
Petroleum Project Cash Flow Models: Production, Fiscal Terms, Scenarios and Valuation Course

26 – 30 October 2026
Rome





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Ref: 490_27134 Date: 26 – 30 October 2026 Location: Rome Fees: 5500 GBP

Programme Summary

Petroleum project cash flow models are the focus of this one-week training course for finance, commercial, planning and asset team members and managers, ending in a cash flow model and valuation pack for one oil and gas project. Investment decisions rest on models that few reviewers can trace from production assumptions to value. The programme moves from model structure and inputs, through production profiles, costs and fiscal terms, to scenarios and valuation, then applies them to one project. Mars Training Centre UK delivers this programme on petroleum project cash flow models for mixed-organisation cohorts.

The Business Case

A model that mixes inputs, calculations and outputs hides its own errors. Fiscal terms are simplified, scenarios are pasted rather than built, and value changes that nobody can explain reach the investment committee. Teams that build models with a clear structure and test them against stated cases defend their numbers more easily.

- Decision Confidence: Rises as value can be traced from assumptions through cash flow to results.
- Model Errors: Fall as structure, checks and review steps are built in from the start.
- Project Comparison: Improves as projects are valued on common inputs and the same fiscal logic.

Principles and Evidence Base

- Discounted cash flow: It underpins the valuation work of Sessions 4 and 5.
- Net present value and internal rate of return: They frame the project value measures built in Session 4.
- Sensitivity analysis: It guides the testing of assumptions and the ranking of value drivers in Session 4.

Intended Participants

- Finance analysts and managers who prepare or review project economics.
- Commercial staff who evaluate contract and fiscal terms.
- Planning and portfolio staff who compare projects for investment.
- Asset team members who supply production and cost assumptions.
- Managers who receive models and judge how far to rely on them.

Typical functions include finance, commercial, planning and asset management in upstream oil and gas, midstream and energy investment.



Learning Outcomes

1. Participants will be able to construct a model structure that separates inputs, calculations and outputs.
2. Participants will be able to build production profiles and price, cost and capital cases for an oil and gas project.
3. Participants will be able to evaluate how fiscal terms and contract terms change project cash flow.
4. Participants will be able to apply discounted cash flow, net present value and internal rate of return to value a project.
5. Participants will be able to diagnose weak assumptions and errors using scenario analysis, sensitivity analysis and model checks.
6. Participants will be able to present a cash flow model and valuation pack for one oil and gas project.

Programme Structure

Day 1: Model Structure and Inputs

How is a petroleum project model structured so that it can be checked?

- Model Layout Template
- Input Sheet and Case Selector Design
- Units and Time Axis Convention
- Model Check and Error Flag Table
- Assumption Register

Day 2: Production Profiles, Prices and Costs

How are production, price and cost assumptions turned into annual figures?

- Production Profile Build-Up
- Plateau and Decline Curve Sketch
- Price Deck and Differential Table
- Operating Cost Schedule
- Capital Expenditure Phasing Sheet

Day 3: Fiscal Terms and Cash Flow

How do fiscal terms and contract terms turn revenue into project cash flow?

- Fiscal Terms Summary Matrix
- Royalty and Tax Calculation Block
- Cost Recovery and Profit Split Walk-Through
- Working Capital and Timing Adjustment
- Project Cash Flow Statement



Day 4: Scenarios, Sensitivities and Valuation

How is value measured, and which assumptions move it most?

- Discount Rate and Discounted Cash Flow Table
- Net Present Value and Internal Rate of Return Sheet
- Scenario Analysis Case Table
- Sensitivity Analysis Tornado Chart
- Break-Even Price Estimate

Day 5: Applying the Model to One Project

Does the model hold when tested on one oil and gas project?

- Applying the Session 1 Model Checks to the Project Model
- Testing the Session 2 Production Profile Against Field Data
- Reviewing the Session 3 Fiscal Calculation with Peers
- Checking the Session 4 Valuation Against the Scenarios
- Completing the Valuation Pack

Methodology

The programme uses a structured exercise method built on anonymised production data, price decks, fiscal term summaries and short written cases. Participants build one model in small groups, explain their structure and assumptions to peers from other functions, and receive facilitator feedback on each worksheet, including every check and every scenario.

- Suggested activity: Locating and correcting a planted error in a project model.
- Suggested activity: Comparing the cash flow of one field under two fiscal terms.
- Suggested activity: Ranking the value drivers of a project from a sensitivity chart.

Capstone Output

Each participant completes a cash flow model and valuation pack for one oil and gas project. It holds a structured model, a production and cost case, a fiscal calculation, a set of scenarios and a sensitivity summary. The pack is used at work to brief investment committees, review colleagues' models and compare projects on one basis.



Frequently Asked Questions

Is training on petroleum project cash flow models suitable for staff new to financial modelling?

Yes. The programme assumes spreadsheet familiarity and basic finance, not earlier experience of project models.

Which methods do petroleum project cash flow models rest on in this programme?

They rest on discounted cash flow, net present value, internal rate of return and sensitivity analysis.

How is the valuation pack for petroleum project cash flow models used at work?

You use it to brief investment committees, review colleagues' models and compare projects on one basis in your own organisation.

How does learning petroleum project cash flow models differ from a programme on energy investment appraisal?

It centres on building and checking the model itself, while energy investment appraisal centres on judging project economics, risk and capital allocation.