

Advanced LNG Option Pricing and Risk Management Training Course

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Overview

Advanced LNG Option Pricing and Risk Management Training Course is a one-week advanced course for LNG trading, portfolio, quantitative, treasury, and model-risk functions who leave with an LNG Option Valuation and Hedge Workbook. Participants connect advanced LNG option pricing, JKM LNG options, the LNG forward curve, an LNG volatility surface, and LNG cargo optionality to valuation, hedge, and control decisions. The course separates exchange-traded contracts from embedded physical flexibility and tests basis, correlation, freight, and model risk. Agile Leaders Training Center presents LNG option valuation and risk practice.

Who Should Attend

- Trading functions responsible for LNG derivatives, market exposure, and hedge execution
- Portfolio functions responsible for cargo economics, basin spreads, and contract flexibility
- Quantitative functions responsible for valuation models, calibration, and sensitivity analysis
- Risk and treasury functions responsible for limits, liquidity, hedge effectiveness, and P&L review
- Structuring and commercial functions responsible for embedded options and deal valuation
- Model-risk functions responsible for validation, controls, assumptions, and independent challenge

The course assumes participants already use forward curves, option payoffs, discounting, and spreadsheet models at work, and it leaves out introductory derivatives, general crude-oil trading, and physical LNG operations.

Departments and Industries

The course supports departments and industries that price, hedge, govern, or review LNG-linked optionality.

- LNG trading, origination, and portfolio management
- Gas, power, and multi-commodity risk functions
- Energy producers, utilities, and industrial gas buyers
- Commodity finance, treasury, and market-risk departments
- Shipping, freight, and cargo optimization functions
- Quantitative analytics, valuation control, and model validation

Learning Objectives

By the end of this course, participants will be able to:

- Analyze LNG price formation, contract terms, and embedded flexibility
- Build forward curves, basis maps, and volatility inputs
- Apply Black-76, Asian, spread, lattice, and simulation methods
- Evaluate cargo, destination, volume, delivery, and swing optionality
- Use Greeks, scenarios, stress tests, and P&L attribution
- Prioritize hedge design, model validation, and governance controls

Course Agenda

Day 1: Establish LNG Optionality

- LNG Physical Flow, Contract, and Optionality Map
- JKM, TTF, Henry Hub, and Oil-Index Price Linkage Matrix
- DES, FOB, Freight, Boil-Off, and Netback Calculation Sheet
- Destination, Diversion, Volume, and Delivery Flexibility Register
- LNG Option Valuation Scope and Model-Governance Record

Day 2: Build Market Inputs

- LNG Forward Curve Construction and Tenor Alignment Method
- TTF-JKM, Henry Hub, Oil-Linkage, and Freight Basis Map
- Historical and Implied Volatility Estimation Worksheet
- Volatility Smile, Term Structure, and Surface Calibration Grid
- Correlation, Basis Risk, and Market-Data Validation Checklist

Day 3: Value Traded Options

- JKM European Option Payoff and Contract-Specification Sheet
- Black-76 Call, Put, Discounting, and Put-Call Parity Model
- Average-Price Asian Option Sampling and Valuation Method
- Spread Option and Cross-Market Correlation Model
- Delta, Gamma, Vega, Theta, and Scenario Sensitivity Dashboard

Day 4: Value Physical Flexibility

- Cargo Destination and Diversion Option Decision Tree
- Volume, Delivery, Swing, and Storage-Style Flexibility Model
- Freight, Boil-Off, Delay, and Operational Constraint Overlay
- Monte Carlo and Lattice Flexibility Valuation Workflow
- Hedge Design, P&L Attribution, Stress, and Model-Risk Register

Day 5: Practice LNG Valuation

- Suggested Exercise: Build an LNG Forward and Basis Curve
- Suggested Exercise: Calibrate Volatility and Price JKM Options
- Suggested Exercise: Value Cargo Diversion and Spread Flexibility
- Suggested Exercise: Design a Hedge and Explain P&L Attribution
- Capstone Exercise: Complete the LNG Option Valuation and Hedge Workbook

Practical Exercises

The course uses suggested activities to convert market, contract, and operational evidence into traceable valuation and hedge decisions.

- Suggested activity: align JKM, TTF, Henry Hub, oil-indexed, and freight inputs across forward tenors and basis conventions.
- Suggested activity: calibrate volatility inputs and compare Black-76, Asian, spread, lattice, and simulation results.
- Suggested activity: value destination, diversion, volume, delivery, swing, freight, and boil-off effects under constraints.
- Suggested activity: explain Greeks, hedge performance, scenario results, P&L attribution, and model limitations.

FAQs

Who suits advanced LNG option pricing training, and what does it assume?

Advanced LNG option pricing training suits trading, portfolio, quantitative, risk, treasury, structuring, and model-validation functions. It assumes participants can work with forward curves, option payoffs, discounting, and spreadsheet valuation models.

How does LNG option pricing differ from introductory commodity derivatives training?

LNG option pricing applies derivatives methods to JKM references, average prices, basin spreads, cargo flexibility, freight, boil-off, basis, correlation, calibration, and model governance. Introductory commodity derivatives training focuses on basic payoffs and market terminology.

How are JKM LNG options valued?

JKM LNG options are valued from the relevant futures or forward reference, strike, discounting, time, and volatility assumptions. The method also reflects whether the contract is European-style or average-price and how settlement specifications define the payoff.

How is LNG cargo optionality measured?

LNG cargo optionality is measured by comparing feasible destination, diversion, timing, volume, and delivery decisions after price spreads, freight, boil-off, delays, constraints, and correlations are represented in a decision tree, lattice, or simulation.

How are LNG option hedges reviewed?

LNG option hedges are reviewed through Greeks, basis and correlation exposures, scenario and stress results, transaction constraints, hedge rebalancing, P&L attribution, model validation, and documented limits on the valuation approach.

Conclusion

Participants take back an LNG Option Valuation and Hedge Workbook linking price curves, volatility, contract terms, cargo flexibility, valuation methods, sensitivities, and controls. It changes separate market views and contract judgments into one auditable decision path. The workbook supports pricing review, hedge selection, stress testing, P&L explanation, model challenge, and governance.

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