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COURSE BROCHURE

Petroleum Economics & Project Evaluation

Professional Training Course

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Course Description

Introduction

Petroleum Economics & Project Evaluation is a specialized executive training program designed to develop the commercial, financial, and strategic capabilities required to evaluate oil and gas investments in complex and uncertain market environments. The course provides participants with a practical understanding of petroleum economics, project cash flow analysis, investment appraisal, fiscal systems, risk assessment, and value-based decision-making across the upstream energy sector.

Oil and gas projects involve substantial capital commitments, long development cycles, volatile commodity prices, technical uncertainty, regulatory obligations, and changing fiscal conditions. Effective project evaluation therefore requires more than basic financial analysis. Decision-makers must understand how production profiles, reserves, development costs, operating expenditure, taxation, royalties, contractual structures, and market assumptions interact to determine project profitability and economic value.

The executive-level value proposition of this program lies in enabling participants to translate technical and commercial data into robust investment decisions. Participants will learn how to build petroleum economic models, evaluate exploration and development opportunities, compare competing projects, assess commercial risks, and communicate investment recommendations to senior management, government authorities, partners, and stakeholders.

Through practical workshops, realistic oil and gas case studies, project evaluation exercises, sensitivity analysis, and decision simulations, participants will gain the confidence to assess petroleum projects systematically and support investment strategies that enhance profitability, resource value, fiscal sustainability, and organizational performance.

Course Objectives

The course aims to enable participants to:

- Understand the fundamental principles of petroleum economics.
- Identify the technical, commercial, and financial drivers of oil and gas project value.
- Develop project cash flow forecasts for petroleum investments.
- Apply recognized investment appraisal techniques to oil and gas projects.
- Evaluate exploration, appraisal, development, and production opportunities.
- Interpret production profiles, reserves, capital expenditure, and operating costs.
- Understand the economic impact of oil and gas prices.
- Assess royalties, taxes, production sharing arrangements, and fiscal terms.
- Compare petroleum projects using appropriate economic indicators.
- Apply discounting and time value of money principles.
- Conduct sensitivity, scenario, and break-even analysis.
- Incorporate uncertainty and risk into project evaluation.
- Evaluate project portfolios and capital allocation priorities.
- Communicate economic results and investment recommendations clearly.
- Strengthen the quality of petroleum investment decisions.

Course Content – 5-Day Training Outline

Day 1: Fundamentals of Petroleum Economics

- Introduction to petroleum economics and its role in energy investment decisions.
- The economic characteristics of oil and gas projects.
- Overview of the petroleum industry value chain.
- Exploration, appraisal, development, production, and abandonment stages.
- Understanding the petroleum project life cycle.
- Technical and commercial factors influencing project value.
- Classification of reserves and resources.
- Relationship between reserves, production, revenue, and profitability.
- Understanding field development concepts.

- Key economic differences between oil and gas projects.
- Conventional and unconventional petroleum developments.
- Offshore and onshore project economics.
- Identifying project stakeholders and decision-makers.
- Understanding commercial objectives in government and corporate environments.
- Practical exercise: identifying the principal value drivers of a petroleum project.

Day 2: Petroleum Cash Flow Modeling and Cost Analysis

- Structure of a petroleum project economic model.
- Establishing the model timeline and evaluation period.
- Developing production profiles.
- Estimating oil, gas, and associated product revenues.
- Understanding commodity price assumptions.
- Applying price differentials, quality adjustments, and transportation costs.
- Estimating exploration and appraisal expenditure.
- Modeling development capital expenditure.
- Forecasting operating and maintenance costs.
- Understanding fixed and variable operating expenditure.
- Estimating decommissioning and abandonment liabilities.
- Applying inflation and escalation assumptions.
- Understanding working capital and payment timing.
- Building annual and periodic project cash flows.
- Distinguishing between nominal and real cash flows.
- Applying model checks and validation procedures.
- Practical workshop: building a petroleum project cash flow model.

Day 3: Investment Appraisal and Economic Decision Criteria

- Understanding the time value of money.

- Applying discounting to petroleum project cash flows.
- Selecting an appropriate discount rate.
- Calculating net present value.
- Calculating internal rate of return.
- Applying payback period analysis.
- Understanding profitability index and value-to-investment measures.
- Calculating unit technical cost and development cost indicators.
- Assessing project cash flow timing.
- Evaluating peak funding requirements.
- Understanding project economic limits.
- Calculating break-even oil and gas prices.
- Comparing alternative development concepts.
- Evaluating project acceleration and deferral decisions.
- Identifying the limitations of individual economic indicators.
- Applying multiple decision criteria to investment evaluation.
- Practical case study: comparing competing petroleum development options.

Day 4: Fiscal Systems, Contracts, and Government Take

- The role of petroleum fiscal systems.
- Understanding the objectives of host governments and investors.
- Overview of concessionary and contractual arrangements.
- Royalties, taxes, bonuses, and participation interests.
- Production sharing arrangements and cost recovery principles.
- Profit petroleum allocation.
- Service contracts and risk service arrangements.
- Understanding contractor take and government take.
- Modeling fiscal terms in project cash flows.
- Evaluating the impact of tax rates and royalty structures.

- Understanding depreciation and tax allowances.
- Treatment of losses and cost recovery limitations.
- Ring-fencing and its economic implications.
- Fiscal stability and contractual risk.
- Evaluating progressive and regressive fiscal systems.
- Comparing petroleum investment opportunities across fiscal regimes.
- Practical workshop: evaluating a project under alternative petroleum fiscal systems.

Day 5: Risk Analysis, Portfolio Evaluation, and Investment Decisions

- Understanding risk and uncertainty in petroleum projects.
- Identifying geological, technical, commercial, financial, and political risks.
- Conducting sensitivity analysis on key project variables.
- Evaluating the impact of oil and gas price changes.
- Testing production, cost, schedule, and reserve assumptions.
- Developing optimistic, expected, and adverse scenarios.
- Applying probability concepts to petroleum project evaluation.
- Understanding expected monetary value.
- Evaluating exploration prospects and geological chance of success.
- Decision tree analysis for staged petroleum investments.
- Understanding the value of additional information.
- Evaluating project delays, cost overruns, and production shortfalls.
- Comparing projects within an investment portfolio.
- Applying capital rationing and project ranking techniques.
- Balancing economic value with strategic and national priorities.
- Presenting economic results to investment committees and senior executives.
- Developing clear investment recommendations.
- Final simulation: evaluating and defending a petroleum investment decision.

Target Audience

This petroleum economics and project evaluation course is suitable for:

- Petroleum economists.
- Oil and gas finance professionals.
- Exploration and production managers.
- Reservoir, petroleum, drilling, and production engineers.
- Geologists and geoscientists involved in project evaluation.
- Field development and project planning specialists.
- Corporate planning and strategy professionals.
- Investment analysts in the energy sector.
- Commercial and business development managers.
- Energy ministry and government officials.
- National oil company professionals.
- Regulatory and petroleum authority personnel.
- Project finance and capital budgeting specialists.
- Joint venture and partnership professionals.
- Contract and fiscal policy specialists.
- Risk management professionals.
- Senior executives reviewing petroleum investments.
- Professionals preparing for commercial or economic roles in the oil and gas industry.

Course Requirements

Participants should have a basic understanding of the petroleum industry, finance, engineering, economics, accounting, or project management. Previous experience in advanced petroleum economic modeling is not required.

Participants should preferably have:

- General knowledge of oil and gas industry operations.

- Basic understanding of financial statements or cash flow concepts.
- Familiarity with percentages, discounting, and basic financial calculations.
- Experience in engineering, finance, economics, planning, or project evaluation.
- Basic spreadsheet skills.
- Access to a laptop with spreadsheet software.
- Willingness to participate in numerical exercises, workshops, and case studies.

Participants will receive practical economic models, project evaluation templates, sensitivity analysis tools, fiscal system exercises, and investment decision checklists.

Training Methodology

The program uses a practical, interactive, and decision-focused methodology that connects petroleum economics principles with real-world oil and gas investment challenges. The learning process develops progressively from core economic concepts to integrated project evaluation and executive investment decision-making.

The training methodology includes:

- Expert-led presentations and facilitated discussions.
- Petroleum economics case studies.
- Step-by-step cash flow modeling demonstrations.
- Spreadsheet-based project evaluation exercises.
- Oil and gas price scenario analysis.
- Capital and operating cost workshops.
- Investment appraisal calculations.
- Fiscal system modeling exercises.
- Sensitivity and break-even analysis.
- Exploration risk and decision tree activities.
- Project comparison and portfolio ranking exercises.
- Group discussions and peer learning.
- Executive investment simulations.

- Practical templates and reusable analytical tools.
- Continuous feedback throughout the course.

The course emphasizes real-world implementation. Participants will analyze realistic petroleum project data, construct economic models, test major assumptions, compare investment alternatives, and present commercially supported recommendations.

Learning Outcomes

By the end of the course, participants will be able to:

- Explain the principles and applications of petroleum economics.
- Identify the principal drivers of oil and gas project value.
- Interpret reserves, production profiles, costs, and price assumptions.
- Build structured petroleum project cash flow forecasts.
- Estimate project revenues, capital expenditure, operating costs, and abandonment liabilities.
- Apply discounting and time value of money principles.
- Calculate and interpret net present value and internal rate of return.
- Evaluate payback, profitability, and unit cost indicators.
- Calculate petroleum project break-even prices.
- Compare alternative field development concepts.
- Assess the impact of royalties, taxation, and contractual terms.
- Evaluate contractor and government economic interests.
- Conduct sensitivity and scenario analysis.
- Measure the impact of production, price, cost, and schedule uncertainty.
- Apply risk-adjusted evaluation techniques to exploration opportunities.
- Use decision trees and expected monetary value.
- Rank projects within a petroleum investment portfolio.
- Support capital allocation and development decisions.
- Present economic findings clearly to senior stakeholders.
- Formulate evidence-based petroleum investment recommendations.

Instructor Profile

The program is delivered by an internationally certified expert with extensive practical and consulting experience.

The instructor possesses advanced expertise in petroleum economics, oil and gas project evaluation, economic modeling, investment appraisal, fiscal systems, production sharing arrangements, risk analysis, field development economics, capital planning, and executive decision support.

The instructor's professional approach focuses on:

- Explaining petroleum economics concepts clearly and practically.
- Connecting technical project assumptions with commercial outcomes.
- Demonstrating economic modeling techniques step by step.
- Using relevant examples from national oil companies, international operators, ministries, and energy organizations.
- Helping participants evaluate realistic petroleum investment opportunities.
- Providing practical tools for immediate workplace application.
- Supporting participants in interpreting risk, fiscal terms, and project value.
- Enabling participants to present investment recommendations with clarity, confidence, and commercial insight.

Contact Us

For registration inquiries, upcoming dates, or group pricing, please contact us:

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