

Petrochemicals, Refining and Gas Processing: Industry Fundamentals & Integration Benefits

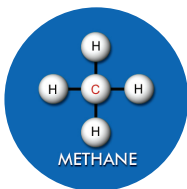
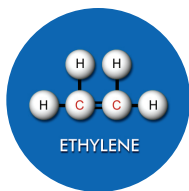
Program Objectives

This program provides a comprehensive overview of today's international gas processing, refining and petrochemicals business. Recognized instructors will examine the integrated technical, economic, business and market factors that shape these important downstream sectors of the international industry today, especially their integration, and the management skills needed to operate effectively within the industry. A challenging integrated gas liquids-refining-petrochemical "business game" will be used to stimulate and enhance the total learning process.

Key Benefits

Upon completing this program you will understand:

- How the gas processing, refining and petrochemical industry evolved and the importance of the seven basic petrochemical building blocks,
- The refining and petrochemicals production processes and value chains: ethylene, olefins, aromatics and derivatives,
- Feedstock assessment and technology selection processes,
- Industry structure, integration and linkages,
- The nature of petrochemical markets, market cycles and market assessment,
- How to identify new project opportunities and commercialize new projects,
- The benefits of integrating gas liquids, refining and petrochemical complexes, and
- Key players and industry trends.



Instructional Format

The instructional format consists of a careful balance of lectures by experienced experts and a practical "business game" workshop. In the workshop, participants, working in teams, make actual technical and financial decisions as they evaluate various options to develop an integrated petrochemical business in the fictitious Republic of Singnam, located within the rapidly growing markets of Southeast Asia. The IHRDC petrochemical business simulator allows teams to monitor and review 20 years of "real-life" decisions. This careful balance of lectures and workshops is an ideal way for participants to acquire the management skills and business knowledge needed by today's petroleum industry manager.

Who Should Attend

This program is ideal for those individuals who seek an integrated understanding of the international gas liquids-refining-petrochemical business. This could include managers, planners, government personnel and other specialists who work within the industry, those who interface with the industry, and those who work in other areas of the oil and gas industry who wish to learn about this segment of the value chain.

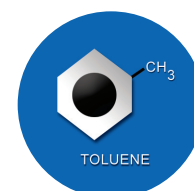
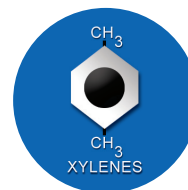
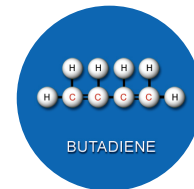
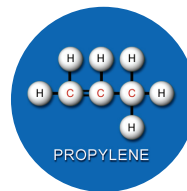
Program Location and Schedule

This ideal program schedule would be to begin on Monday morning at 8:00AM and end Friday noon. Participants may be asked to stay later on some of the first few evenings to complete workshop sessions.

PROGRAM CONTENT

The program will include the following lecture sessions:

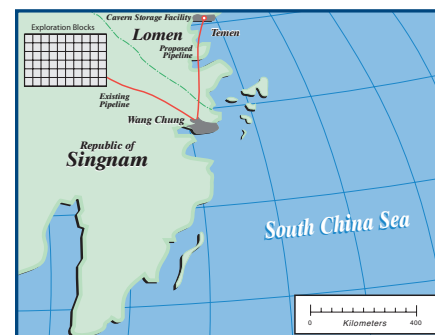
- Oil & Gas Value Chains
- Petrochemical Industry Overview: Characteristics, Feedstocks and Pricing
- Gas Processing: Technology, NGLs Recovery and LPG Markets
- Refining Industry Fundamentals
- Ethylene: Petrochemical Building Block, Ethylene Derivatives
- Olefins and Derivatives, Including Polypropylene
- Petrochemicals from Natural Gas: Methanol, Ammonia, Urea
- Gas to Liquids Technology: Integration with Refinery and Petrochemicals
- Aromatics and Derivatives
- Refining and Petrochemical Industry Environmental Issues and International Competitiveness
- Energy Project Investment Analysis
- Refinery/Petrochemical Integration Options



WORKSHOP

Petrochemicals Business Game

The Workshop setting is the Republic of Singnam, a country on the South China Sea, where a significant resource of natural gas containing natural gas liquids has been discovered by your E&P affiliate. Another affiliate operates an existing refinery producing leaded gasoline and 0.2 wt.% sulfur diesel fuel for transportation uses. The discovery of these natural gas resources offers the opportunity for not only the establishment of a major integrated petrochemical industry but also for upgrading the refinery's two major transportation products up to world environmental standards. One of your major considerations is the fact that the new democratic government would like to exploit its potential resources to reduce imports, earn foreign currency through exports and increase employment opportunities for its citizens.



Participants will be divided into teams and compete with each other to build a high performance natural gas-based petrochemical company. In order to provide rapid feedback on each team's ongoing performance, IHRDC has developed the International Petrochemical Business Simulator, which allows teams to make ongoing decisions and simulate many years of performance in a short time. This classic IHRDC business game and workshop consistently earns very high praise from participants for its realism, stimulation of learning process, and the benefits of working in teams with delegates from many other countries.

The sessions include:

- Introduction to Activities and Goals
- Building Gas Processing Facilities
- Recovery of Petrochemical Feedstocks; LPG Marketing
- Natural Gas to Ammonia & Urea Production for Domestic Use and Export
- Ethane Cracker for Polyethylene
- Polypropylene via the Dehydrogenation of Propane to Propylene
- Hydrogen By-product for Refinery Hydrotreating
- Export-oriented Methanol Project
- Methanol to Olefins for Polyethylene and Polypropylene Production
- Gas-to-Liquids (GTL) for Diesel and Petrochemical Naphtha Production
- Integrated Naphtha Cracker
- Octane Enhancement Projects: MTBE and/or Alkylate Production
- Review of Results and Prepare Team Presentations
- Presentations of Team's Decisions and Performance Results

INSTRUCTORS

For this program there will be a senior lecturer (Marshall Frank). He will be assisted by Maher Habbal, an IHRDC Modeling Specialist who will direct the simulator sessions of the workshop. Their backgrounds are as follows:

Marshall Frank retired in September 2000 from Chem Systems, where he was President and Managing Director, responsible for international consulting activities in North and South America and Asia Pacific. During his more than thirty years with the company, he had technical and administrative responsibility for a large number of multidisciplinary projects, both single-client and multi-client sponsored. Mr. Frank's areas of expertise include natural gas utilization and conversion, the petrochemical industry, the refining/petrochemical interface and alternative fuels. He also directed Chem Systems' Financial Practice, which provided assistance to lenders in assessing the various risks associated with the financing of major international energy, petrochemical and polymer projects. Prior to joining Chem Systems, Mr. Frank was involved in process evaluation, process engineering and startup of many of Halcon/SD's proprietary processes at Scientific Design Company. Mr. Frank received a B.S. degree in Chemical Engineering from Cornell 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.

