
Project Economics for Executives: Valuation, Uncertainty and Investment Choices Training Course

23 November – 4 December 2026
Tokyo





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Programme Summary

Project economics is the subject of this ten-day training course for directors, finance leaders and programme sponsors at strategic level, ending in an investment recommendation paper for one live project. Capital commitments are often approved on single-point forecasts that hide how wrong they can be. The programme moves from valuation and modelling to uncertainty, probabilistic analysis and decision analysis, then to an applied case. Mars Training Centre UK delivers this programme in project economics.

The Business Case

When investment cases rest on one set of assumptions, boards approve projects whose downside they have never seen and reject others whose upside they never tested. Organisations that quantify uncertainty before commitment can compare projects on the same basis, size contingency with evidence and stop weak proposals earlier, while keeping a clear record of why each decision was taken.

- Forecast Variance: Narrows as assumptions are graded, ranges are elicited and drivers are tested before approval.
- Capital Allocation Quality: Improves as projects are ranked on risk-adjusted value rather than headline return.
- Cost of Overruns: Reduces as contingency and staged funding are sized from modelled downside.

Principles and Evidence Base

- Time Value of Money: Discounted cash flow and net present value form the valuation basis used in Sessions 1, 2 and 7.
- ISO 31000:2018: Its risk management process structures the identification and treatment of uncertainty in Sessions 3 and 8.
- ISO 31010: Its catalogue of risk assessment techniques guides the choice of sensitivity, scenario, simulation and decision tree methods in Sessions 4 to 6.
- Expected Utility Theory: It explains how risk appetite changes the preferred option in Session 6.

Intended Participants

- Executives who approve or reject capital commitments on behalf of their organisation.
- Finance leaders who own the models and assumptions behind investment cases.
- Programme sponsors who must defend a project's economics before a board.
- Risk and strategy leads who challenge the uncertainty analysis in submitted proposals.

The programme serves energy, infrastructure, manufacturing and public-sector organisations.



Learning Outcomes

1. Participants will be able to construct a transparent economic model for a capital project.
2. Participants will be able to diagnose the assumptions and uncertainties that drive project value.
3. Participants will be able to evaluate downside and upside using sensitivity, scenario and simulation results.
4. Participants will be able to prioritise competing investments under a capital limit.
5. Participants will be able to justify a decision using decision trees and measures of risk appetite.
6. Participants will be able to challenge an investment case before it reaches an approval committee.

Programme Structure

Day 1: Project Economics Foundations

How does a project create or destroy value for the organisation?

- Time Value of Money and Discounting
- Incremental Cash Flow Identification
- Net Present Value and Internal Rate of Return
- Cost of Capital and Hurdle Rate Setting
- Sunk Costs and Opportunity Costs

Day 2: Building the Economic Model

What does a transparent project economic model contain?

- Model Architecture and Input Sheet Design
- Revenue and Cost Driver Trees
- Inflation, Currency and Tax Treatment
- Payback and Profitability Index
- Model Review and Error Checking Protocol

Day 3: Uncertainty and Risk Identification

Which uncertainties move project value and how are they found?

- ISO 31000:2018 Risk Management Process
- Risk Breakdown Structure for Investments
- Assumption Log and Evidence Grading
- Expert Elicitation of Ranges
- Risk Register Linked to Cash Flows



Day 4: Sensitivity and Scenario Analysis

How far can value change before the decision changes?

- One-Way Sensitivity and Tornado Charts
- Break-Even and Switching Value Analysis
- Scenario Construction from Drivers
- Probability-Weighted Scenarios
- ISO 31010 Techniques Selection Matrix

Day 5: Probabilistic Modelling

What is the range of outcomes and how likely is each?

- Probability Distribution Selection
- Monte Carlo Simulation Set-Up
- Correlation Between Inputs
- Reading Cumulative Probability Curves
- Value at Risk and Downside Measures

Day 6: Decision Analysis

How is the best choice made when outcomes are uncertain?

- Decision Tree Construction
- Expected Monetary Value Calculation
- Utility and Risk Appetite Measurement
- Value of Information Analysis
- Real Options and Staged Commitment

Day 7: Comparing and Ranking Investments

Which projects deserve scarce capital?

- Mutually Exclusive and Independent Choices
- Unequal Life Comparison Methods
- Capital Rationing and Portfolio Ranking
- Risk-Adjusted Return Comparison
- Whole-Life Cost and Benefit Trade-Offs

Day 8: Financing, Contracts and Risk Allocation

How do funding structure and contract terms shift project risk?



- Debt and Equity Impact on Returns
- Risk Allocation Between Parties
- Contingency and Reserve Sizing
- Hedging and Mitigation Options
- Stage-Gate Funding Release Rules

Day 9: Governance and Challenge of Investment Cases

How can an investment case be challenged before approval?

- Investment Committee Review Questions
- Optimism Bias and Anchoring Checks
- Independent Model Assurance
- Post-Investment Review Design
- Decision Record and Audit Trail

Day 10: Applying Project Economics to a Live Case

Is the investment recommendation ready for an approval committee?

- Applying the Session 2 Model to the Case
- Running the Session 5 Simulation on Case Inputs
- Testing the Session 6 Decision Tree
- Challenging the Case with Session 9 Questions
- Completing the Investment Recommendation Paper

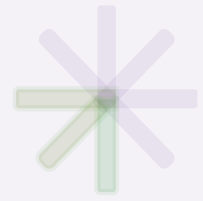
Methodology

The programme is built around structured exercises and case analysis. Participants work with an anonymised capital project in teams, build and stress a valuation model, run probabilistic analysis on its inputs and defend a recommendation before a simulated approval committee. Spreadsheet skills are useful, though no programming is required.

- Suggested activity: Building a tornado chart for a pipeline expansion project.
- Suggested activity: Drawing a decision tree for a staged facility investment.
- Suggested activity: Ranking six proposals under a fixed capital budget.

Capstone Output

Each participant completes an investment recommendation paper for one project. It contains a valuation model summary, a graded assumption log, sensitivity and simulation results, a decision tree, a contingency and funding proposal and a recommendation. It is used to brief an investment committee and to set the review points that follow approval.



Frequently Asked Questions

Is project economics training suitable for executives without a modelling background?

Yes. Project economics training is set at strategic level and assumes experience of reading investment cases and financial statements, not model building or statistics.

Which standards does project economics analysis rest on in this programme?

Project economics analysis rests on discounted cash flow valuation, ISO 31000:2018 for the risk management process and ISO 31010 for risk assessment techniques.

How is the project economics recommendation paper used at work?

You use the project economics recommendation paper to brief an investment committee, justify contingency and funding, and set review points after approval.

How does project economics differ from a programme on project management?

Project economics focuses on whether a project should be funded and how uncertain its value is, while project management focuses on delivering scope, time and cost once funded.