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# Course: Oil & Gas Economics & Risk Evaluation

| Code     | City    | hotel         | Start      | End        | price    | Language - Hours |
|----------|---------|---------------|------------|------------|----------|------------------|
| OG-148SA | Al Baha | Hotel Meeting | 2027-06-20 | 2027-06-24 | 13950 SR | En - 25          |

## Introduction

Economic evaluation in the oil and gas industry is an encompassing activity. It involves the bringing together of the principal technical and commercial dimensions of a project into a forecast of future performance, that allows different projects to be compared and ranked according to economic and/or other criteria. At its heart, economics is an organizing and quantification exercise. Increasingly, its boundaries are expanding to include a quantification of risk. Risk analysis is a rapidly growing discipline that can take many different forms. It is best understood and applied one step at a time - for professionals and for organizations.

## Seminar Objectives

- Introduce the fundamentals of economic evaluation and of risk analysis in the oil and gas industry.
- Focus on basic, simple and pragmatic solutions.
- Build understanding, apply concepts, use software tools, increase sophistication one step at a time.
- Understand alternative approaches - advantages and disadvantages.
- Use real life examples and situations.

## Organizational Impact

- Develop a clear understanding of the role of economics and risk analysis in an organization.
- Put current economic evaluation/risk analysis practices of your organization into



context.

- Choose and apply approaches that make sense to your organization.
- Make better business decisions with better decision tools.

## Personal Impact

- Sharpen and modernize evaluation skills.
- Become conversant in the languages of economic evaluation and risk analysis.
- Understand fundamentals, learn to take a practical approach.
- Put economics and risk into perspective.

## Who Should Attend

This seminar takes a building block approach to understanding what economic and risk analysis is about. It is designed to become as sophisticated as its participants are comfortable. It will initially be a refresher course for those who are economics professionals and provide a framework for those who are not. We will advance our understanding as a group – learning from real examples and from each other – and we will take a hands-on approach at every opportunity. This is a course for anyone who has an interest in this field.

## Seminar Outline

### DAY 1

#### Introductions

- Who we are, what we hope to accomplish

### Economics 101



- What is economics, where does it fit in an oil & gas company, who are the economists, when do they become activated, why is their work important?
- Exploration versus development versus acquisitions & divestitures.
- The many faces of the economist – economist as expert, organizer, innovator, motivator, communicator.
- The many facets of economics – quantify, optimize, compare and combine projects.
- Beyond economics – financing, financial impact.

## **The Economic Model**

- The framework for economic analysis.
- It's about cash – cash flow versus income, integrated financial statements, value creation.
- It's about the future – point forward versus full-cycle evaluations.
- The fundamentals of cash flow projection – revenues and costs.
- Modeling options – software, styles, needs.

## **DAY 2**

- Recap of Day 1

## **The Economic Model (cont'd)**

- An example – cashflow, economic indicators, graphics, analysis.
- In class assignment and presentations.
- Learning to be critical.

## **Introduction To Risk**

- Exploration risk versus development risk – reserves risk, cost/schedule risk.
- Risk versus uncertainty.
- Risk versus opportunity.
- Risk analysis versus sensitivity analysis.



- Quantitative versus qualitative.

## **Statistics 101**

- About probability distributions.
- Basic statistical concepts – mean, median, mode, skewness.
- About combining probability distributions – Monte Carlo simulation, correlation, tendencies.
- Software tools – Crystal Ball, @Risk, other.
- In class assignment and presentations.

## **DAY 3**

- Recap of Day 2

## **An Exploration Example**

- Set the scene – probability of geological success, reserves distribution, minimum commercial field size, truncation, probability of economic success.
- Simple 5-branch decision tree – success case, risked results.
- What it all means.
- An alternative approach – Monte Carlo simulation.
- Decision trees versus Monte Carlo – two sides of the same coin.
- In class assignment and presentations.
- Getting more sophisticated – a real world example.

## **DAY 4**

- Recap of Day 3

## **A Development Example**

- Set the scene.



- Different priorities at different stages - optimizing decisions, costs and schedule.
- Optimizing decisions - a real world example - from sensitivity analysis to stochastic results.
- The importance of presentation - making it simple.
- Where is the value?

## **DAY 5**

- Recap of Day 4

### **Cost Analysis**

- What is it? Why is it important? Benefits and pitfalls.
- Basic concepts - most likely estimates, deterministic totals, contingency and its dynamics.
- A real world example - the long and short of it.

### **Other Concepts**

- Value of Information, Real Options, RAROC, other.
- Keep on exploring and learning.

### **Recap**

- Concepts, applications & implications.
- What it means for you and your organization



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