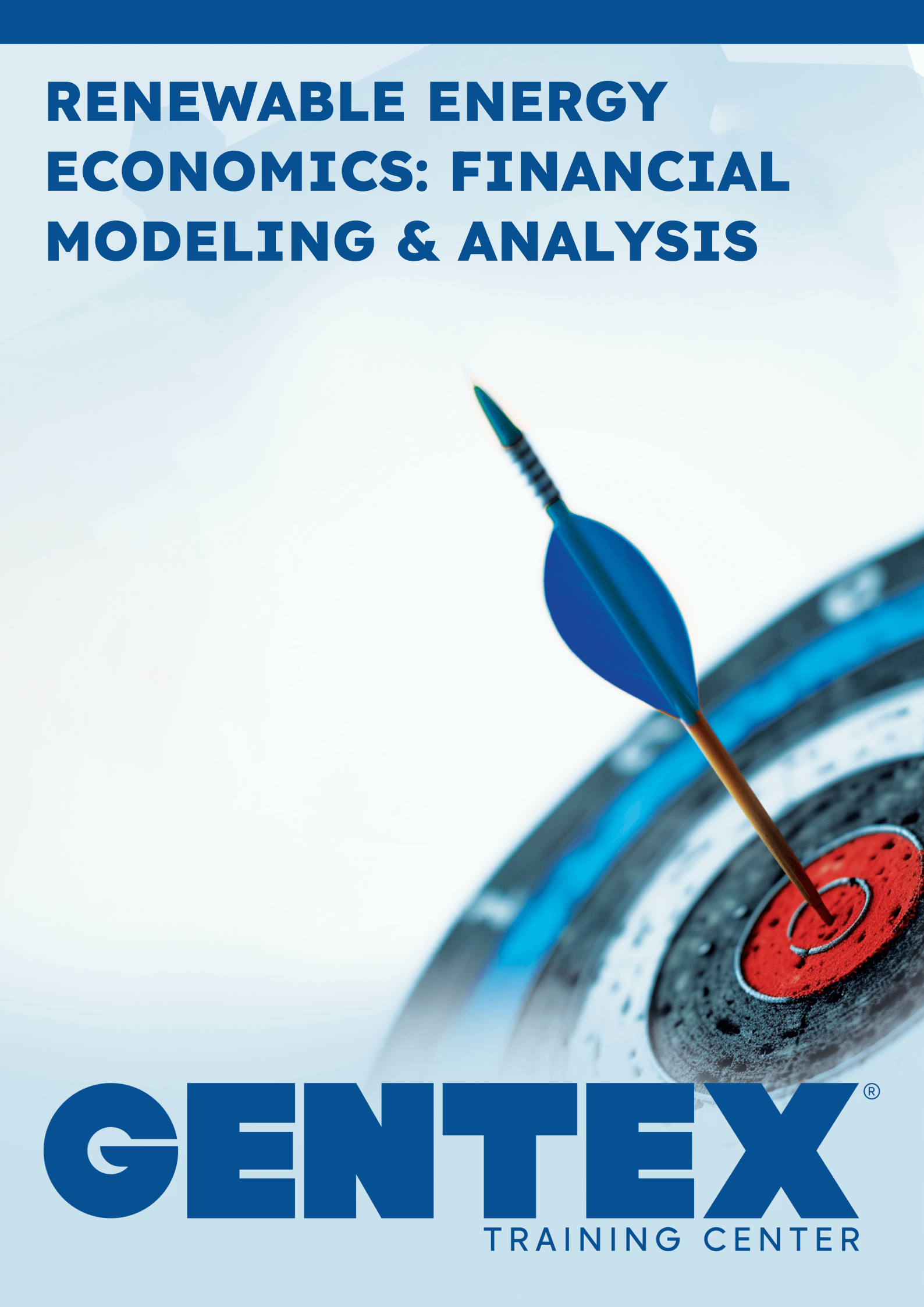
RENEWABLE ENERGY ECONOMICS: FINANCIAL MODELING & ANALYSIS



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Introduction

Renewable Energy Economics: Financial Modeling & Analysis Training Course equips energy, finance and advisory professionals to test the economics of solar, wind and storage projects with rigour. Participants learn how support schemes, tariffs and power purchase agreements shape revenue, then how to model it in Microsoft Excel. The programme covers levelised cost of electricity, investment appraisal, debt sizing, tax equity and incentive structures, sensitivity analysis and portfolio decisions. Furthermore, it addresses merchant risk, storage economics and grid-related cost drivers. As a result, delegates can build a renewable project model and defend its returns. Gentex Training Center delivers the programme through live Excel workshops and applied project case work.

Renewable Energy Economics: Financial Modeling & Analysis Course Objectives

- Explain renewable energy market structures, support schemes and tariffs.
- Apply power purchase agreement structures to revenue modelling.
- Calculate levelised cost of electricity for competing technologies.
- Build renewable project cash flow models in Microsoft Excel.
- Apply discounted cash flow, NPV, IRR and XIRR to project decisions.
- Size debt using debt service coverage ratio and gearing targets.
- Model tax incentives, depreciation and grant support correctly.
- Apply sensitivity, scenario and Monte Carlo analysis to key drivers.
- Assess merchant risk, curtailment and storage economics.
- Compare technologies and rank opportunities in a project portfolio.

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Course Methodology

The course combines technical briefings with extensive hands-on Excel workshops and applied project case studies. Participants build a full renewable energy project model, calculate levelised cost, size debt and test returns under uncertainty. In addition, structured peer review sharpens judgement, and each day closes with an applied modelling task.

Who Should Take This Course

- Renewable energy analysts, developers and project finance staff.
- Investment analysts and infrastructure fund professionals.
- Energy company finance, planning and commercial teams.
- Lenders, credit analysts and advisers on energy transactions.
- Regulators and utility planning staff assessing tariffs.
- Consultants and engineers supporting renewable project appraisal.

Renewable Energy Economics: Financial Modeling & Analysis Course Outlines

Day 1: Renewable Energy Markets and Revenue Structures

- Solar, wind, hydro and storage technology overview.
- Support schemes: feed-in tariffs, auctions, contracts for difference and certificates.
- Power purchase agreement structures and pricing mechanisms.
- Merchant exposure, capture prices and cannibalisation effects.
- Grid connection, curtailment and balancing cost treatment.

- Market and regulatory risk by jurisdiction.
- Workshop: mapping revenue streams for a renewable project.

Day 2: Levelised Cost and Technology Comparison

- Levelised cost of electricity methodology and formula.
- Capital cost, operating cost and capacity factor assumptions.
- Lifetime, degradation and repowering considerations.
- Technology comparison across solar, onshore wind, offshore wind and storage.
- Grid parity and competitiveness assessment.
- Sensitivity of levelised cost to capital cost and capacity factor.
- Workshop: calculating levelised cost for competing technologies.

Day 3: Project Cash Flow Modelling in Excel

- Model architecture, inputs, calculations and outputs.
- Construction phase and operational phase modelling.
- Revenue modelling from tariffs, contracts and merchant prices.
- Operating costs, asset management fees and major maintenance.
- Reserve accounts and decommissioning provisions.
- Tax, depreciation and incentive structures.
- Workshop: building a renewable project cash flow model.

Day 4: Financing, Debt Sizing and Risk Analysis

- Debt sizing using debt service coverage ratio targets.
- Gearing, tenor and amortisation profile design.
- Tax equity, grant funding and blended finance structures.

- Interest rate and inflation hedging considerations.
- Sensitivity tables, scenario switches and tornado charts.
- Monte Carlo simulation for production, price and cost uncertainty.
- Workshop: sizing debt and testing returns under uncertainty.

Day 5: Portfolio Decisions, Storage and Investment Presentation

- Storage economics and co-located asset analysis.
- Portfolio ranking across technologies and markets.
- Repowering, expansion and asset life extension options.
- Investment committee papers and lender submissions.
- Documenting assumptions and model audit.
- Presenting a renewable investment case under challenge.
- Workshop: presenting a renewable energy investment case to a panel.

Conclusion

By successfully completing Renewable Energy Economics: Financial Modeling & Analysis Training Course, participants will have acquired the knowledge to model renewable energy projects and assess their economics with evidence. They will understand support schemes and power purchase agreements, levelised cost of electricity, cash flow modelling, debt sizing, incentive structures and risk analysis, and they will know how to compare technologies fairly. As a result, delegates support energy investment decisions with stronger analysis. Gentex Training Center builds the programme around current energy market practice.

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FAQs for the Renewable Energy Economics: Financial Modeling & Analysis course

Q1 What is the "Renewable Energy Economics: Financial Modeling & Analysis" course about?

It covers the economics and financial modelling of renewable energy projects. You learn support schemes and power purchase agreements, levelised cost of electricity, Excel cash flow modelling, debt sizing and incentives, sensitivity and Monte Carlo analysis, storage economics and portfolio ranking.

Q2 What are the key benefits of the "Renewable Energy Economics: Financial Modeling & Analysis" course?

You gain the ability to model a renewable project end to end and compare technologies fairly. You also improve revenue assumptions under different support schemes, size debt against coverage targets, quantify production and price risk, and present investment cases that stand up to lenders and committees.

Q3 What skills will I gain from the "Renewable Energy Economics: Financial Modeling & Analysis" course?

You will gain renewable energy market and revenue structure analysis, levelised cost of electricity and technology comparison, renewable project financial modelling in Microsoft Excel, and project debt sizing, risk analysis and portfolio investment appraisal.

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Q4 What tools, methods, or standards are covered in the "Renewable Energy Economics: Financial Modeling & Analysis" course?

The course covers feed-in tariff, auction, contracts for difference and certificate support schemes, power purchase agreement and merchant pricing structures, levelised cost of electricity calculation, capacity factor and degradation assumptions, Microsoft Excel functions including IF, SUMIFS, INDEX, MATCH, XLOOKUP and CHOOSE, discounted cash flow with NPV, IRR and XIRR, debt service coverage ratio and gearing debt sizing, amortisation and sculpted repayment profiles, reserve account and decommissioning provision modelling, tax, depreciation and tax equity structures, one-way and two-way data tables, tornado charts and Monte Carlo simulation, storage economics and co-location analysis, and assumptions registers and model audit techniques.

Q5 How is the "Renewable Energy Economics: Financial Modeling & Analysis" course applied in real-world practice?

Graduates apply it to build and review renewable project models, bid in auctions and negotiate power purchase agreements, calculate levelised cost for technology selection, size debt for project financing, test returns under production and price uncertainty, assess storage and co-location cases, rank portfolio opportunities, and prepare investment papers for lenders and investment committees.