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COURSE BROCHURE

LNG Liquefaction, Shipping and Regasification Training Course

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Registered in the United Kingdom and Saudi Arabia

LNG Liquefaction, Shipping and Regasification Training Course

LNG Liquefaction, Shipping and Regasification is a 2-week training course for LNG plant engineers, operations supervisors and commercial staff who run or sell cargoes from liquefaction trains, built around an LNG chain reliability dossier that follows a cargo from feed gas to send-out. New supply, flexible buyers and tighter methane emission expectations reward plants that keep trains available and cargoes on schedule. Jupiter Prime Training delivers this course on LNG Liquefaction, Shipping and Regasification.

Why LNG Liquefaction, Shipping and Regasification Matters Now

Three forces shape LNG today: a wave of new liquefaction capacity that squeezes margins, buyers who want destination flexibility and shorter contracts, and investors who scrutinise methane slip and flaring at every node of the chain. A plant that keeps its trains at design throughput, controls boil-off and meets cargo windows protects revenue and buyer trust; one that suffers trips, off-spec cargoes or demurrage loses both. The course rests on recognised liquefaction process families, international gas carrier and terminal safety practice, and the structure of sale and purchase agreements SPA used across the trade.

Who Gains Most from LNG Liquefaction, Shipping and Regasification

- Process engineers who tune pre-treatment, refrigerant cycles and cold box performance
- Operations supervisors who run trains, storage tanks and jetty loading shifts
- Marine and shipping coordinators who plan carrier schedules and cargo windows
- Commercial analysts who manage annual delivery programmes and cargo nominations
- Regasification terminal staff who control send-out, vaporisers and gas quality

An LNG asset that sends its process, marine and commercial staff together gains most, because train constraints and cargo commitments are then planned as one chain.

LNG Liquefaction, Shipping and Regasification Capabilities

Participants leave able to trace every tonne from inlet gas to grid and explain where it is lost or delayed.

- Assess acid gas removal, dehydration and mercury removal performance — cold box protection decisions
- Compare mixed refrigerant and cascade liquefaction cycles — train debottlenecking choices
- Calculate boil-off gas rates for tanks and carriers — compressor and reliquefaction sizing
- Design cargo scheduling against train outages — buyer delivery commitments
- Weigh vaporiser options and send-out flexibility — terminal capacity planning
- Apply hazard and consequence analysis to cryogenic releases — plant and jetty safety cases

Key LNG Liquefaction, Shipping and Regasification Terms

- Liquefaction train — a single processing line that treats, cools and condenses natural gas to about minus 162 degrees Celsius.
- Mixed refrigerant — a blend of hydrocarbons and nitrogen whose boiling range matches the gas cooling curve to raise liquefaction efficiency.
- Boil-off gas — vapour formed when heat leaks into stored or shipped LNG, which must be compressed, burnt or reliquefied.
- Rollover — a sudden release of vapour when stratified LNG layers of different density mix inside a storage tank.
- Annual delivery programme — the yearly cargo schedule agreed between seller and buyer under a long-term sale contract.
- Open rack vaporiser — a regasification unit that warms LNG back to gas using seawater flowing over finned panels.

LNG Liquefaction, Shipping and Regasification Day by Day

Day 1: The LNG Chain and Its Market Forces

- LNG Value Chain Map — Where Cost and Losses Accumulate
- Supply Wave and Spot Trade — Pressure on Long-Term Pricing
- Feed Gas Composition Profiles — Consequences for Plant Design
- Methane Slip and Flaring Metrics — Emission Expectations of Investors
- Onshore Versus Floating Liquefaction — Concept Selection Trade-Offs

Day 2: Gas Pre-Treatment Ahead of the Cold Box

- Amine Acid Gas Removal Units — Carbon Dioxide Limits for Freezing
- Molecular Sieve Dehydration — Regeneration Cycle Scheduling
- Mercury Removal Beds — Protection of Aluminium Heat Exchangers
- Heavy Hydrocarbon Scrub Columns — Freeze-Out Risk Control
- Nitrogen Rejection Units — Heating Value and Fuel Balance

Day 3: Liquefaction Cycles and Refrigeration

- Propane Precooled Mixed Refrigerant Cycle — Efficiency Versus Complexity
- Cascade and Dual Mixed Refrigerant Cycles — Train Size Choices
- Expander Cycles for Small Scale Plants — Modular Deployment Cases
- Refrigerant Composition Tuning — Cooling Curve Matching
- Main Cryogenic Heat Exchanger Monitoring — Temperature Approach Limits

Day 4: Train Performance and Reliability

- Refrigerant Compressor and Gas Turbine Drivers — Availability Targets
- Train Throughput Benchmarking — Debottlenecking Candidates
- Fouling and Ambient Temperature Effects — Seasonal Capacity Loss
- Planned Shutdown Strategy — Turnaround Interval Decisions
- Specific Power Consumption Tracking — Energy Efficiency Indicators

Day 5: Storage Tanks and Boil-Off Gas

- Full Containment Tank Design — Spill and Heat Leak Protection
- Boil-Off Gas Compressors and Reliquefaction — Vapour Handling Choices
- Tank Stratification and Rollover Prevention — Density Monitoring Routines
- Cooldown and Warm-Up Procedures — Thermal Stress Control
- Inventory Ullage Planning — Production Versus Loading Balance

Day 6: Jetty Loading and Marine Interface

- Marine Loading Arms and Emergency Release Couplings — Transfer Integrity
- Ship-Shore Compatibility Studies — Berth Acceptance of Carriers
- Cargo Custody Transfer Measurement — Volume and Energy Settlement
- Vapour Return During Loading — Jetty Flare Minimisation
- Ship-Shore Safety Checklists — Pre-Transfer Readiness

Day 7: LNG Shipping and Logistics

- Membrane and Spherical Carrier Containment — Fleet Selection Factors
- Carrier Propulsion and Boil-Off Use — Voyage Fuel Economics
- Annual Delivery Programme Scheduling — Cargo Window Commitments
- Demurrage, Laytime and Heel Management — Voyage Cost Exposure
- Ship-to-Ship Transfer Operations — Flexible Delivery Options

Day 8: Regasification Terminals and Send-Out

- Open Rack and Submerged Combustion Vaporisers — Site Suitability
- Floating Storage and Regasification Units — Fast-Track Import Capacity
- Send-Out Flexibility and Peak Shaving — Grid Demand Response
- Gas Quality Adjustment and Nitrogen Ballasting — Pipeline Specification Fit
- Cold Energy Recovery Uses — Terminal Efficiency Gains

Day 9: Safety Hazards and Commercial Structures

- Cryogenic Spill and Rapid Phase Transition Hazards — Exclusion Zone Setting
- Vapour Cloud Dispersion and Pool Fire Modelling — Layout Decisions
- Sale and Purchase Agreement Clauses — Take-or-Pay and Flexibility Rights
- Free on Board and Delivered Ex-Ship Terms — Risk Transfer Point
- Oil-Indexed and Hub-Indexed Pricing Formulae — Revenue Exposure

Day 10: Practising the LNG Chain Reliability Dossier

- Pre-Treatment and Cold Box Constraint Review — Train Limit Diagnosis
- Boil-Off and Tank Inventory Balance — Loading Plan Under Outage
- Cargo Schedule Recovery Exercise — Delivery Programme Renegotiation
- Cryogenic Hazard Scenario Walk-Through — Emergency Response Roles
- LNG Chain Reliability Dossier Completion — Feed Gas to Send-Out View

Applying LNG Liquefaction, Shipping and Regasification After the Course

- Map one train's specific power consumption and throughput losses against its pre-treatment and compressor constraints.
- Rebuild the next quarter's cargo schedule with storage ullage and boil-off rates to test resilience to a train trip.

LNG Liquefaction, Shipping and Regasification Questions FAQ

What is LNG Liquefaction, Shipping and Regasification and why does it matter now?

It is the chain that turns pipeline gas into a cryogenic liquid, carries it by sea and returns it to gas for buyers. It matters now because new supply, flexible contracts and methane scrutiny reward plants and terminals that run reliably and deliver cargoes on time.

Which roles gain most from LNG Liquefaction, Shipping and Regasification?

Process engineers, operations supervisors, marine coordinators, commercial analysts and terminal staff gain most. You benefit if your decisions affect train throughput, tank inventory, carrier scheduling or send-out to a gas grid.

How does LNG Liquefaction, Shipping and Regasification differ from a general gas processing course?

It follows the gas beyond the processing plant. A general gas processing course stops at sales gas; this one adds refrigeration cycles, cryogenic storage, carrier logistics, regasification and the contract terms that link plant performance to cargo revenue.

What do you bring back from LNG Liquefaction, Shipping and Regasification?

You bring back an LNG chain reliability dossier. It links pre-treatment and train constraints, tank and boil-off balances, a recovered cargo schedule and a cryogenic hazard scenario into one view your plant and commercial colleagues can use.

LNG Liquefaction, Shipping and Regasification: The Way Forward

The LNG chain reliability dossier first informs how to protect cargo commitments when a train trips or a carrier is delayed. Plant managers, shipping coordinators and commercial leads use it to agree trade-offs between throughput, storage and delivery windows. After its first use, the perspective worth revisiting is how emission targets on boil-off and flaring reshape those same trade-offs.