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COURSE BROCHURE

Advanced LNG Option Pricing and Valuation Training Course

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Registered in the United Kingdom and Saudi Arabia

Advanced LNG Option Pricing and Valuation Training Course

LNG Option Pricing and Valuation is a 2-week advanced training course for LNG traders, risk analysts and commercial managers that ends with an LNG Optionality Valuation Book for one supply or offtake contract. Liquefied natural gas now trades through a mix of oil-indexed term deals, hub-linked spot cargoes and flexible destination clauses, so every contract hides options that carry real money. Jupiter Prime Training treats LNG option pricing and valuation as the discipline that puts a number on that flexibility.

Why LNG Option Pricing and Valuation Matters Now

Three forces shape LNG valuation today: volatile spreads between oil-linked and hub-linked prices, a growing share of portfolio players who resell cargoes across basins, and boards and auditors who expect embedded contract options to be valued and reported. A trading house or producer that prices volume, destination and timing flexibility correctly can negotiate better terms and hedge exposure at lower cost. One that treats these features as free may give away value or carry risks it cannot see. The course rests on the Black-76 futures option model, Monte Carlo simulation, mean-reverting price processes and option sensitivity measures known as the Greeks.

Who Gains Most from LNG Option Pricing and Valuation

- Traders who price spot cargoes, diversions and time spreads
- Risk analysts who measure portfolio exposure and set hedge limits
- Commercial negotiators who structure term supply and offtake clauses
- Valuation specialists who report embedded derivatives and fair values
- Shipping and scheduling planners whose fleet choices create or destroy option value

Trading desks that send traders, risk analysts and contract negotiators together gain most, because each clause is then priced with the same models used to hedge it.

LNG Option Pricing and Valuation Capabilities

Participants turn contract wording and forward curves into option values, sensitivities and hedge ratios that a desk can act on.

- Calculate option values with Black-76 on gas and oil-linked forwards — cargo bid and offer prices
- Build volatility and correlation estimates from market and historical data — model calibration choices
- Design Monte Carlo models for swing, spread and destination options — term contract negotiations
- Apply Greeks to size delta and vega hedges — portfolio risk limits
- Assess oil-indexed price formulas with slopes, lags and caps — supply contract renewal decisions
- Communicate option values and risks to non-quantitative managers — commercial approval committees

Key LNG Option Pricing and Valuation Terms

- Black-76 model — An option pricing model for futures and forwards, widely used to value commodity options on gas and oil prices.
- Swing option — A right to vary delivered or lifted volume within contract limits across periods, each choice changing remaining rights.
- Spread option — An option whose payoff depends on the difference between two prices, such as two hubs or gas and oil.
- Destination flexibility — A contractual right to divert a cargo to another market, valued as an option on regional price spreads.
- Implied volatility — The volatility that makes a model price equal an observed market option price.
- Delta and vega — Sensitivities of option value to the underlying price and to volatility, used to size hedges.

LNG Option Pricing and Valuation Day by Day

Day 1: Flexibility in the LNG Value Chain

- LNG Contract Types From Term to Spot — Where Options Sit
- Oil-Indexed and Hub-Linked Pricing — Price Exposure Mapping
- Portfolio Players and Cargo Resale — Trading Strategy Choices
- Shipping and Regasification Constraints — Physical Limits on Flexibility
- Inventory of Embedded Options in a Sample Contract — Valuation Scope

Day 2: Forward Curves and Price Dynamics

- Building Gas and Oil Forward Curves — Curve Construction Methods
- Seasonality in Gas Prices — Shape Adjustments
- Mean Reversion and Jump Processes — Price Model Selection
- Basis and Location Differentials — Regional Spread Behaviour
- Data Sources and Cleaning for Calibration — Input Quality

Day 3: Volatility and Correlation

- Historical Versus Implied Volatility — Estimate Selection
- Volatility Term Structure and Smile — Strike-Dependent Pricing
- Correlation Between Gas Hubs and Oil — Spread Option Inputs
- Stress Periods and Regime Changes — Robust Parameters
- Volatility Surface Fitting — Model Consistency

Day 4: Black-76 and Closed-Form Methods

- Black-76 for Futures and Forward Options — Vanilla Pricing
- Asian and Average-Price Options — Oil-Indexed Contract Features
- Margrabe and Kirk Approximations — Spread Option Pricing
- Caps, Floors and Collars on Price Formulas — Protection Clauses
- Model Limitations and Error Checks — When Closed Form Fails

Day 5: Monte Carlo Simulation

- Simulating Correlated Price Paths — Scenario Generation
- Variance Reduction Techniques — Run Time Control
- Least-Squares Monte Carlo for Early Exercise — Decision Rules
- Convergence and Accuracy Testing — Confidence in Results
- Spreadsheet and Code Implementation Choices — Desk Tools

Day 6: Swing and Volume Options

- Annual and Monthly Volume Tolerance Clauses — Swing Rights Definition
- Take-or-Pay and Make-Up Provisions — Penalty Valuation
- Dynamic Programming for Swing Valuation — Optimal Lifting Strategy
- Cargo Cancellation Options — Downward Flexibility Value
- Swing Option Case Valuation — Negotiation Benchmarks

Day 7: Destination, Timing and Spread Options

- Diversion Rights and Profit-Sharing Clauses — Shared Upside Valuation
- Inter-Basin Spread Options — Shipping Cost Adjustment
- Time Spread and Storage-Like Options — Delivery Window Value
- Fleet Availability as an Option Constraint — Realistic Exercise
- Real Option View of Liquefaction Capacity — Investment Decisions

Day 8: Greeks and Hedging

- Delta, Gamma, Vega and Theta for LNG Positions — Risk Measurement
- Delta Hedging With Futures and Swaps — Hedge Ratio Setting
- Cross-Commodity Hedges for Oil-Indexed Exposure — Basis Risk
- Dynamic Hedge Rebalancing — Transaction Cost Trade-Offs
- Hedge Effectiveness Testing — Accounting and Reporting

Day 9: Portfolio Risk and Governance

- Value at Risk and Expected Shortfall for LNG Books — Limit Setting
- Model Risk and Independent Validation — Control Framework
- Credit and Counterparty Exposure on Options — Collateral Decisions
- Fair Value Reporting of Embedded Derivatives — Audit Readiness
- Risk Committee Reporting Packs — Senior Management Oversight

Day 10: Practising the LNG Optionality Valuation Book

- Option Inventory for a Case Supply Contract — Applying Clause Mapping
- Calibrated Curves and Volatilities — Applying Market Data Methods
- Closed-Form and Simulation Valuations — Applying Pricing Models
- Greeks and Hedge Programme — Applying Risk Measures
- LNG Optionality Valuation Book — Values, Hedges and Negotiation Positions

Applying LNG Option Pricing and Valuation After the Course

- List every volume, timing and destination option in one live LNG contract and estimate its value with Black-76 or a simple simulation.
- Recalculate the delta and vega of the desk's main open positions and compare the hedges in place with the sizes the Greeks suggest.

LNG Option Pricing and Valuation Questions FAQ

What is LNG option pricing and valuation, and why does it matter now?

It is the use of option models to value flexibility in LNG contracts and cargoes. It matters now because volatile price spreads and cargo resale make volume, timing and destination rights worth real money that must be priced and hedged.

Which roles gain most from LNG option pricing and valuation skills?

LNG traders, risk analysts and commercial managers gain most. Valuation specialists and shipping planners also benefit, because reported fair values and fleet decisions both depend on how embedded options are modelled.

How does an LNG option pricing and valuation course differ from a general energy trading course?

It focuses on quantitative valuation of contract flexibility. You price swing, spread and destination options with Black-76 and Monte Carlo, while a general trading course covers market structure, instruments and price risk at a broader level.

What do you bring back from LNG option pricing and valuation training?

You bring back a valuation book for a case contract. It lists embedded options, calibrated inputs, model values, Greeks and a hedge plan, ready for desk and negotiation use.

LNG Option Pricing and Valuation: The Way Forward

The LNG Optionality Valuation Book gives a trading desk one record of what each contract right is worth and how it is hedged. Its first use is often a term contract renewal or cargo diversion decision, read by traders, risk managers and negotiators. Revisit its volatility and correlation inputs each quarter, because LNG spreads rarely keep their behaviour for long.