

N814: Petroleum Economics and Decision Analysis

Instructor(s): Ed Jankowski

Format and Duration

Classroom - 2 Days

Summary

This course will focus on the economic analysis of oil and gas projects with particular emphasis on how to handle uncertainty and risk to enable better decision making. Probabilistic Reserves and Resource estimation methodology will be explained and volumetric aggregation explained. Participants will be introduced to basic probability theory and the impact of independence vs. dependence explained. This probability theory will be used to introduce probability tree valuation and decision analysis. During this course participants will also learn about the relationship between Reserves and Resources and the role economic analysis plays in determining net bookable volumes.

Learning Outcomes

Participants will learn to:

1. Understand the basic principles of petroleum economic analysis such as the time value of money, discounting and other project cash flow measures.
2. Know what input data and assumptions are needed to undertake an economic analysis.
3. Appreciate the link between hydrocarbon volumes and economic value.
4. Demonstrate an understanding of petroleum fiscal systems and how these link to project net cash flows.
5. Understand the valuation process for Reserves and Resources.
6. Demonstrate an awareness of how this analysis can be used for investment decision purposes.

Training Method

This is a classroom course using a combination of lectures and practical exercises to ensure participants learn and develop an understanding of the concepts covered.

Who Should Attend

This course is designed for staff with a technical background who wish to gain a basic understanding of probability tree analysis and its use in commercial and economic decision making within an upstream exploration and production setting.

Course Content

- Introduction to project valuation and drivers of project revenue
- Valuation process and valuation inputs
- Fundamentals of Economic valuation
- General framework of hydrocarbon fiscal systems
- Details of Tax & Royalty vs. Production Sharing
- Valuation of Reserves (unrisked), sensitivity analysis and evaluation of risk and
- Valuation of Resources (risked)
- Project cash flow analysis (calculation of future cash flows, cash flow metrics), incremental economics and sensitivity analysis

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- Risk mitigation and management
- Portfolio valuation