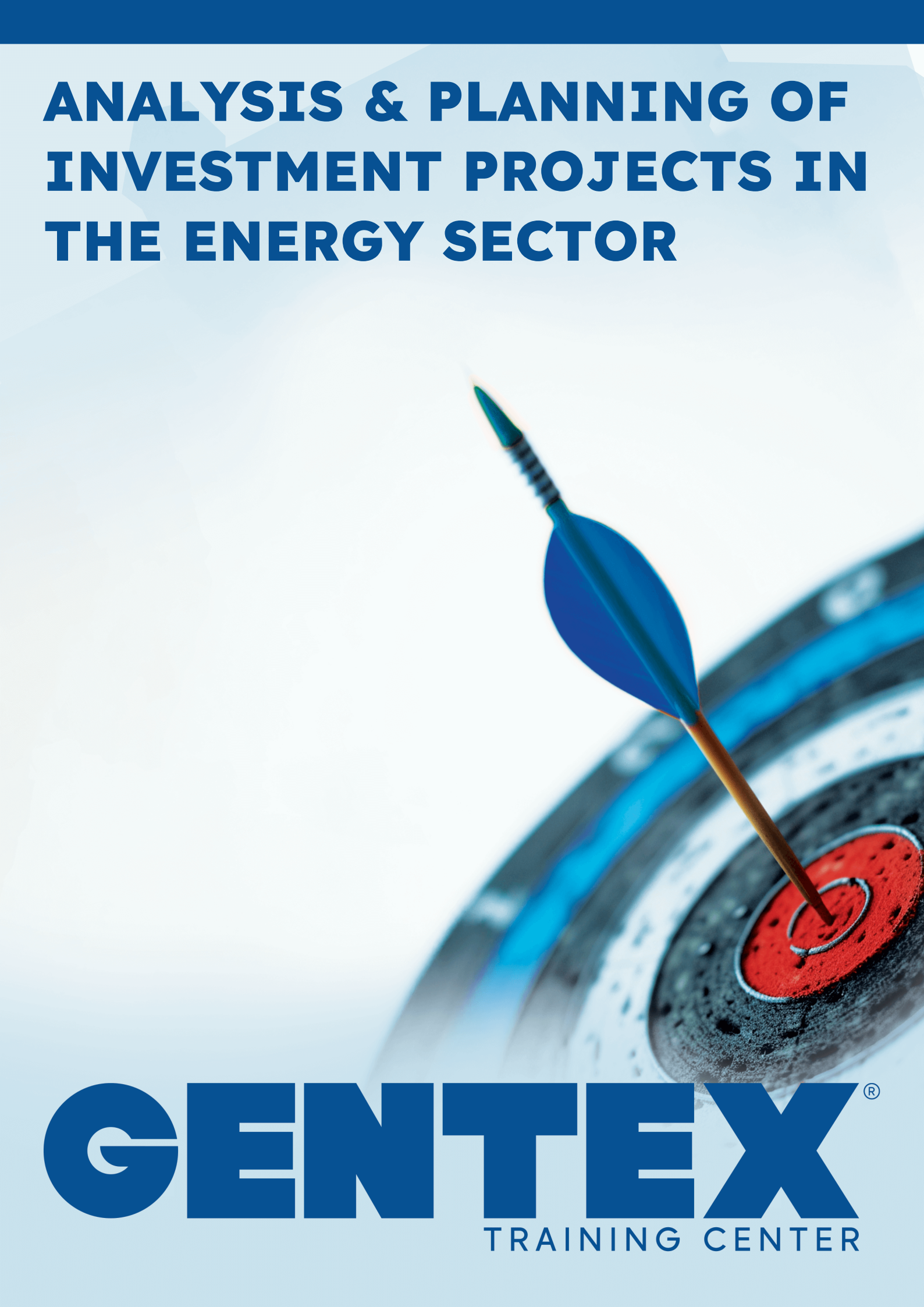
# ANALYSIS & PLANNING OF INVESTMENT PROJECTS IN THE ENERGY SECTOR



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# Introduction

Analysis & Planning of Investment Projects in the Energy Sector Training Course builds the appraisal capability that energy investment decisions demand. Energy projects commit large capital for decades, and their returns depend on assumptions about prices, demand, technology, and regulation that all move. Weak analysis therefore carries consequences that outlast the analysts who produced it. This course builds the opposite practice. It covers project identification, feasibility study structure, and cash flow modelling. Furthermore, it applies NPV, IRR, and break-even analysis along with sensitivity, scenario, and Monte Carlo methods. In addition, it covers financing structures, risk allocation, and project evaluation reporting. As a result, participants plan energy investments on evidence that withstands challenge.

# Analysis & Planning of Investment Projects in the Energy Sector Course Objectives

- Explain the energy project lifecycle from concept to operation.
- Structure a feasibility study covering technical, market, and financial analysis.
- Build integrated cash flow models for energy investment projects.
- Apply net present value, internal rate of return, and payback criteria.
- Estimate cost of capital and select defensible discount rates.
- Calculate break-even prices and project economic limits.
- Perform sensitivity, scenario, and Monte Carlo risk analysis.
- Evaluate financing structures and project finance arrangements.
- Assess regulatory, market, and technology risks in energy projects.
- Prepare investment appraisal reports for decision committees.

# Course Methodology

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- Interactive lectures with real energy investment and appraisal cases.
- Feasibility study structuring and cash flow modelling workshops.
- Valuation, sensitivity, and Monte Carlo analysis exercises.
- Project finance and funding structure practice.
- Structured peer review with facilitator feedback on appraisal conclusions.

## Who Should Take This Course

- Energy investment and project analysts.
- Corporate planning and strategy professionals in energy.
- Project finance and banking professionals.
- Feasibility study and business development analysts.
- Energy asset managers and engineers moving into investment roles.
- Consultants preparing energy investment appraisals.

## Analysis & Planning of Investment Projects in the Energy Sector Course Outlines

## Day 1: Energy Project Lifecycle and Opportunity Identification

- Energy project types: generation, transmission, storage, and efficiency.
- Project lifecycle from concept and screening to operation.
- Opportunity identification and strategic fit assessment.
- Pre-feasibility screening and option comparison.
- Regulatory context and permitting considerations.

- Stakeholder mapping and approval pathways.
- Case study: screening three energy investment options.

## Day 2: Feasibility Study Structure and Modelling

- Feasibility study sections and sequencing.
- Technical and operational feasibility inputs.
- Market analysis, demand forecasting, and price assumptions.
- Capital expenditure and operating cost estimation.
- Cash flow model structure and assumption documentation.
- Inflation, escalation, and currency treatment.
- Workshop: building a feasibility stage cash flow model.

## Day 3: Investment Appraisal and Decision Criteria

- Time value of money and discounting principles.
- Net present value and internal rate of return application.
- Payback, discounted payback, and profitability index.
- Weighted average cost of capital and hurdle rate setting.
- Break-even price and economic limit calculation.
- Ranking mutually exclusive and capital-constrained projects.
- Workshop: appraising an energy project and defending the recommendation.

## Day 4: Risk Analysis and Uncertainty

- Sensitivity analysis with data tables and tornado charts.
- Scenario design and case management.
- Monte Carlo simulation and probability output interpretation.

- Risk register construction and mitigation planning.
- Technology, market, and regulatory risk assessment.
- Real options for staged and flexible energy investments.
- Workshop: running a Monte Carlo appraisal and interpreting results.

## Day 5: Financing, Reporting, and Decision Delivery

- Funding sources: equity, debt, grants, and green finance.
- Project finance structures and non-recourse arrangements.
- Debt sizing using DSCR and LLCR coverage ratios.
- Power purchase agreements and revenue stability.
- Investment appraisal report structure and executive summary.
- Presenting to investment committees and handling challenge.
- Course review, assessment, and action planning.

## Conclusion

By successfully completing Analysis & Planning of Investment Projects in the Energy Sector, participants will gain a thorough understanding of the energy project lifecycle, feasibility study structuring, cash flow modelling, investment appraisal criteria, cost of capital, risk and uncertainty analysis, financing structures, and appraisal reporting. They will also acquire practical skills in energy project feasibility analysis, cash flow modelling and investment appraisal, risk, sensitivity and Monte Carlo analysis, and energy project financing and appraisal reporting. In addition, the course prepares them to plan and justify energy investments with defensible evidence. Gentex Training Center delivers this programme with a strong focus on applied appraisal technique and evidence-based investment decisions.

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# FAQs for Analysis & Planning of Investment Projects in the Energy Sector course

## Q1 What is the "Analysis & Planning of Investment Projects in the Energy Sector" course about?

It is a five-day programme on appraising and planning energy investments. It covers the energy project lifecycle, feasibility study structuring, cash flow modelling, NPV, IRR and payback criteria, cost of capital, break-even analysis, sensitivity, scenario and Monte Carlo risk analysis, financing structures, and appraisal reporting.

## Q2 What are the key benefits of the "Analysis & Planning of Investment Projects in the Energy Sector" course?

Participants commit capital on tested evidence rather than optimistic assumption. The course exposes weak demand and cost forecasts early, improves model structure and assumption documentation, sharpens discount rate and break-even calculation, quantifies downside risk explicitly, strengthens financing and debt service modelling, and raises the quality of investment committee submissions.

## Q3 What skills will I gain from the "Analysis & Planning of Investment Projects in the Energy Sector" course?

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Participants gain energy project feasibility analysis, cash flow modelling and investment appraisal, risk, sensitivity and Monte Carlo analysis, and energy project financing and appraisal reporting. These four skills cover the practical core of energy investment analysis and planning.

## Q4 What tools, methods, or standards are covered in the "Analysis & Planning of Investment Projects in the Energy Sector" course?

The course covers energy project type classification across generation, transmission, storage and efficiency, the project lifecycle from concept to operation, pre-feasibility screening and option comparison, regulatory and permitting assessment, stakeholder mapping, feasibility study structure across technical, market and financial sections, demand forecasting and price assumption setting, capital expenditure and operating cost estimation, cash flow model structure and assumption documentation, inflation, escalation and currency treatment, time value of money, net present value, internal rate of return, payback, discounted payback and profitability index, weighted average cost of capital and hurdle rate setting, break-even price and economic limit calculation, mutually exclusive and capital-constrained project ranking, sensitivity analysis with data tables and tornado charts, scenario design and case management, Monte Carlo simulation and probability output interpretation, risk register construction and mitigation planning, technology, market and regulatory risk assessment, real options analysis, equity, debt, grant and green finance funding sources, project finance non-recourse structures, debt sizing with DSCR and LLCR, power purchase agreement revenue structuring, and investment appraisal report preparation.

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# Q5 How is the "Analysis & Planning of Investment Projects in the Energy Sector" course applied in real-world practice?

Participants apply the methods to live and simulated energy projects. They screen opportunities, structure feasibility studies, build cash flow models, calculate NPV and IRR, set hurdle rates, determine break-even prices, run sensitivity and Monte Carlo analysis, assess technology and regulatory risk, model debt sizing against coverage ratios, and prepare investment committee papers with clear recommendations. Many leave with a feasibility study template, a project model, and a risk analysis workbook ready to use.