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COURSE BROCHURE

# Petroleum Economics and Cash Flow Modelling Training Course

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Registered in the United Kingdom and Saudi Arabia

# Petroleum Economics and Cash Flow Modelling Training Course

Petroleum Economics and Cash Flow Modelling is a 2-week advanced training course for financial analysts, planners and commercial managers who build or challenge the economics of upstream oil and gas projects, and it ends with a risked field development economics model. Volatile price decks, tighter capital allocation and energy transition pressure mean every barrel now competes for funding against other opportunities. Jupiter Prime Training delivers this course on petroleum economics and cash flow modelling.

## Why Petroleum Economics and Cash Flow Modelling Matters Now

Three forces shape upstream economics today: oil and gas price cycles that swing faster than project lead times, host governments revising fiscal terms to capture more rent, and investors who expect capital to flow only to projects that survive low-price and carbon-cost cases. A company that models these drivers well sanctions the right wells, negotiates fiscal terms from evidence and defends its numbers before a board. One that models them badly locks capital into fields that never pay back. The course rests on the Petroleum Resources Management System PRMS for linking volumes to commercial maturity, alongside discounted cash flow and decision analysis practice.

## Who Gains Most from Petroleum Economics and Cash Flow Modelling

- Economists and analysts who build field development and exploration cash flow models
- Planners who turn production forecasts and drilling schedules into capital budgets
- Commercial staff who evaluate fiscal terms, farm-in offers and acquisition targets
- Portfolio and strategy staff who rank opportunities for capital allocation
- Reservoir and facilities engineers who supply profiles and cost estimates to valuations

An asset or new-ventures group gains most when its economists, engineers and commercial negotiators attend together and agree one shared modelling logic.

## Petroleum Economics and Cash Flow Modelling Capabilities

Participants move from deterministic spreadsheets to risked, decision-ready valuations of upstream barrels, tested against fiscal regimes and price uncertainty.

- Build a field cash flow model from production profiles, capex, opex and abandonment costs — sanction decisions
- Apply royalty, tax and production sharing terms to calculate government take and contractor entitlement — fiscal negotiations
- Calculate NPV, IRR, payback and profitability index under alternative price decks — investment committees
- Test sensitivity and scenario cases including carbon cost and breakeven price — finance and strategy leads
- Design decision trees and expected monetary value for appraisal and exploration choices — exploration managers
- Weigh opportunities across a portfolio using risked value and capital efficiency — executive leadership

## Key Petroleum Economics and Cash Flow Modelling Terms

- Price Deck — the set of oil and gas price assumptions over time used to value every case in a model.
- Production Sharing Contract PSC — a fiscal agreement where the contractor recovers costs from production and splits remaining profit oil with the host state.
- Government Take — the share of a project's pre-tax cash flow captured by the state through royalty, tax and profit oil.
- Expected Monetary Value EMV — the probability-weighted value of all outcomes of a decision, used to compare risky exploration choices.
- Breakeven Price — the oil or gas price at which a project's net present value equals zero at the chosen discount rate.
- Capital Efficiency — the ratio of a project's net present value to its capital investment, used to rank competing projects.

## Petroleum Economics and Cash Flow Modelling Day by Day

## Day 1: Upstream Value Drivers and the Economic Lens

- Upstream Project Life Cycle — Where Economics Shapes Each Stage Gate
- Time Value of Money — Choosing the Corporate Discount Rate
- Nominal Versus Real Cash Flows — Consistent Inflation Treatment
- PRMS Resource Classes — Linking Volumes to Commercial Maturity
- Economic Limit Concept — When a Field Stops Paying

## Day 2: Production Profiles and Technical Inputs

- Decline Curve Forecasts — Building Well and Field Profiles
- Plateau and Ramp-Up Assumptions — Facility Capacity Trade-Offs
- Capex Phasing Schedules — Timing Drilling and Facility Spend
- Fixed and Variable Opex Drivers — Lifting Cost per Barrel
- Abandonment Cost Estimates — Provisioning for Decommissioning Liabilities

## Day 3: Price Decks and Market Assumptions

- Benchmark Crude Differentials — Realised Price by Quality and Location
- Gas Pricing Formulas — Oil-Indexed Versus Hub-Linked Contracts
- Forward Curves and Long-Term Decks — Selecting Planning Prices
- Carbon Cost Assumptions — Emissions Charges in Project Cash Flow
- Exchange Rate and Escalation Inputs — Cost Inflation Exposure

## Day 4: Fiscal Regimes and Government Take

- Royalty and Tax Systems — Concession Cash Flow Mechanics
- Production Sharing Contract Terms — Cost Oil and Profit Oil Splits
- Ring-Fencing Rules — Deductibility Across Licences
- R-Factor and Sliding Scales — Progressive Fiscal Triggers
- Government Take Comparison — Ranking Fiscal Attractiveness

## Day 5: Building the Cash Flow Model

- Model Architecture Standards — Separating Inputs, Calculations and Outputs
- Annual Cash Flow Waterfall — Revenue to Contractor Net Cash
- Depreciation and Cost Recovery Schedules — Tax Timing Effects
- Contractor Entitlement Barrels — Booking Volumes Under PSC
- Model Integrity Checks — Error Trapping and Version Control

## Day 6: Investment Metrics and Sanction Criteria

- Net Present Value — Core Sanction Threshold
- Internal Rate of Return — Hurdle Rate Comparison and Pitfalls
- Payback and Maximum Cash Exposure — Funding Requirement Limits
- Profitability Index — Capital-Constrained Project Ranking
- Breakeven Price Analysis — Resilience to Low-Price Cycles

## Day 7: Sensitivity and Scenario Analysis

- Tornado Charts — Identifying the Dominant Value Drivers
- Spider Diagrams — Range of NPV Across Input Swings
- Low, Base and High Scenarios — Coherent Price and Volume Cases
- Energy Transition Stress Cases — Demand Decline and Carbon Pricing
- Data Tables and Goal Seek — Fast What-If Questions for Leaders

## Day 8: Risked Economics and Decision Analysis

- Geological Chance of Success — Risking Exploration Prospects
- Expected Monetary Value — Comparing Drill or Drop Choices
- Decision Trees — Sequencing Appraisal and Development Options
- Monte Carlo Simulation — Probabilistic NPV Distributions
- Value of Information — Justifying Seismic or Appraisal Wells

## Day 9: Portfolio Valuation and Capital Allocation

- Capital Efficiency Ranking — Allocating a Fixed Budget
- Efficient Frontier Curves — Balancing Portfolio Risk and Return
- Farm-In and Farm-Out Valuation — Pricing Working Interest Deals
- Acquisition Screening Models — Bid Price and Walk-Away Value
- Board Presentation of Economics — Communicating Uncertainty Clearly

## Day 10: Practising the Risked Field Development Economics Model

- Case Field Profile and Fiscal Set-Up — Applying Days 2 and 4
- Integrated Cash Flow and Metrics — Applying Days 5 and 6
- Scenario and Probabilistic Testing — Applying Days 7 and 8
- Peer Challenge of Model Logic — Exposing Weak Assumptions
- Risked Field Development Economics Model — Final Sanction Recommendation

## Applying Petroleum Economics and Cash Flow Modelling After the Course

- Rebuild one live field or prospect model with separated inputs, a fiscal module and a tornado chart, then review it with the asset engineers.
- Run an expected monetary value and decision tree review of the next appraisal or exploration well before its funding request.

## Petroleum Economics and Cash Flow Modelling Questions FAQ

### What is petroleum economics and cash flow modelling and why does it matter now?

Petroleum economics and cash flow modelling is the practice of turning production, cost, price and fiscal assumptions into the value of an upstream project. It matters now because volatile prices, changing fiscal terms and carbon costs make every capital decision harder to defend.

### Which roles gain most from petroleum economics and cash flow modelling?

Economists, financial analysts, planners and commercial negotiators gain most from petroleum economics and cash flow modelling. Engineers who supply production profiles and cost estimates also benefit, because they see how their inputs move net present value and sanction outcomes.

### How does petroleum economics and cash flow modelling differ from general financial modelling?

Petroleum economics and cash flow modelling centres on upstream drivers that general financial modelling skips. You work with decline curves, production sharing terms, government take, chance of success and decision trees rather than three-statement forecasts and corporate budgeting.

## What do you bring back from petroleum economics and cash flow modelling?

You bring back a working, risked field development economics model built on a case field. It holds a fiscal module, investment metrics, sensitivity charts and a decision tree that you can adapt to your own assets.

## Petroleum Economics and Cash Flow Modelling: The Way Forward

The risked field development economics model first informs whether a field or prospect earns sanction at today's price deck. Asset teams, new-ventures analysts and investment committees use it to compare options on a common basis. After its first use, revisit the fiscal module and the probabilistic cases as prices, terms and carbon assumptions shift, so the model keeps pace with the portfolio.