasises the contributions of a broad range of scientific, technical, commercial, and business disciplines that go into making difficult choices that need significant investments and deal with a great degree of uncertainty.

The goal of this training session is to prepare early- and mid-career professionals from various fields for leadership roles in the oil industry in the future as well as for working in integrated, multidisciplinary teams on worldwide development projects.

Objectives

Following this training session, attendees will:

- Recognize how multidisciplinary teams at multinational oil and gas firms make important judgments that involve a lot of variables and unpredictability.
- Possess useful abilities and equipment that they can utilise for their upcoming projects.
- Recognise the history of the field and the fundamental principles of oil and gas formation science.
- Acknowledge the significance of wise early planning choices (such as "front-end loading" and concept selection) in producing successful projects.

Training Methodology

The training seminar is given using a combination of theoretical and practical methods, including:

- Engaging in lectures and workshops
- Exercises for both individual and team workshops
- Worked samples displayed on the screen

- Posters and videos
- Discussions and arguments
- Supervised research and self-study
- Tests
- Case studies

Organizational impacts

In this era of rapidly evolving technology, fast-track projects, online collaboration, joint decision making, and "information overload," participants will gain experience using online (cloud) team collaboration information tools and strategies while completing the workshop exercises.

Personal Imapct

Professionals from all backgrounds who are in their early to mid-career stages and want to get ready for roles in business leadership and project teams inside oil companies can benefit from this training course.

Who should attend?

This lecture is especially appropriate for people working in the oil and gas industry who wish to:

- Get ready to take on more leadership and involvement responsibilities in field development, strategic management, and decision-making.
- Prepare oneself for working in close-knit, multidisciplinary, value-focused, fully integrated asset development teams on challenging, large-scale projects.
- Learn about the vast range of field development engineering as well as the difficulties and complexities of facilities engineering on large-scale projects.

Course Outline

Day 1

Overview and Background for Upstream Sector Decision-Making

- **The decision-making context of the industry**. The upstream oil and gas business from a number of important "perspectives," including the value chain, the industry participants, the oil and gas asset lifetime, and the industry's significance in society.

- **The decision-making process in a professional setting**. An overview of the core engineering and geoscience disciplines, including as geophysics, petrophysics, reservoir engineering, well engineering, and facilities engineering, that serve as the foundation for decision-making.
- **Making decisions in the oil and gas upstream sector**. An overview of the science, culture, practice, and difficulties involved in making decisions in the upstream oil and gas industry, including handling uncertainty and insufficient information.

Day 2

Making Choices, Planning for Field Development, and Economics

- **Multi-scenario field development planning as a foundation for judgment**. How the multidisciplinary team, comprising engineers, scientists, and business people, works together to find potential development scenarios that will be used as input for making decisions.
- **Using petroleum economics to inform decisions.** The application of cash flow analysis, time value of money, and investment indicators, among other techniques, to analyse various oil and gas development scenarios and determine which is most profitable and best suited to the company's operations is known as petroleum economics.
- **Workshop for making decisions**. Engaging in practical field development planning, economics, and decision-making tasks, participants can work individually or in groups.

Day 3

Portfolio Management and Decision Analysis

- **Analysing Decisions**. Using tools like expected value, sensitivity analysis, decision trees, and Monte Carlo simulation, the integrated field development team makes complex decisions with a wide range of input parameters to guarantee that extremely large investments are made sensibly and effectively.
- **Management of a Portfolio.** Portfolio theory, options theory, and preference (utility) theory are three advanced economics and decision-making techniques that have their roots in the financial (stocks and shares) business and are increasingly being applied to the strategic management of oil and gas asset portfolios.
- **Workshop on Decision Making.** Engaging in practical field development planning, economics, and decision-making tasks, participants can work individually or in groups.

Day 4

Production Contract Types and How They Affect Decision-Making

- **Licenses and contracts for production**. The terms and circumstances—legal, financial, and contractual—under which an oil corporation obtains the authority to extract oil or gas, as well as the manner in which profits and resources are distributed to the receiving nation.
- **Management of petroleum resources.** The uniform calculation, classification, and reporting of oil and gas volumes in reservoirs (reserves and resources) for investment, regulatory, and management objectives.
- **Workshop for making decisions.** Engaging in practical field development planning, economics, and decision-making tasks, participants can work individually or in groups.

Day 5

How Environmental and Safety Concerns Affect Decision-Making

- **Corporate accountability**. This section addresses the ways in which oil and gas projects are carried out in a way that is socially responsible, environmentally responsible, safe, and respectful of the local community where the operations are taking place.
- **Workshop for making decisions**. Engaging in practical field development planning, economics, and decision-making tasks, participants can work individually or in groups.