International Gas Business Management Certificate Program

Through a careful balance of lectures by leading experts and challenging workshop sessions, this two-week program provides a comprehensive working knowledge of the technology, economics, finance, and markets that shape and affect the international gas industry today. It also teaches the management skills needed to develop projects and increase performance within a integrated gas business environment.

UNIT ONE
UPSTREAM GAS BUSINESS

Overview of the International Gas Industry
Gas measurements and units, the gas chain, market structures, worldwide natural gas economics, major players, evolution of the integrated gas-power business.

Host Government Agreements
Typical host country exploration agreements: summary of the history and key provisions, including bonus payments, royalties, taxes, production sharing, participation arrangements.

Exploration Methods
The exploration process: petroleum geology, exploration geophysics, well logging, developing exploration prospects, preparing and interpreting geological maps; case studies.

Drilling and Well Completions
Planning the well, logistic, drilling functions, drilling procedures, formation evaluation methods, horizontal wells, improvements in drilling.

Energy Project Economics
Economic viability, project cash flow before and after tax, tax expenses and benefits, net cash flow stream and payout; time value of money; discounted cash flow analysis and internal rate of return, risk assessment and sensitivity analysis.

Unconventional Gas Resources
A comprehensive and practical understanding of the processes that are applied in the development of unconventional gas projects, by looking at an active investment since the Marcellus shale project in the United States.

Gas Field Performance and Reserves Estimation
Overview of production and reservoir management in the gas system, production technology, well testing, reservoir performance; reserves estimation.

Gas Processing: Technology, Economics, LNG, and Ethylene Markets
Overview of gas processing systems, liquid separation processes, LNG fractionation options, compression, engineering design and contracting methods, the market for LPGs, project feasibility and economics, ethylene processing, economics, and markets.

Gas Pipeline Systems
Major considerations in the cost-effective design, construction, and operation of gas pipeline systems, system design variables impact on cost and capacity, estimating project costs; pipeline load factors, typical pipeline tariff, examples of recent pipeline construction costs.

Load Balancing Systems and Tariffs
Needs for load balancing and system and customer benefits; storage options, capital and operating costs: underground, cavern, and LNG facilities; operational procedures; new options for marketing storage services; case examples.

Gas Sales Contracts
Typical terms in gas sales contracts, price-volume, risk allocation, form gas contracts to tariffs, indexing; re-negotiable, typical contract examples.

Measuring Financial Performance
Review of financial statements: income statements, balance sheets, cash flow, and shareholders equity; capital and operating costs, measurements of financial performance; benchmarking, taxation, the accounting and audit process.

Gas Market Analysis and Pricing
The need to identify market gas markets easily, gas market analysis, methods pricing and interfuel competition; market segments and market opportunities.

Gas-Fired Power Plants
Overview of combined-cycle gas turbine power systems: technology, plant design, heat efficiency, available packages, project feasibility; capital costs, economics, risk, financing, contracts, markets, capital and operating cost estimating, contracting for fuel supply and power sales, worldwide power trends, examples of recent and planned projects.

Overview of LNG Business
Overview of the role of LNG within the gas chain, technology: LNG plants, liquefaction, ship design and operations, LNG re-gasification units; LNG project feasibility: capital costs, economics, risk, financing, markets; LNG plant design: gas reserves to support a plant, contract prices, contracting, examples of recently completed and planned projects.

Petroleum Uses for Natural Gas: Methanol, Ammonia, and Gas-to-Liquids Conversion
Use of gas for ammonia and methanol and conversion to liquid fuels; processes for conversion of gas to methanol; markets and project economics; ammonia and fertilizers: source of supply, types of processes, intermediate and end products, markets, project economics; examples of recent and planned projects; gas-to-liquids conversion: available technology; major players, capital and operating costs, economic analysis.

Gas Distribution
Overview of the gas distribution system; types of customers and load factors; competition from other fuels; sources of gas supply: gas supply contracts, prices, character of gas supply; structure and regulation of local distribution companies (LDCs); marketing demands; design and construction of distribution systems; expansion; operations; load balancing; distribution planning, maintenance; environmental considerations, rate-making policies and practices.

Project Financing: Commercial Debt Structuring and Case Study
Corporate and project financing: sources of debt and equity financing; public and private sources of capital; multilateral and bilateral sources of financing; risk assessment and mitigation; structuring of financing; preparing the financing plan, negotiating the term sheet; preparing the financing documents; closing; Case studies – examples of project financing: Qatar Gas Project, Columbia Power Projects, U.S. Gas Storage Project.

Industry Regulation, Deregulation, and Convergence
The nature of regulation in the energy sector, history and current state of the gas industry; deregulation process at the wholesale and retail markets; U.S., Europe, and elsewhere; effect of deregulation on the structure of the industry; convergence of gas and power.

Marketing Natural Gas in an ‘Open Access’ Environment
U.S. market structure; basic deal types and structure and regulation of local distribution companies (LDCs), marketing demands; design and construction of distribution systems; expansion; operations; load balancing; distribution planning, maintenance; environmental considerations, rate-making policies and practices.

DOWNSTREAM GAS BUSINESS

Colombia Power Project; U.S. Gas Storage Project; U.S. and Expetra, and export-focused ammonia, liquefied natural gas (LNG) plants, gas pipeline to Miami, gas distribution and storage operations in the U.S. power plants in the U.S. and Expetra, and export-focused ammonia, methanol, and gas-to-liquid plants in Expetra.

WHO SHOULD ATTEND
This program is intended for specialists in one or more functional areas of the international energy industry who seek a comprehensive understanding of the gas industry. Many participants have said this is the best program in the industry today, due to its broad scope, challenge, realism, and fun.

INSTRUCTORS
David A. T. Donohue, PhD, JD
Ethan Aslan, PhD
Charles Blankman, PhD
Y. Sardar Dogulu, PhD
Bradford R. Donohue, MBA, CFA
Marshall E. Frank, MS
Samy H. Ibrahim, MS
John B. (Jack) NBA
Kris Ramanathan, PhD
Robert V. Taylor, HS
Laura Vavala, MS Eng

PROGRAM FEE
ONE UNIT: US$ 4,750
TWO UNITS: US$ 8,700

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ATLANTIC BASIN GAS BUSINESS GAME: EXPETRA

This business game is an integral part of the learning process. Participants, divided into teams, make real-life technical, financial, and market decisions that commonly confront managers in the international gas business today. Team performance is measured on a financial basis and is calibrated by healthy competition.

The challenging Atlantic Basin business game takes place in “Expetra,” a small island country in the Caribbean, north of Trinidad. Gas and condensates are expected to be discovered in the deep offshore. Teams enter into exploration agreements, explore for and discover hydrocarbon resources, and then decide on the best way to market them over a 15-year production period. Markets include LNG exports to the U.S. and Europe, LNG and ethylene plants, gas pipeline to Miami, gas distribution and storage operations in the U.S. power plants in the U.S. and Expetra, and export-focused ammonia, methanol, and gas-to-liquid plants in Expetra.

WORKSHOP SESSIONS INCLUDE:

Introduction to the exploration opportunity
Negotiation of the exploration and development agreements
Sporic exploration and mapping of seismic results
Exploration drilling and reservoir characterization
Gas processing, LNG, and ethylene market decisions
Gas field pipeline decisions
Integrating load balancing and pipeline facilities
Gas-fired power plant market decisions
Acquiring a gas distribution business in the U.S.
Assessing of methanol, ammonia, and ethylene market decisions
Expert pipeline from Expetra to Miami
Assessing two LNG market opportunities
Integrated field development and market decisions
Decisions during the project lifecycle