Petroleum Economics and Upstream Fiscal Regimes: Field Cash Flow, Government Take and Risk

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Paris - Right Bank business hotel



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Introduction:

Petroleum economics decides which barrels are worth developing, yet many upstream teams still compare fields on pre-tax figures that ignore how royalty, cost recovery and profit oil splits reshape value for each party. This Core Concept course trains upstream commercial, planning and finance staff to build field cash flow models from production profiles, capex, opex and price decks, run them through concession, production sharing and service contract terms, and read government take, contractor take and breakeven price. Participants leave with a working Field Economics and Fiscal Regime Model and an Investment Recommendation Note.

Course Objectives:

- Build an annual field cash flow model from a production profile, capital and operating cost phasing, abandonment cost and an oil and gas price deck
- Apply royalty and tax concession, production sharing and service contract terms to the same field and explain how each changes contractor value
- Calculate government take, contractor take and fiscal progressivity across price and cost cases and identify front-loaded or regressive terms
- Compute and interpret NPV, IRR, payout, profitability index and breakeven oil price for a development decision
- Quantify subsurface and price uncertainty with expected monetary value, decision trees and concept-level Monte Carlo ranges for exploration and appraisal choices
- Rank upstream opportunities for capital allocation and link field value to reserves categories and downstream margin at overview level

Target Audience:

- Upstream commercial and business development staff who screen licence rounds, farm-in offers and field acquisitions
- Planning and portfolio staff who prepare field development and annual capital budget submissions
- Economics and evaluation staff who run field cash flow models and fiscal sensitivities for management
- Finance business partners who review upstream investment proposals and partner cash call forecasts
- Reserves and asset team leads who need to link production forecasts to economic limits and field value
- National oil company staff who assess contractor bids and state participation terms

Course Outline:

Day 1: Petroleum Economics Foundations and the Field Cash Flow Model

- Upstream Value Chain Economics from Exploration Licence to Abandonment
- Production Profile Inputs: Plateau Rate, Decline Curve and Economic Limit
- Capex, Opex and Abandonment Cost Phasing per Field Development Phase
- Oil and Gas Price Deck Construction with Differentials and Quality Adjustments
- Field Cash Flow Spreadsheet Layout in Money-of-the-Day and Real Terms

Day 2: Petroleum Fiscal Systems: Concessions, Production Sharing and Service Contracts

- Royalty and Tax Concession Mechanics: Royalty Base, Deductions and Income Tax
- Production Sharing Contract Mechanics: Cost Oil, Cost Stop and Profit Oil Tranches
- Service and Risk Service Contract Remuneration Fee per Barrel
- Depreciation, Capital Uplift, Loss Carry-Forward and Ring-Fencing Rules
- State Participation, Carried Interest and Signature and Production Bonuses

Day 3: Fiscal Take Analysis and Economic Indicators

- Government Take and Contractor Take Calculation on Undiscounted and Discounted Bases
- Fiscal Progressivity Tests: R-Factor and IRR-Based Sliding Scales
- NPV at Corporate Discount Rate and IRR on Contractor Net Cash Flow
- Payout Period, Profitability Index and Maximum Cash Exposure for Field Ranking
- Breakeven Oil Price and Unit Technical Cost per Barrel of Oil Equivalent

Day 4: Exploration Risk, Uncertainty and Portfolio Choices

- Chance of Success and Expected Monetary Value for Exploration Prospects
- Decision Tree Build for Appraisal Well and Phased Development Choices
- Monte Carlo Concepts for Volume, Cost and Price Ranges with P90, P50 and P10 Outputs
- Portfolio Ranking by EMV per Unit Capex and Capital Rationing Screens
- Reserves Categories, Commerciality and Asset Valuation Links with a Downstream Refining Margin Overview

Day 5: Modelling Build: Field Economics and Fiscal Regime Model

- Offshore Oil Field Data Pack Review and Model Assumption Log
- Concession Versus Production Sharing Run on the Same Field Case
- Gas Development Case: Price Deck Sensitivities and Fiscal Take Comparison
- Field Economics and Fiscal Regime Model Assembly and Peer Audit
- Investment Recommendation Note Drafting and Panel Defence

Skills You Will Gain:

- Field Cash Flow Modelling
- Production Sharing Entitlement Calculation
- Fiscal Take Measurement
- Fiscal Progressivity Assessment
- Breakeven Price Analysis
- Exploration Risk Weighting
- Upstream Portfolio Ranking
- Price Deck Sensitivity Testing

Why Attend This Course:

- Take back a Field Economics and Fiscal Regime Model and an Investment Recommendation Note built on a realistic field case
- Explain to management why the same barrels carry different value under a concession, a production sharing contract or a service contract
- Challenge licence round terms, farm-in offers and development budgets with take and breakeven figures instead of pre-tax estimates
- Compare fiscal modelling practice with commercial, planning and finance peers from operators, partners and national oil companies

Conclusion:

Upstream value is not set by the reservoir alone: it depends on the fiscal system that divides each barrel between the state and the contractor, and on the price, cost and risk assumptions behind the model. The course moves from field cash flow building through fiscal system mechanics, take analysis and economic indicators to exploration risk and portfolio choices. The final day produces a Field Economics and Fiscal Regime Model and an Investment Recommendation Note ready for internal review.