



LNG Business Workshop

Program Objectives

During this 2.5 day program, participants learn the fundamentals of the LNG business from gas supply to markets, essentially the full LNG value chain. This includes the technology, operations, market, financing, legal agreements, and commercial transactions that impact the integration of gas supply, liquefaction, transportation, receiving terminals and end markets. The learning format is a combination of lectures, class discussion and a simulating LNG “business game.” The benefit of this course design is that they will learn the full extent of the LNG business in a challenging and interactive way that consistently leads to “outstanding program” comments by attendees.

Key Benefits

- Provides you with an introduction of the international gas industry and the key gas industry terms
- Summarizes the history of the LNG business as well as its historical context and the nature of the industry today
- Presents each element of the LNG value chain from upstream exploration and gas supply to marketing and sales in the destination country
- Covers the technology, design options and project economics of the three key sectors of the industry: liquefaction, shipping and receiving terminals
- Outlines the LNG market trends, present day pricing options and major terms of LNG purchase and sale contracts
- Demonstrates how LNG arbitrage occurs today with LNG spot cargoes that can be directed to any of the major markets
- Discusses the major management needs of an LNG facility in order to make it a viable and efficient operating entity.
- Practical learning is internalized by having teams of attendees participate in a challenging LNG business game

Who Should Attend

This program will benefit management, administration, and technical personnel who wish to broaden their knowledge of the business environment and “best practices” of the LNG business. Because of the workshop format, an enrollment level of 25-30 is recommended.

Instructional Format

This intensive program has a lecture/workshop format. Through an innovative workshop and simulation model, participants, working in teams, make the real-life technical and financial decisions that confront managers in the international LNG business today.

Program Location and Schedule

The 2.5 day program will begin at 7:30am with registration on the first day and end at noon on the third day. Typically the day will run from 8:00am until 5:00pm however, participants may be asked to stay later to do workshop sessions.



PROGRAM CONTENT

Introduction to the Gas Value Chain and Gas Industry Nomenclature

Explanation of the full gas value chain, discussion of the international gas market structure, introduction to key gas and gas processing terms (NG, NGL, LPG, CNG, Natural Gasoline)

LNG Value Chain and the Global LNG Business: From Supply to Receiving Terminal

Overview of the key elements of the LNG value chain, basic design and typical capital costs. History of the LNG business, where it started, how it expanded, developers, purchasers, how supply-demand has changed over time.

LNG Project Development Requirements and Cycle

LNG project alignment and integration of the full value chain; how projects are structured, key project requirements: legal, technology, finance, markets, construction, operations; how projects are initiated and carried to completion: how does it all get done; schedule and participating parties; underlying economics.

Overview of Gas Supply: Petroleum Exploration and Production

Source of gas supply for the LNG project; exploration and field development; surface gas handling and processing; planning the development of a field to satisfy a supply obligation; the value of gas liquids; host country agreements.

LNG Liquefaction Plants: Design Options, Technology, Development Schedule and Capital Costs

LNG plant design options; gas quality needs of customer; LNG technology providers and the nature of their proprietary processes; negotiating and implementing EPC contracts; estimating capital costs; building the LNG facility.

LNG Ships: Technology, Operating Fundamentals and Capital Costs, Ship Ownership Options

Standard LNG ship design; major manufacturing facilities; ship inventory and orderbook; construction cost and schedule; propulsion systems; recent orders for larger ships. Estimating ships required for an LNG project.

LNG Receiving Terminals: Design Options, Technology, Capital Costs, and Tariff Offered by Third Parties

Proprietary and third-party LNG receiving terminals; typical services offered by an LNG receiving terminal; capital and operating costs; typical tariffs charged by LNG terminal operators; key developers of terminals.

Current and Future LNG Market Trends

Historical growth of LNG trade; exporting and importing countries; future market trends: current developments and future market expectations; market drivers.

LNG Pricing: Historical and Present Day Pricing Options

Options for pricing LNG; historical pricing models; Base and indexing price options; liberalized market pricing; current pricing of LNG in Asia, Europe and North America in today's business.

LNG Business: LNG Sales and Purchase Contracts

Review of key terms of a long-term LNG contract; commercial terms; quality and measurements of LNG; delivery conditions FOB, CIF; port considerations; invoicing and payment; suspension; force majeure. The negotiation process. The nature of LNG spot sales and the benefits realized by both parties of the agreement.

LNG Business Management After Startup

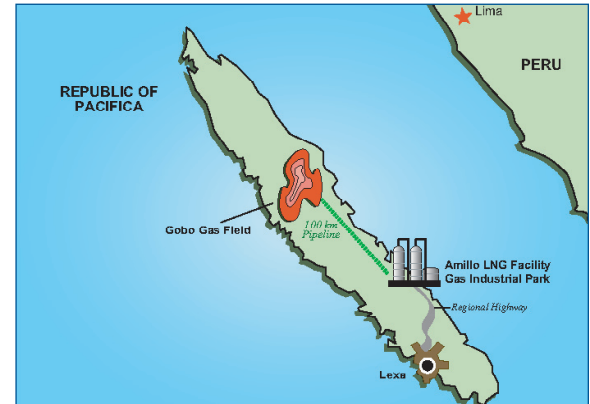
Organization and key functions of an LNG facility after startup. Operations and maintenance personnel; key management positions; HSE issues; supply, government and customer relationships.



WORKSHOP

Pacifica: The LNG Business Game*

Your company has just made a major gas discovery in the Republic of Pacifica, an island republic off the coast of Peru, and your team has been assigned the challenging job of commercializing it. You have been told that the most compelling markets for the gas are in North and South America and Asia, specifically Japan, Mexico, Chile and the US. This means that you must build an LNG facility and organize to transport and deliver the LNG to your international clients. In the process you must consider all aspects of the project including commercial, technical, legal, project management, government affairs, partner relationships and financing. Your team will compete with other teams during the sessions to achieve the most attractive project and you will make a presentation of your decisions and overall performance at the end of the program.



- Workshop Orientation
- Upstream Decisions & Joint Venture Agreement
- Liquefaction Facility Design
- LNG Shipping Options
- Receiving Terminal Options
- Market Analysis and Final Integrated Decisions
- Evaluation of Performance and Presentation of Results

INSTRUCTORS

There will be one lead instructor, Jack King and one Business Game Specialist, Maher Habbal devoted to this program. Their backgrounds are as follows:



John B. (Jack) King, is an expert in the international natural gas industry, both in pipeline natural gas and LNG, with over 26 years experience in Mobil and ExxonMobil Corporations. Jack began his career as a production engineer in the Gulf of Mexico. He then progressed through a number of senior executive natural gas marketing positions for both Mobil and ExxonMobil affiliates in the United States, Indonesia, Qatar, Peru, Venezuela, Japan and Russia. From Indonesia, he participated in successful long-term LNG sales contract negotiations with gas consumers in Japan, South Korea and Taiwan. In Qatar, he was instrumental in leading the successful LNG sales negotiations to kick-off the RasGas LNG project with Korea Gas Corporation, as well as lead Mobil's efforts in contract negotiations with Japanese buyers in the QatarGas project. He was instrumental in initiating LNG sales contract negotiations with LNG consumers in Thailand, Turkey, Taiwan, India and Italy. He led both Mobil Corporation's efforts in the Camisea gas project in Peru and ExxonMobil's participation in the Venezuela LNG project. As Project Executive for the Sakhalin-1 project, he concluded a successful feasibility study to bring pipeline natural gas from ExxonMobil's Sakhalin-I project, in Russia, to Japanese utilities and concluded a successful long-term agreement to bring pipeline natural gas to China from the Sakhalin-I project. Jack received a B.S. in General Engineering and Military Art from the United States Military Academy at West Point, New York, and earned a Masters in Business Administration from Tulane University.



Maher Habbal is Manager, Business Simulators Development/Applications for IHRDC. He is responsible for developing and implementing the business simulation models used in IHRDC management programs and workshops. To date he has built five such simulators: one for the oil industry, two for the gas, and two for power. His other responsibilities include internal financial reporting, analysis and forecasting. Before joining IHRDC, Mr. Habbal worked three years with Arthur D. Little, Inc. as a Senior Financial Analyst on financial reporting and modeling. Also, as a member of the teaching staff at the Arthur D. Little School of Management Master of Science in Management Program, he taught Finance, Economics and Accounting. Mr. Habbal holds a Master of Science Degree in Management from Arthur D. Little School of Management and a B.S. in Business Economics from the Lebanese American University.