

East Africa's new frontier gas province

LNG Investment Economics and Risk Evaluation



Focus on: **The Manager** ☐ **The Specialist** ☒ **Spotlight Programme** ☐ **Hands-on Skills** ☒

Course Overview

This intensive course builds practical capability to evaluate upstream gas and LNG opportunities in the East African Gas Province (Mozambique, Tanzania and adjacent basins). Delegates learn how to structure cash-flows, model fiscal regimes, and price gas through LNG and domestic market routes; then quantify risk and uncertainty to support investment decisions.

The course connects subsurface resources to market value by covering LNG chain economics (liquefaction, shipping, regas), gas sales agreements and netback pricing (JKM/TTF/Brent-linked), and East Africa-specific risks such as security, local content, domestic market obligations, and infrastructure constraints.

Course Objectives		This Course is Ideal For:	
1	Apply discounted cash-flow (DCF) and economic indicators (NPV, IRR, PI, Payback, EMV) to gas developments.	✓	Oil & Gas Managers and Planners working on East African gas/LNG projects
2	Model and evaluate different East African fiscal regimes (royalty, production sharing, cost recovery limits, state participation, corporate tax).	✓	Commercial, economics and new ventures professionals assessing upstream gas opportunities
3	Price gas via LNG (JKM/TTF or Brent-slope SPAs), tolling vs merchant models, and domestic gas/G2P netbacks.	✓	Reservoir, facilities and project engineers needing a commercial toolkit
4	Build a full-chain LNG netback model: upstream → liquefaction → shipping → regas; evaluate shipping distance and boil-off impacts.	✓	Bankers, auditors and advisors evaluating project finance and offtake risk
5	Quantify uncertainty using sensitivities, scenarios, decision trees and Monte Carlo simulation.	✓	Government/Regulator staff reviewing fiscal terms, PSAs and domestic gas policy
6	Evaluate bankability: project financing, offtake structures (take-or-pay), credit risk and currency convertibility.	✓	Project Management Professionals
7	Assess regional risks: security (Cabo Delgado), schedule, ESG/methane, local content, and community/social impacts.		
8	Develop investment recommendations and negotiation levers for fiscal and commercial terms.		



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Course Content

Day	Theme	Coverage
1	East African Gas Context & Cash-Flow Fundamentals	<ul style="list-style-type: none"> Regional overview: Mozambique & Tanzania basins, resource types and development concepts Gas value chain and reserves/resources (PRMS) Gas pricing building blocks and netbacks; Fiscal architecture primer (royalty, PSA, state participation) Set up base cash-flow (capex/opex, plateau, decline, abandonment) Inflation, real vs nominal, depreciation.
2	LNG & Domestic Market Economics	<ul style="list-style-type: none"> Liquefaction options (onshore LNG, FLNG, tolling) Shipping economics (voyage distance, boil-off, charter rates) Regas and market access Price indices and structures (JKM, TTF, Brent-linked S-curve, floors/ceilings) Domestic gas pricing & G2P monetisation Build an LNG chain netback and compare to domestic netback.
3	Fiscal & Commercial Structures in East Africa	<ul style="list-style-type: none"> Mozambique & Tanzania fiscal terms: royalties, cost-recovery limits, profit split, corporate tax, withholding, state participation (ENH/TPDC) Ring-fencing, loss carry-forward and incentives; Local content & domestic market obligations SPAs/GSAs, take-or-pay, destination flexibility, force majeure Project finance, lenders' tests, RBL/NPV10 coverage.
4	Risk Evaluation & Decision Analysis	<ul style="list-style-type: none"> Technical and execution risks, security and HSE/ESG considerations Scenario design (price, schedule, capex); Sensitivity analysis & tornado charts Expected Monetary Value (EMV), decision trees (farm-down, delay/accelerate) Monte Carlo simulation for price/volume/cost Determining break-even gas price and value drivers.
5	Capstone: Investment Case for an East African Gas Project	<ul style="list-style-type: none"> Group exercise: construct a full economic model for a representative offshore gas → LNG development Test fiscal variations and negotiating levers Compare LNG export vs domestic gas-to-power option Present an investment recommendation to an Investment Committee (go/no-go, conditions precedent, key risks & mitigations).



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Course Assessment	Certification
Participants will be assessed on:	Upon successful completion of the course, participants will receive a Certificate of Successful Completion , along with a Transcript of Marks showing the performance by grade in each element of assessment and overall.
Participation in sessions	
Completion of exercises & case studies	
Performance in assessments	
Course Instructor	
With BSc and PhD degrees from the UK, and with over 30 years of refinery technology, operations, and management expertise for several famous-name oil companies, this speaker is now an internationally-famous chemical engineering consultant. As a Chartered Chemist, a Member of the Royal Society of Chemistry and a Member of the American Institute of Chemical Engineers, he holds honorary appointments at a number of European universities and conducts cutting-edge research into vacuum distillation, gas recovery, absorption and pyrolysis.	

