ADVANCED ENERGY FINANCE ANALYTICS



GENTEX®
TRAINING CENTER

GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Introduction

Advanced Energy Finance Analytics Training Course builds the quantitative and analytical skill that energy investment decisions now demand. Energy assets are capital-intensive, long-lived, and exposed to volatile prices, regulatory change, and transition risk all at once. Spreadsheet intuition no longer covers that combination. This course develops the analytical toolkit required. It covers energy financial modelling, valuation, and cash flow forecasting. Furthermore, it applies commodity price simulation, cost of capital, project finance structuring, and risk quantification. In addition, it covers commodity trading analytics, hedging, and portfolio analysis. As a result, participants produce analytical work that withstands investment committee scrutiny.

Advanced Energy Finance Analytics Course Objectives

- Build integrated financial models for energy assets and projects.
- Forecast energy cash flows using drivers and operating assumptions.
- Value energy assets using DCF, multiples, and NAV methods.
- Simulate commodity prices using stochastic models.
- Estimate cost of capital and discount rates for energy investments.
- Structure project finance including debt sizing and coverage ratios.
- Quantify price, volume, and counterparty risk exposures.
- Apply Value at Risk and Monte Carlo methods to energy portfolios.
- Analyse hedging strategies using futures, swaps, and options.
- Assess transition and stranded asset risk analytically.

Course Methodology

- Interactive lectures with real energy valuation and lending cases.
- Financial modelling workshops building integrated asset models.

GENTEX® TRAINING CENTER

- Commodity price simulation and Monte Carlo exercises.
- Project finance structuring and covenant modelling practice.
- Structured peer review with facilitator feedback on analytical outputs.

Who Should Take This Course

- Energy analysts and financial modellers.
- Investment banking and project finance professionals.
- Corporate finance and treasury staff in energy firms.
- Investment analysts and portfolio managers.
- Risk analysts in energy and commodity trading.
- Consultants advising on energy transactions and valuations.

Advanced Energy Finance Analytics Course Outlines

Day 1: Energy Financial Modelling Foundations

- Financial model architecture and best practice design.
- Driver-based revenue and cost modelling for energy assets.
- Operating assumptions: capacity, utilisation, and efficiency.
- Capex, opex, and lifecycle cost modelling.
- Working capital and cash flow integration.
- Error checking, audit trails, and model documentation.
- Case study: reviewing a flawed energy model for structural errors.

Day 2: Valuation and Cash Flow Forecasting

- Free cash flow projection for energy assets.

- Discounted cash flow valuation and terminal value approaches.
- Net asset value and sum of the parts valuation.
- Multiples valuation using EV/EBITDA and price-to-cash flow.
- Discount rate selection and cost of capital estimation.
- Sensitivity, scenario, and break-even valuation analysis.
- Workshop: valuing an energy asset using DCF and multiples.

Day 3: Commodity Price Simulation and Risk Quantification

- Commodity price behaviour and mean reversion concepts.
- Geometric Brownian motion and mean-reverting models.
- Monte Carlo simulation for price and volume uncertainty.
- Value at Risk and expected shortfall for energy portfolios.
- Correlation, dependency, and portfolio aggregation.
- Stress testing and scenario-based risk analysis.
- Workshop: simulating price paths and quantifying portfolio VaR.

Day 4: Project Finance and Deal Structuring

- Project finance principles and non-recourse structures.
- Debt sizing using DSCR and LLCR coverage ratios.
- Gearing, tenor, and amortisation profile design.
- Covenant structuring and cash waterfall modelling.
- Interest rate and currency hedging in project finance.
- Refinancing and exit modelling.
- Workshop: sizing debt and modelling a cash waterfall.

GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Day 5: Trading Analytics and Portfolio Optimisation

- Energy trading analytics and position reporting.
- Hedging with futures, swaps, and options.
- Basis risk, location spread, and time spread analysis.
- Portfolio optimisation and capital allocation.
- Transition and stranded asset risk analytics.
- Model governance, validation, and documentation standards.
- Course review, assessment, and action planning.

Conclusion

By successfully completing Advanced Energy Finance Analytics, participants will gain a thorough understanding of energy financial modelling, valuation and cash flow forecasting, commodity price simulation, risk quantification, project finance structuring, and portfolio and trading analytics. They will also acquire practical skills in integrated financial model building, energy asset valuation, project finance and covenant modelling, and risk quantification using Monte Carlo and Value at Risk techniques. In addition, the course prepares them to support energy investment decisions with rigorous, defensible analytics. Gentex Training Center delivers this programme with a strong focus on applied modelling technique and analytical rigour.

FAQs for Advanced Energy Finance Analytics course

GENTEX® TRAINING CENTER

GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Q1 What is the "Advanced Energy Finance Analytics" course about?

It is a five-day programme on the quantitative analysis behind energy investment decisions. It covers integrated financial modelling for energy assets, DCF, NAV and multiples valuation, commodity price simulation, Monte Carlo and Value at Risk analysis, project finance structuring with DSCR and LLCR, hedging analytics, and portfolio optimisation.

Q2 What are the key benefits of the "Advanced Energy Finance Analytics" course?

Participants produce analysis that survives investment committee and lender review. The course improves model structure and error control, sharpens valuation ranges and break-even estimates, quantifies price and volume uncertainty explicitly, strengthens debt sizing and covenant modelling, improves hedging and portfolio decisions, and makes transition and stranded asset exposure measurable.

Q3 What skills will I gain from the "Advanced Energy Finance Analytics" course?

Participants gain integrated energy financial model building, energy asset valuation and cash flow forecasting, project finance and covenant modelling, and risk quantification using Monte Carlo, Value at Risk and stress testing. These four skills cover the practical core of energy finance analytics.

GENTEX® TRAINING CENTER

GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Q4 What tools, methods, or standards are covered in the "Advanced Energy Finance Analytics" course?

The course covers financial model architecture and best-practice design, driver-based revenue and cost modelling, capacity, utilisation and efficiency assumption setting, capex, opex and lifecycle cost modelling, working capital integration, model error checking and audit trails, free cash flow projection, discounted cash flow valuation, terminal value approaches, net asset value and sum of the parts valuation, multiples valuation using EV/EBITDA and price-to-cash flow, discount rate and cost of capital estimation, sensitivity and break-even valuation, geometric Brownian motion and mean-reverting price models, Monte Carlo simulation, Value at Risk and expected shortfall, correlation and dependency analysis, stress testing, project finance non-recourse structures, debt sizing with DSCR and LLCR, gearing and amortisation design, covenant structuring, cash waterfall modelling, interest rate and currency hedging, refinancing and exit modelling, futures, swaps and options hedging strategies, basis and time spread analysis, portfolio optimisation, stranded asset risk analytics, and model governance and validation standards.

Q5 How is the "Advanced Energy Finance Analytics" course applied in real-world practice?

Participants apply the methods to live energy assets and portfolios. They build integrated models, project cash flows from operating drivers, value assets with DCF, NAV and multiples, simulate commodity prices, quantify VaR and stress losses, size project debt against coverage ratios, model cash waterfalls, structure hedging programmes, optimise capital allocation, and assess transition risk exposure. Many leave with an integrated model template, a debt sizing worksheet, and a risk quantification module ready to use.