Gas Monetisation and Flare Gas Recovery: Associated Gas Utilisation and Conversion Options

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Paris - Right Bank business hotel



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Introduction:

Gas monetisation decisions stall when associated gas is treated as a disposal problem: volumes are flared because no single outlet seems large enough, forecasts decline faster than a pipeline can be justified and the carbon cost of burning gas never enters the project screen. This Core Concept course equips gas, planning and new-business engineers to characterise flared and stranded gas, size flare gas recovery and reinjection, and compare gas-to-power, mini LNG, CNG trucking, GTL, methanol, ammonia and petrochemical outlets on value and emissions. Participants build an Associated Gas Monetisation Option Study for a case field.

Course Objectives:

- Characterise associated and stranded gas streams by rate, decline profile, pressure, composition and location, and trace the operational and commercial drivers behind each flare
- Specify flare gas recovery compressor packages, ejectors and reinjection or gas lift duties that return low-pressure gas to production
- Size gas-to-power, captive generation, mini LNG and CNG virtual pipeline schemes against the gas rate and the offtaker demand they must serve
- Evaluate gas-to-liquids, methanol, ammonia and petrochemical feedstock routes for gas volume thresholds, product logistics and technology readiness
- Rank monetisation options with screening economics, netback, breakeven gas value and Scope 1 emissions intensity on a common basis
- Assemble an Associated Gas Monetisation Option Study with a recommended outlet, phasing plan and routine flaring reduction pathway

Target Audience:

- Gas utilisation and facilities engineering staff who propose outlets for flared or surplus gas
- Field development and production planning staff who set gas handling capacity and reinjection strategy
- New-business and commercial development staff who screen downstream gas conversion ventures
- Flaring reduction and carbon management staff who account for flared volumes and emissions targets
- Reservoir and production engineering staff who assess reinjection, pressure maintenance and gas lift demand

Course Outline:

Day 1: Associated Gas Sources, Flaring Drivers and the Stranded Gas Baseline

- Associated Petroleum Gas Versus Non-Associated Gas: Solution Gas, Gas Cap and Casinghead Streams
- Economically Stranded Versus Physically Stranded Gas Classification
- Flaring Driver Tree: Routine Production, Safety, Start-Up, Maintenance and Off-Specification Flaring
- Flare Stream Profiling: Rate, Decline Curve, Pressure Tier and Wet Gas Composition
- Field Flare Inventory Template and Monetisation Opportunity Register

Day 2: Flare Gas Recovery, Reinjection and Gas Lift Architecture

- Flare Hierarchy: Avoid, Recover, Reuse, Convert and Flare as Last Resort
- Flare Gas Recovery Compressor Selection: Liquid Ring, Reciprocating, Screw and Ejector Packages
- Reinjection for Pressure Maintenance and Secondary Recovery: Injectivity and Compression Ratio
- Gas Lift Demand Matching and Fuel Gas Self-Use Balance
- Recovered Gas Routing: Fuel Header, Sales Line, Injection Manifold or Conversion Feed

Day 3: Gas-to-Power, Mini LNG and CNG Virtual Pipeline Outlets

- Captive Power From Reciprocating Engines, Gas Turbines and Microturbines: Fuel Quality Tolerance and Load Following
- Grid Export Versus Behind-the-Fence Supply to Nearby Industrial and Remote Consumers
- Small-Scale and Mini LNG Plant Train Sizing, Pre-Treatment Needs and Truck Loading Logistics
- CNG Trucking Virtual Pipeline: Compression to Storage Pressure, Tube Trailer Fleet and Decanting Stations
- Outlet Capacity Matching Against Declining Associated Gas Supply Curves

Day 4: Chemical Conversion Routes, Screening Economics and GHG Accounting

- Gas-to-Liquids Fischer-Tropsch Synthesis and Modular Small-Scale GTL Units
- Methanol, Ammonia and Urea Routes via Syngas Reforming: Minimum Feed Rates and Product Markets
- Ethane and NGL Offtake to Petrochemical Crackers and Feedstock Pricing Links
- Screening Economics: Capital Intensity, Netback, Breakeven Gas Value and Real Option Phasing
- GHG Accounting of Flaring Versus Monetisation: Combustion Efficiency, Scope 1 Emissions and Avoided Flaring Credit

Day 5: Modelling Build: Associated Gas Monetisation Option Study

- Case Field Data Pack: Flare Rate Forecast, Gas Analysis, Distance to Market and Power Demand
- Option Long List to Short List Using a Weighted Technical and Commercial Screening Matrix
- Netback and Emissions Intensity Model for Three Shortlisted Outlets
- Phased Routine Flaring Reduction Pathway With Milestones and Residual Flare Plan
- Associated Gas Monetisation Option Study Defence to a Peer Investment Panel

Skills You Will Gain:

- Flare Stream Characterisation
- Stranded Gas Classification
- Recovery Compressor Specification
- Captive Power Scheme Sizing
- Virtual Pipeline Logistics Planning
- Gas Conversion Route Screening
- Monetisation Netback Modelling
- Flaring Emissions Accounting

Why Attend This Course:

- Return with an Associated Gas Monetisation Option Study built on a case field data pack and challenged by peers
- Replace case-by-case flaring approvals with a ranked register of outlets that fit each gas rate and decline profile
- Show investment committees the value and the emissions avoided by each option on one consistent screening basis
- Compare flare reduction and gas utilisation practice with engineers from upstream, midstream, power and petrochemical ventures

Conclusion:

Flared gas is a resource waiting for a matched outlet. The one week move from associated and stranded gas classification and flaring drivers, through flare gas recovery, reinjection and gas lift, to captive power, mini LNG and CNG trucking, and then to GTL, methanol, ammonia and petrochemical conversion, screening economics and flaring emissions accounting. The final day brings these tools together in an Associated Gas Monetisation Option Study that recommends an outlet and a routine flaring reduction pathway for a case field.