

NEW ERA IN OIL, GAS & POWER VALUE CREATION

A Capacity Building Program
for Managing Change



University of Houston
The C.T. Bauer College of Business
Energy Institute



Houston, Texas USA



NEW ERA IN OIL, GAS & POWER VALUE CREATION

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May 14-25, 2001

Energy Institute, The C.T. Bauer College of Business
University of Houston—Houston, Texas

An Invitation...

We invite you to participate in an annual two-week program that targets oil, gas and power commercial development. The Energy Institute at the University of Houston's Bauer College of Business (BCB) is the host institution for this innovative capacity-building program, together with the University of Houston Law Center. The U.S. Department of Energy and other agencies and international organizations as well as leading multinational energy companies support the program.

Background

Changing dynamics of oil, gas and power markets and market principles underscore the need for advanced dialogue on commercial practices and energy sector reform to optimize the energy value-chain businesses.

- ✓ The rise of natural gas poses complexities from field production downstream to electric power conversion.
- ✓ Volatility in energy commodity prices poses new risks for project development.
- ✓ Project financing has evolved to include an array of private market options.
- ✓ Environmental considerations affect not only individual projects but energy fuels markets as well.
- ✓ Local and community concerns increase as infrastructure expands to meet both domestic needs and commodity export opportunities.

All of these issues are unfolding within the context of “disruptive technologies”—“hard” technologies for both energy supply and demand and “soft” ones like electronic commerce—that will fundamentally alter energy markets and industry structure and organization.

Strong managerial skills are required for both project developers and host governments. “Foresight” is needed to both design and implement strategic policy reforms that enhance private investment and value optimization from oil and gas resources. New Era is designed to hone skills, provide a forum for sharing experiences and a basis for addressing specific problems associated with energy sector reform and value creation.

Who Should Participate

The New Era program is especially valuable for mid-level to senior managers of government ministries, regulatory commissions, national energy companies and private energy and energy-related enterprises from non-OECD countries. Professionals with increasing levels of responsibility in their home government or business organizations will gain most from the program. A limited number of places for participants from OECD markets will be available. The New Era program is designed to complement other compatible education programs including in-country capacity-building efforts. For a more intimate learning environment, total enrollment is restricted to 45 participants. Participants will be selected on the basis of credentials, experience and need in their home markets. The principal language for the course is English. Participants should already have knowledge of and experience with economic and finance principles and be fully aware of global trends and market reforms.

Program Scope

New Era emphasizes energy sector restructuring and investment strategies within the context of commercial development of oil and gas resources and the associated value chains (oil production, transportation, refining and marketing; natural gas production, transportation, distribution and gas-fired electric power generation). The underlying theme for the program is development of policy and regulatory frameworks and investment approaches that are compatible with the dominant features of the commercial oil, gas and power value chains.

Major Features of the Program include the following...

- ✓ **Importance of context.** Facilitated global scan to build world energy outlooks and macroeconomic considerations for private investment and commercialization, and a country dialogue on the role of government and markets, including economic reforms, technology change and adaptation.
- ✓ **Emphasis on the “globalizing” energy value chain.** Commercial value chain segments and linkages that must be addressed in legal, regulatory and financial policies and practices. Distinctions between international and regional export businesses (such as crude oil, petroleum product and LNG movements) as compared to regional gas transportation and gas-to-power conversion for value attainment. Global capital movements and their impact on national and sub-national policies and investment patterns.
- ✓ **Emphasis on “commercial frameworks” and the integration of business and law.** Building legal, regulatory, fiscal frame works to support commercial energy value chain investment and development. Includes innovations in upstream arrangements for private participation; contractual distinctions for natural gas resource exploitation; oil and gas pipeline transportation issues; refining economics and investment; specific considerations for integrated, field-to-electric power natural gas projects; and implications for midstream and downstream oil and gas value creation from upstream resource ownership models.
- ✓ **Focus on implementation.** The program uses a logical process flow from initial development of strategic policy approaches through development of commercial frameworks, investment negotiation, implementation and operational issues including environmental and social considerations, dispute resolution and conflict management.
- ✓ **International Colloquium on Energy Sector Reform.** Closing, one-day summary session with invited keynote speakers and special guests.

Program Format

Overall, the program emphasizes a “hands on” approach with practical applications and skills development. A number of specific approaches will be used.

- ✓ **Virtual countries and company:** Two composite country cases (non-OECD and OECD) and our “Energy Inc.” business simulation form the platforms for participant activities and interaction.
- ✓ **Experience sharing:** Actual country and industry case studies and group discussions targeted to specific project and policy development issues. Our Houston location provides unique opportunities for site visits to fully explore and combine technical, business and policy concepts.
- ✓ **Group discussions:** Informal idea exchanges on topics identified by program participants and on case studies.
- ✓ **Group projects:** Structured participant teams will undertake specific project assignments and exercises to improve skills in negotiation, strategic planning and implementation of policy initiatives and project evaluation.
- ✓ **Internet support:** A virtual environment is available to program participants for pre-program preparation and post-program follow-up and continued learning and networking. To access the Internet environment proceed to **www.uh.edu/energyinstitute**, New Era for Oil, Gas & Power Value Creation page. Follow instructions for login/password access.

NEW ERA IN OIL, GAS & POWER VALUE CREATION

PROGRAM SCHEDULE

Saturday, May 12—Friday, May 18

SATURDAY, MAY 12 & SUNDAY, MAY 13

Participant Arrival & Check In.

SUNDAY, MAY 13, EVENING

Welcome Reception for Course Participants.

TUESDAY, MAY 15 (*Continued*)

- ✓ Evaluation and discussion—link forward to goals, priorities for virtual countries, policy and regulatory considerations for value chain realization.

Free Evening

MONDAY, MAY 14

- ✓ General introductions and program overview
 - ✓ Introduce program context—virtual country composites and Energy Inc.
 - ✓ Facilitated “global scan” to address world energy trends with “country dialogue” on markets and policy issues (privatization trends; ideological, social, cultural perspectives on energy sector development; experience sharing among participants)
- Key topics
- Broad trends—general evolution toward markets, implications for energy, role of private sector in energy development
 - Globalization
 - Energy commodity business cycles, future supply/demand/price assumptions, energy security and related geopolitical issues
 - Summary and implications for virtual countries and Energy Inc.

Dinner/Evening Activity—Establish Participant Goals & Expectations for New Era

WEDNESDAY, MAY 16

- ✓ Establish goals, priorities for virtual countries and Energy Inc. with respect to energy development and investment within context of global scan results
 - Facilitated country dialogue regarding foreign investment, profit opportunities and national priorities, including energy sector restructuring (privatization design and implementation, market liberalization), investment attraction and retention, “leapfrogging” traditional development paths, country case studies/lessons learned to illustrate different energy market developments
 - Build scenarios for the virtual countries
- ✓ Overview of commercial frameworks to support goals
 - Define “commercial framework” concept
 - Presentation of value chain minimum requirements model developed by Energy Institute based on cross-country comparisons of approaches and results achieved
 - Open dialogue to prepare for next day’s assignment

Networking Dinner with Program Instructors & Sponsors

TUESDAY, MAY 15

- ✓ “Globalizing the energy value chain”—presenting the energy value chains from the commercial point of view (program conducted in conjunction with industry site visits)
- ✓ Broad industry overviews
- ✓ The value chain concept and boundary conditions
- ✓ Value chain specifics
 - Crude oil to refining and marketing; natural gas to electric power
 - Worldwide energy industry organization (including role of national oil companies), energy fuel market structure (oil and OPEC, regional markets and uses for gas vs. LNG)
 - Key differences across business segments to be reflected in legal/regulatory considerations and risk assessment, and how they link
 - International trade considerations
 - Advanced issues
 - Business concepts for bundled energy services platforms
 - Information technology and management across the value chains (e-commerce)

THURSDAY, MAY 17

- ✓ Specific considerations of commercial frameworks
 - Legal, regulatory, financial international standards; environmental protection and policy treatment of labor, social and other considerations; international trade considerations; concept of “monetizing” energy resources; value chain linkages; specific fiscal models used by governments for upstream investment (concessions, contracts and agreements) and effects (results achieved); transit and access, transportation tariffs and end use; conversion and distribution; administrative law considerations for regulatory operations; case-study discussion throughout
- ✓ Open dialogue—Industry/country case experience targeting key issues

Networking Dinner with Program Instructors & Sponsors

FRIDAY, MAY 18

- ✓ Participant teams build commercial frameworks
- ✓ Compare group results, evaluation and discussion

Hosted Dinner

NEW ERA IN OIL, GAS & POWER VALUE CREATION

PROGRAM SCHEDULE

Saturday, May 19—Friday, May 25

<p>SATURDAY, MAY 19 & SUNDAY, MAY 20 Facilitated Weekend Retreat & Free Time</p>	<p>WEDNESDAY, MAY 23</p> <ul style="list-style-type: none"> ✓ Implementation, operation <ul style="list-style-type: none"> • Case studies on projects to introduce, illustrate specific commercial issues such as subsidies and incentives (country experience in phasing out price subsidies, establishing market pricing and end use markets), ongoing issues in regulating market power ✓ Conflict management/dispute resolution overview—principles in building frameworks and negotiating contracts to facilitate settlement <p style="text-align: center;">Networking Dinner with Program Instructors & Sponsors</p>
<p>MONDAY, MAY 21</p> <ul style="list-style-type: none"> ✓ Investment scenarios for virtual countries and Energy Inc. <ul style="list-style-type: none"> • Financial requirements for energy project investments, global capital market considerations, deal structuring practices and trends with link to global scan and virtual country scenarios and outlooks • Sources of political and business risk, country risk assessment, risk management practices • Regional and international trade policy considerations ✓ Negotiation exercises related to Energy Inc. project investments in each scenario with hands on, facilitated exercises using Energy Inc. investment simulations ✓ Evaluation, discussion and debate <p style="text-align: center;">Networking Dinner with Program Instructors & Sponsors</p>	<p>THURSDAY, MAY 24</p> <ul style="list-style-type: none"> ✓ Disruptions to the virtual country/energy project scenarios <ul style="list-style-type: none"> • Routine commercial disputes that are generally settled within dispute resolution framework of law and/or contract/agreement and larger, more difficult disputes that lead to litigation • Examples—commodity price shocks (global scan), international trade, internal disputes (labor and environment, national energy companies and regulators) • Scenarios leading to settlement • Non-settlement solutions—arbitration, meditation, litigation ✓ Implications for initial design of commercial framework and investment negotiation <p style="text-align: center;">Networking Dinner with Program Instructors & Sponsors</p>
<p>TUESDAY, MAY 22</p> <ul style="list-style-type: none"> ✓ Energy project development <ul style="list-style-type: none"> • Overview of financing and deal structuring issues, risk assessment and management ✓ Advanced issues—trading and risk management <ul style="list-style-type: none"> • Simulated commodity trading game using virtual country “currencies” and Energy Institute online energy trading lab • Site tours, Houston energy trading floors <p style="text-align: center;">Free Evening</p>	<p>FRIDAY, MAY 25</p> <p style="text-align: center;">International Colloquium on Energy Sector Reform Program Evaluation & Graduation Dinner</p>

PROGRAM COST

The program cost is **\$7,500**. The cost includes program tuition, course materials, living accommodations at the **University of Houston Hilton Hotel** (residency is required at the Hilton for the duration of the program), meals, transportation and special events. Corporate and government sponsorship support for “New Era” is welcome. For more information on this option and associated benefits, please contact the Energy Institute at **713.743.4634**.

To register, please submit nomination materials by **March 19, 2001**. Proof of payment must be received by **April 16, 2001** to attend the program.

Special needs of participants will be provided for wherever and whenever possible.

Please complete the nomination on the back page of this brochure and fax it to the University of Houston Energy Institute at **713.743.4881** or submit nomination form online through the Institute’s website at **www.uh.edu/energyinstitute.newera**.

About Houston, the University of Houston & the Energy Institute

Houston is the energy capital of the world. Approximately 5,000 energy-related establishments are located within the Houston region, including more than 400 exploration and production firms, more than 30 pipeline operators, and hundreds of manufacturers of energy sector products. Houston is home to 48 of the nation's 200 largest publicly traded oil and gas exploration and production firms and headquarters for five of the 20 largest publicly traded companies. The logistics for moving much of the nation's petroleum, petroleum products and natural gas across the country are controlled from Houston—13 of the nation's top 20 natural gas transmission companies have their corporate or divisional headquarters in Houston, controlling more than half of U.S. capacity.



Central Houston as viewed from the University of Houston campus.

Changes in the structure of the industry have led oil and gas firms to develop new ways to capitalize on skills, international contacts and expertise. Houston has become a center for these new energy ventures, including trading and marketing not only in petroleum and natural gas but also electric power and other products like weather and bandwidth; finance; and integrated energy services. Finally, Houston is home to an extensive platform of energy accounting, auditing, law, investment banking and other critical business functions. Participants in the New Era Program will have access to a number of industry experts and companies and facilities for site visits. Apart from its energy industry base, Houston is internationally recognized for its Texas Medical Center, the Johnson Space Center (part of the National Aeronautic and Space Administration) and a marine port that is one of the three largest in the U.S. and location of roughly 40 percent of U.S. petrochemical capacity. Outstanding cultural organizations include the Houston Grand Opera, Houston Ballet, Museum of Fine Arts, Menil Collection and Museum of Natural Science. In addition to UH, Houston is home to other outstanding universities and educational institutions.

The **University of Houston** is the third largest public university system in the state of Texas. The main campus, where New Era for Oil, Gas and Power Value Creation takes place, boasts a highly diversified, international body of 33,000 undergraduate and graduate students. The **C.T. Bauer College of Business**, where the **Energy Institute** is based, is the largest academic unit. **The Law Center** is recognized in the U.S. and abroad in several disciplines. Elsewhere at UH, specialized centers and laboratories in the sciences and engineering conduct ongoing technical research in energy-related areas. These include the Texas Center for Superconductivity, Virtual Environment Research Institute, Composite Materials Research Institute and the Space Vacuum Epitaxy Center. The University of Houston also has ample recreational and cultural facilities accessible to program participants.

Established in July 1995, the Energy Institute is an influential, university-based center of excellence that produces solid results to support open markets for private investment in energy, captures both the business and policy dimensions and serves as a platform for advanced market knowledge that can be incorporated in BCB and UH degree program fundamentals and principles. We concentrate on the policy frameworks that best serve global capital markets for energy resource and infrastructure development—the ingredients for successful, “bankable” energy investments—as well as on optimal strategies for investment and trade. Houston provides a unique setting for interaction with the international energy industries. The Institute is externally funded through Corporate and Government Partner sponsorships, research grants and contracts and revenues from education programs and publications. To date, about 30 faculty and international research fellows and 20 graduate students have collaborated with more than 60 Partner Fellows, Advisors, Senior Associates, visiting scholars and professional staff through the Institute. We focus our interdisciplinary research on three fundamental, interacting forces that are re-shaping the global energy industries.

- ✓ The role of government (at all levels) and policy models for commercial energy development.
- ✓ The business/government interface.
- ✓ Corporate strategies and management responses to more competitive energy markets.

Current Institute Activities

Research Highlights

- Gas/power “marketization:” The Institute is a leader among university research centers on natural gas and electric power field-to-market development and convergence. Our scope includes the Americas; West Europe; West and South Africa; Turkey, the Caspian and Middle East; and East Asia. Research includes market design and structure, Best Practices, intensive market analysis and case studies, outlooks, country databases and objective public commentary.
- Special topics: Range from oil market transparency to impacts of “disruptive” technologies such as new vehicle engine designs and environmental trends.
- Energy Business Enterprise of the Future: Business consequences of more competitive energy markets. Activity includes “Energy Inc.” simulation for research and instruction, case studies and special research topics such as information technologies.
- Online Energy Trading Lab: The Institute is helping to develop a Web-based energy trading platform that will provide commodity market information and expert systems for market simulation, experimental research on market design and behavior, financial product structuring, integration of physical asset and risk management strategies and decision analytics and support.

Besides “Energy Inc.,” the Institute’s semi-annual newsletter, recent publications include the following:

Guide to Electric Power in Texas
North American Energy Integration
LPG Markets in Mexico
Pemex & Petrobras: Two Roads to Open Markets
Electricity & Gas Marketization in the EU
The Politics & Economics of Caspian Export Pipelines
The Russian Oil & Gas Industry in Transition
Power Marketization in Turkey
Asia Oil and Gas Megatrends, Balance & Geopolitics
Best Practices in Energy Sector Reform

Faculty

Overall Program Coordination & Management

MICHELLE MICHOT FOSS, Ph.D., Director, Energy Institute
AISHA JAMAL, Administrative Coordinator, Energy Institute

Oil, Gas, & Power Value Chain Concepts, Virtual Country Composites, Energy, Inc. Simulation, Country & Industry Case Study Development:

MICHELLE MICHOT FOSS, Ph.D., Director, Energy Institute
GÜRCAN GÜLEN, Ph.D., Research Associate, Energy Institute
FISOYE DELANO, JORGE MERCADO & MARIO VALDERAMA
Research Assistants, Energy Institute
BHAMY SHENOY, Ph.D., Hagler Bailly Services

Legal Concepts & Applications

STEPHEN HUBER, J.D., UH Law Center
JACQUELINE WEAVER, J.D., UH Law Center

Program Facilitation

RANDY McCREA, Shell Oil Company
ROGER BLAKENEY, Bauer College of Business Department of Management
CLIVE JONES, CBE, Advisory Board, Bauer College of Business Energy Institute

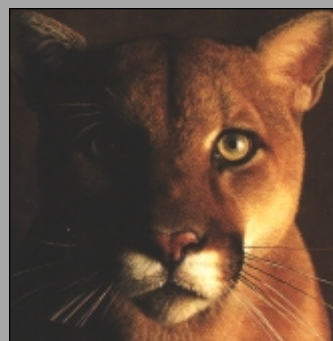
In addition to these individuals, the program will include senior representatives from a number of energy organizations and corporations, as well as leading experts in areas of energy value chain delivery. The development of New Era was undertaken with an international advisory board of 40 recognized experts from industry, government and other universities. Many of these professionals will participate in the program as guest instructors, as case study and site visit coordinators and in networking sessions with program participants.

*New Era is supported by the U.S. Department of Energy
Office of Fossil Energy*



Energy Institute Corporate & Government Partners

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UNIVERSITY OF HOUSTON

Learning. Leading.

The University of Houston is an Affirmative Action/Equal Opportunity Institution. Accommodations on the basis of disability are available by calling 713.743.4634 before the program date begins.

PARTICIPANT NOMINATION

New Era participants **must** be nominated by sponsoring organizations.

NAME _____ TITLE _____
ORGANIZATION _____
ADDRESS FOR OVERNIGHT DELIVERY _____
CITY _____ STATE/PROVINCE _____
COUNTRY _____
POSTAL CODE _____ TELEPHONE _____
FAX _____ E-MAIL _____

BACKGROUND INFORMATION

Will you require language translation assistance (indicate language preference)?
(Note: English proficiency is required; limited translation assistance can be provided.) _____

Will you require additional funding support? _____

Do you have any special dietary requirements? _____

Do you have any religious or other preferences that are not accommodated by the program schedule? _____

Will you require assistance with visa/travel arrangements? _____

Brief summary of your current position and experience (additional materials may be attached separately). _____

Please provide names and contact information from your sponsoring organization.

NAME _____ TITLE _____
ORGANIZATION _____
ADDRESS _____
COUNTRY _____ TELEPHONE _____
FAX _____ E-MAIL _____
NAME _____ TITLE _____
ORGANIZATION _____
ADDRESS _____
COUNTRY _____ TELEPHONE _____
FAX _____ E-MAIL _____



BAUER
COLLEGE OF BUSINESS
UNIVERSITY of HOUSTON
ENERGY★INSTITUTE
HOUSTON, TX 77204-6283
•
Phone—713.743.4634
Fax—713.743.4881
E-Mail—energyinstitute@uh.edu
Web—www.uh.edu/energyinstitute