Commercial Awareness of the Oil and Gas Value Chain: A Challenging Simulation Program

March 18–22, 2018
DUBAI, UAE
Daily Schedule: 7:30 AM - 4:00 PM

Key Benefits

- Provides a thorough grounding in the oil and gas value chain including such topics as petroleum exploration agreements, exploration methods, drilling, field development, production, reservoir engineering and enhanced recovery, pipeline transmission, refinery and petrochemical operations, and the marketing of crude oil and its products.

- Develops key financial skills, including project investment analysis, and measures of project performance.

- Integrates the use of these technical and financial tools through team decision-making in a simulated competitive environment.

- Encourages participants, working in teams, to apply classroom knowledge to learn the practical aspects of the oil and gas business.

Who Should Attend

This program will benefit management, administrative and technical personnel who seek to broaden their knowledge of the international petroleum business.

Program Objectives

This simulation program is designed for individuals from many different backgrounds within the international petroleum industry, including lawyers, technical specialists, accountants, HR, IT specialists, marketing, and others, who seek a broad understanding of the international petroleum industry. This unique program combines a challenging simulation workshop with mentor guidance lectures. During the lectures, participants learn about a specific area of the petroleum business from recognized experts. During the workshop sessions, participants, working in teams, make the real-life technical and financial decisions for each sector of the petroleum business. The workshop focuses on developing essential technical, financial and business knowledge of all sectors of the international petroleum value chain, with additional emphasis placed on effective teamwork, decision-making abilities, and presentation skills. This careful balance of mentor guidance and workshop is an ideal way for participants to acquire the management skills and business knowledge needed for today’s industry manager.

Sandland: International Petroleum Business Simulation

Participants, divided into teams, compete with each other in the development of an integrated oil company in Sandland, a fictitious country on the west coast of Africa. Teams explore for and develop oil and gas reserves and then decide on the optimal way to develop and market the production. In each session, the teams are given background information on the technical and economic aspects of the decision to be made during each session. They then make decisions that require the commitment of both capital and operating funds.

The business simulation takes place over a 20-year period and individual teams are evaluated on their financial performance during this period. Decisions are made during 3 years of exploration, 2 years of development, and 15 years of production.
SESSION 1: Introduction to the Sandland Workshop
Mentor Guidance: Overview of the Energy Industry
Assignment: Review the project background, prepare an opportunity statement, and discuss the potential value proposition.

SESSION 2: Review of Exploration Agreement and Financial Model
Mentor Guidance: Host Government Agreements; Energy Project Economics
Assignment: Analyze terms of the Exploration Agreement and use the financial model to evaluate project value drivers.

SESSION 3: Purchase and Interpretation of Seismic Surveys
Mentor Guidance: Exploration Methods
Assignment: Evaluate seismic program alternatives, running the seismic program and generate subsurface maps.

SESSION 4: Exploration and Delineation Drilling and Reserve Estimation
Mentor Guidance: Drilling and Well Completions; Reservoir Characterization and Resource Estimation
Assignment: Identify exploration well locations, select formation evaluation alternatives. Run an appraisal well program to fully quantify the extent of the reservoir, estimate the resources, and establish commercial viability.

SESSION 5: Field Development and Reservoir Management
Mentor Guidance: Field Development: Reservoir and Well Performance
Assignment: Evaluate different field development options and select the best alternative (field production capacity and well count).

SESSION 6: Gas Processing and Marketing of LPGs
Mentor Guidance: Gas Processing and Marketing of LPGs
Assignment: Analyze gas processing alternatives and decide if you want to build a gas processing facility.

SESSION 7: Crude Oil Marketing and Refining
Mentor Guidance: Marketing Crude Oil and Products; Crude Oil Transportation; Refining and Petrochemicals; Products Distribution
Assignment: Analyze crude oil marketing options and analyze the economic attractiveness of the available crude markets.

SESSION 8: Markets for Associated Natural Gas
Mentor Guidance: Natural Gas Markets and Pricing; Gas and LNG Transportation
Assignment: Study the project economics of building power plants, petrochemical complexes and export pipeline alternatives. Prepare a preferred gas market plan.

SESSION 9: Integrated Development Decision
Mentor Guidance: Integration of Field Production with Market Needs
Assignment: Select markets to be developed, plan the development of the field to meet marketing plan and schedule construction according to available capital.

SESSION 10: Production Maintenance Decision
Mentor Guidance: Long-term Asset Management including Enhanced Recovery
Assignment: Evaluate field and market performance and make decisions to maintain or enhance performance.

SESSION 11: Review and Presentation of Overall Results
Mentor Guidance: Measuring Financial Performance
Assignment: Review 20-year financial performance history. Prepare and present your decisions, overall results, and learnings to management.

“One of the best courses I have learned from with its rich materials and excellent presenters.”
– August 2015 Participant
Session 1: Overview of the Energy Industry
Oil and gas measurements and units; the value chains; market structures; worldwide oil and gas reserves, production, consumption, trade and prices; major players; evolution of the integrated oil and gas business.

Session 2: Host Government Agreements
Typical host country exploration agreements: history and key provisions, including bonus payments, royalties, taxes; production sharing; participation arrangements.

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

Session 3: Exploration Methods
The exploration process: petroleum geology, exploration geophysics, well logging, developing exploration prospects, seismic surveys, preparing and interpreting geological maps; case studies.

Session 4: Drilling and Well Completions
Planning the well; logistics; drilling functions; drilling procedures; formation evaluation methods; horizontal wells; improvements in drilling.

Reservoir Characterization and Reserves Estimation
Reservoir fundamentals and reserves estimation. Deterministic and stochastic methods, SPE definitions.

Session 5: Field Development: Reservoir and Well Performance
Field development; inflow performance; integrated reservoir management; and enhanced recovery. Surface facilities design: design for both onshore and offshore operations; production operations and management; investment analysis and reporting of performance. Case studies.

Session 6: Gas Processing and Marketing of LPGs
Properties of gas and gas liquids; phase behavior and formation of associated gas; processing of associated gas; markets for LPGs; economics of natural gas plants.

“Very helpful and useful to understand the oil and gas value chain using lectures and simulation program.”
– August 2015 Participant

Session 7: Marketing of Crude Oil and Products
Development of the free market for oil; current international market structure; regional markets: physicals, futures, forwards, derivatives, roles of participants, price formation, price volatility; price reporting; crude oil and product pricing; negotiating and pricing petroleum sales contracts.

Crude Oil Transportation
The tanker industry and market trends: an overview of the main characteristics of crude tankers; capital and operating costs; calculating tanker transportation rates; Crude oil pipelines; design, construction and operation of pipeline systems; Major pipelines in operation and new pipeline developments.

Refining, Petrochemicals, and Product Markets
Crude oil and refined products; Refinery design options; refinery complexity; capital and operating costs; Refinery margins; profitability; netback estimation and recent trends. Petrochemicals in perspective: links to refining; key product families; industry drivers: cost of production, supply/demand; profitability and price forecasting; prospects for the future: maturity, environmental concerns, global competition; product markets.

Session 8: Natural Gas Markets and Pricing
Gas distribution; regulation and deregulation; markets for gas, including residential, commercial, industrial, combined-cycle power plants, ammonia, methanol and gas-to-liquids.

Gas and LNG Transportation
Gas pipelines and LNG transportation. Major gas pipelines of the world; Gas pipeline design; capital costs and tariffs; open access systems; LNG tankers design; capital cost and voyage charges.

Session 9: Integration of Field Development with Market Needs
Session 10: Long-Term Asset Management Including Enhanced Recovery
Facilities Commissioning; Data Acquisition; Reservoir Management; Manpower Planning and Development; HSE Management.

Optional Lectures (Depending on Available Time):
Measuring Financial Performance
Review of financial statement: income statement, balance sheet, cash flow and shareholders equity; capital and operating costs; measurements of financial performance; benchmarking; utility accounting methods; taxation; the accounting and audit process.

Unconventional Resources
Definition of Unconventional Resources: Shale Gas/Oil; Role of Technology, Field Development Techniques and Economics.
Dr. Charles Brankman, Director of Instructional Programs with IHRDC, is a professional geologist and project developer who has been actively involved in a range of activities in the energy business, including E&P, engineering geologic consulting for the gas transmission and power generation sectors, and CO₂ enhanced oil recovery. After receiving a B.S. in geological engineering from Princeton University, Dr. Brankman earned an M.S. in structural geology from Stanford University. During his studies, he spent time at Mobil Oil Company in exploration and reservoir characterization. After Stanford, he worked in northern California as an engineering geologist on projects related to the siting of gas pipelines and power plants. He then pursued a Ph.D. in structural geology and earth resources at Harvard University, during which he taught several undergraduate courses and received several teaching awards. After receiving his degree from Harvard, he cofounded and served as Vice President of Geosciences at C12 Energy, a company focused on CO₂ oil recovery projects using anthropogenic CO₂.

Dr. Erhan Aslan is a Learning Simulator Specialist and Program Facilitator at IHRDC. Dr. Aslan began his career in Abu Dhabi as a reservoir engineer at Kelkar and Associates and was involved in multiple projects on reservoir development and characterization for fields in the Middle East and Russia. In 2006, he relocated to Tulsa, Oklahoma for his M.S. in Upscaling of Tight Gas Reservoirs within the Petroleum and Natural Gas Engineering department at the University of Tulsa. He then attended Pennsylvania State University, graduating in August 2013 with a Ph.D. in Petroleum and Natural Gas Engineering. His thesis was entitled Development of an Advanced Coalbed Methane (CBM) Numerical Reservoir Simulator. During his studies at Penn State and the University of Tulsa, he taught classes on Drilling Fluids, Production Engineering, Well Testing and Evaluation, Numerical Reservoir Simulations, and Rock and Fluid Properties for graduate and undergraduate students. He received the Outstanding Graduate Assistant Award from Penn State in April 2013. Currently, he is working on the development of Interactive Learning Simulators at IHRDC. His areas of interest include reservoir characterization, development of numerical reservoir simulators, unconventional gas reservoirs, parallel programming, and static and dynamic reservoir simulation modeling.

IHRDC PROGRAM ENROLLMENT

The program will begin on Sunday morning with registration at 7:30am and end on Thursday mid-day. Hotel details will be provided upon registration. IHRDC reserves the right to cancel any course due to insufficient enrollments to ensure effective sessions.

Enrollment Fee:  US $3,750 +VAT charges only where applicable.*

*IHRDC will provide a discount to companies who enroll five or more participants.

PLEASE ENROLL ME IN:
COMMERCIAL AWARENESS OF THE OIL AND GAS VALUE CHAIN
☐ MARCH 18–22, 2018 (DUBAI)

Name

Title/Position

Company

Address

City/State Country

Telephone Fax

E-mail

Enrollment Code: WEB18 Please use the Enrollment Code above when enrolling to this workshop.

PAYMENT METHOD
☐ Fee Enclosed
☐ Please Invoice  Send to the attention of:

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Signature of Cardholder

TO REGISTER PLEASE CONTACT IHRDC AT REGISTRAR@IHRDC.COM
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