SPRING 2001
All class meetings: Mondays, 6-9pm, MH 127
Reminder: Your course materials are drawn principally from Web sites, with supplemental information provided by the instructor. There are abundant resources on the Web. Items marked with ** are REQUIRED (i.e., they provide specific information you will need for assignments, discussions, etc.). You need to become familiar with these sites! Additional required sites are listed in the course schedule. Other sites in the list below will be used to access specific background for discussion topics and research.

Principle Web Reference Materials for Course
U.S. Energy Information Administration (U.S. EIA). Get to know and love the EIA Web site! Up-to-date Country Analysis Briefs (CABs) and fact sheets, links to other Web sites, including CIA Factbook for international risk. Used for entire course.

- **Annual Energy Review (AER).** This is one of your principal data sources for the course. You can obtain data on specific sectors or download the entire (huge) document. It’s best to access sections relevant to each part of our course. Note the Glossary if you are not familiar with energy terminology.
  http://www.eia.doe.gov/emeu/aer/contents.html
- **International Energy Annual** (most recent available). This also is one of your principal data sources for the course. Again, you can download the entire document, or sections relevant to each part of our course. Note the Glossary if you are not familiar with energy terminology.
  http://www.eia.doe.gov/emeu/iea/contents.html (or access from AER page)
- **Country Analysis Briefs (CABs).** Important links to other Internet sites that provide valuable information on specific countries.
  http://www.eia.doe.gov/emeu/cabs/contents.html
- **Annual Energy Outlook** (most recent available, U.S.)
  http://www.eia.doe.gov/oiaf/aeo/index.html
- **International Energy Outlook** (most recent available)
  http://www.eia.doe.gov/emeu/international/forecast.html#Mid-Term
- **World Energy Balances** (supply-demand balances for countries; access from International Energy Annual page)
- **State Data** (recent data for all 50 states)
  http://www.eia.doe.gov/emeu/states/_states.html

**BP Statistical Review of World Energy.** You can download the entire book or specific sections and Excel spreadsheet data. Premier corporate publication on energy. Good source for all aspects of the course.
  http://www.bp.com/worldenergy/
I. WORLD ENERGY OVERVIEW

Jan 22
- Course background and objectives, schedule, “rules of the road,” Briefing Book
- The Energy Inc. concept for the course
- World energy trends and developments

Review on Your Own
- U.S. EIA, Annual Energy Review (AER), Energy in the U.S.: A Brief History and Current Trends
  [http://www.eia.doe.gov/emeu/aer/contents.html](http://www.eia.doe.gov/emeu/aer/contents.html)
- U.S. EIA, Country Analysis Briefs (CABs): United States
  [http://www.eia.doe.gov/emeu/cabs/contents.html](http://www.eia.doe.gov/emeu/cabs/contents.html)
- U.S. EIA, Highlights from the International Energy Outlook 2000

From Instructor:
- Course materials
- Slide package

Jan 29
- Energy economics: competitive markets, monopoly, environmental externalities
- Scarce resources: do we have enough?

Required
- U.S. EIA, OPEC Fact Sheet
  [http://www.eia.doe.gov/cabs/opec.html](http://www.eia.doe.gov/cabs/opec.html)
- American Petroleum Institute (API) – “Oil Supplies: Are We Really Running Out of Oil?”
  [http://www.api.org/oilsup.htm](http://www.api.org/oilsup.htm)

From Instructor:
- “Betting the Planet,” New York Times Magazine
- “The End of Cheap Oil,” Scientific American
- “Cheap Oil” and “We Woz Wrong,” The Economist

You need to provide:
- The best news story you can locate on the current issues for EITHER natural gas or electric power.
  Hint: the Wall Street Journal has run major stories on each during the past 2-3 weeks!

Feb 5
- The energy value chain concept
- Energy industry organization, key business segments and performance
- Industry strategic issues – big trends
- Industry policy and politics: environment, community, international relations

Required
- U.S. EIA, Performance Profiles of Major Energy Producers (most recent available). You can also access previous editions online. The EIA collects financial data from a sample of energy companies each year and compiles trends.
Web Resources for Modules II and III
To familiarize or refresh on the details of oil and gas exploration and production (upstream) and oil refining and marketing (downstream), these are useful Web sites.

- Go to Chevron’s Know-It-All site (yeah, yeah it’s cute) for good information on all aspects of the oil industry. See especially A Petroleum Prospecting Primer and What is a refinery? (including subsections, a simple illustration of refinery processes and A Quick Lesson on Refinery Economics).
  http://www.chevroncars.com/know/index.html
- Natural Gas Information and Educational Resources, The Natural Gas Line. Use the sections Exploration, Extraction and Production (exclude all sections related to natural gas processing; we’ll use that in the next module). These materials provide great background information on how both oil and gas resources are found and developed. Note the embedded links to special topics, like The Earth’s Interior and Plate Tectonics in the Exploration section. Also note the Glossary on the site. Note: we will use the sections on transportation, distribution, policy in Module III.
  http://www.naturalgas.org/ (go to the Natural Gas Line)
- Go to the American Petroleum Institute Web site, Educational Materials. There are links to the Chevron site (above). Note Facts About Oil (and subsection, What A Barrel of Crude Oil Makes), Facts About Gasoline (and subsections Motor Fuel Taxes by State and Fuel Tax Facts). This site also includes background information on natural gas that you can use in Module III.
  http://www.api.org/edu/

Feb 12
- Business process issues: from discovery to your car
- Worldwide oil industry restructuring: the business arguments for and against vertical integration; the role of technology and innovation
Required
From the Instructor:
• “Can the E&P industry avoid future shock?” Oil and Gas Journal (OGJ)
• Selections from Revolution in Upstream Oil & Gas, McKinsey & Company
• “Common financial strategies found among top 10 oil and gas firms,” OGJ
• “The New Old Economy,” The Atlantic Monthly
• “The Refinery of the Future,” Proceedings, Strategic Value of Fossil Fuels
• Energy Inc. R&M Team, Fall 1999 Report

Feb 19
• Policy and politics in the oil and refining/marketing businesses
• What should a national energy strategy include for oil?
Required
• Browse the Issues papers on the API Web site.

III. NATURAL GAS/ELECTRIC POWER VALUE CHAIN DEVELOPMENT

Web Resources for Module III
To familiarize or refresh on the details of natural gas exploration and production (upstream), transportation and distribution (midstream) and electric power generation, transmission and distribution (downstream for natural gas), these are useful Web sites.
• Natural Gas Information and Educational Resources – sections on Overview, History, Environment, Policy. The Natural Gas Line – all sections including. Remember the Glossary for terminology you may not understand.
  http://www.naturalgas.org/ (go to The Natural Gas Line)
• UHCBA Energy Institute, Guide to Electric Power in Texas
  http://www.uh.edu/energyinstitute/energy.htm (go to the publications page and download)

Feb 26
• Business process issues: from discovery to your furnace or local power plant
• Reconstituting the U.S. natural gas industry
Required
• All sections related to policy on Natural Gas Information and Educational Resources site.
  http://www.eia.doe.gov (Go to Natural Gas, Analysis Publications)

Highly recommended:
• U.S. EIA, Natural Gas 1996: Issues and Trends; Chapter 3, The Emergence of Market Centers and Hubs. (Go to Natural Gas, Analysis Publications)
  http://www.eia.doe.gov/oil_gas/natural_gas/analysis_publications/nat_analysis_publications.html
• U.S. EIA, Natural Gas 1995: Issues and Trends; Chapter 3, Transportation Markets
  http://www.eia.doe.gov  (Go to Natural Gas, Analysis Publications)
• U.S. EIA, Natural Gas 1994: Issues and Trends; Chapter 2, The Natural Gas Industry Under Order 636; Chapter 3, Natural Gas Contracting
  http://www.eia.doe.gov  (Go to natural gas, choose analysis publications and select from list.)
• U.S. EIA, Status of Natural Gas Residential Choice Programs by State. Table of state-by-state initiatives.
  http://www.eia.doe.gov/oil_gas/natural_gas/restructure/restructure.html
• Serious students of the policy restructuring process will want to access the Federal Energy Regulatory Commission (FERC) Web site.
  http://www.ferc.fed.us  (go to Gas for recent and past FERC actions)

Mar 5
• Restructuring the U.S. electric power industry

Required
• Energy Institute, Guide to Electric Power in Texas
• U.S. EIA, Restructuring of the Electric Power Industry. Although this is presented as “A Capsule of Issues and Events” it is quite a good primer on how the competitive industry will work. See other materials below for evolution of competition. Note the Generating Components: Key Terms and Definitions.
  http://www.eia.doe.gov/cneaf/electricity/chg_str/booklet/electbooklet.html

Highly recommended:
  http://www.eia.doe.gov/cneaf/electricity/chg_str/issu/summary/300_issu_sum.html
• U.S. EIA, Status of State Electric Industry Restructuring Activity. Table of state-by-state initiatives.
  http://www.eia.doe.gov/cneaf/electricity/chg_str/regmap.html
• The patchwork of state programs is complex. The National Association of Regulatory Utility Commissioners (NARUC) Web site is a good place to link to individual state public utility regulatory commissions for details.
  http://www.naruc.org/
• Serious students of the policy restructuring process will want to access the Federal Energy Regulatory Commission (FERC) Web site.
  http://www.ferc.fed.us  (Go to Electric for recent and past FERC actions)

Mar 12 – Spring Break

Mar 19 (Chiheb Layoun, DENA)
• Major issues for U.S. gas/power: a recap
• Achieving gas/power convergence: scale, scope, market development and constraints
• Policy and politics

Required
• U.S. EIA, Annual Energy Outlook – Legislation and Regulation (use the following sections – FERC Order 637, FERC Order 2000, Low Emission Vehicle Program, Appliance Efficiency Standards)
  http://www.eia.doe.gov/oiaf/aeo/leg_reg.html
• Browse the Issues papers on the API Web site for natural gas related topics.

**IV. ENERGY TRADING AND MARKETING**

*Mar 26*
- Why we need it
- How it works and strategic considerations

**Required**
- New York Mercantile Exchange (Go to the NYMEX Welcome page and click on How the Exchange Works. From the left-hand banner go to Markets and click on Futures and Options. Review descriptions of all energy contracts. Or, go to Settlement Data and you can view descriptions of the contracts as well as quotes, charts and settlement data by commodity. Try to do all of this on a fast Internet connection – the streaming NYMEX ticker slows things down.)
  http://www.nymex.com/

  From the Instructor:
  - “To Hedge or not to Hedge,” *World Energy Magazine*
  - “Hedging Your Megawatts,” *Journal of Accountancy*

**V. THE PARTICULAR CASE OF OIL FIELD SERVICES**

*Apr 2*
- The role of oil field services
  - Business and strategic considerations

**Required**
- U.S. EIA, Annual Energy Review, review data on oil services activity in Energy Resources (drilling, well completions, seismic activity, expenditure trends)
- Browse the Simmons & Company International Web site for oil services-related information.

**VI. ENVIRONMENT AND ALTERNATIVE FUELS**

*Apr 9*
- Environmental protection in the energy industries
- Alternative energy technologies

**Required**
- U.S. EIA, Annual Energy Review and International Energy Annual, review data on CO₂ Emissions, non-hydrocarbon energy production
- “Human-Dominated Ecosystems,” *Science*
- Cato Institute, The Increasing Sustainability of Conventional Fuels
- Cato Institute, Renewable Energy: Not Cheap, Not Green
- Browse the Toyota Web site for information on the Prius and Honda’s Web site for the Insight
  From the Instructor:
- Energy Institute, Ford Motor Company case study

*INTB 7397, Energy Inc., 6*
VII. INTERNATIONAL ENERGY PROJECT DEVELOPMENT

Apr 16
- Worldwide trends: Are market transformations skin deep?

Required
- U.S. EIA, Privatization and Globalization of Energy Markets. This is a bit dated, but still a good overview publication. More recent information on specific countries can be obtained from the CABs.
  http://www.eia.doe.gov/emeu/pgem/contents.html
- U.S. EIA – Electricity Reform Abroad and U.S. Investment
  http://www.eia.doe.gov/emeu/pgem/electric/contents.html

From the Instructor:
- “Worldwide Transformations,” ABA Environment and Natural Resources

Highly recommended:
- Enron Outlook 1999. One of the best corporate publications on gas and power.

Apr 23
- International energy project finance: upstream vs. downstream considerations
- Political/country risk

Required
From the Instructor:
- Selections from Financing Energy Projects in Emerging Economies
- “The End of Corporate Imperialism,” Harvard Business Review

Resources for discussion:
- U.S. EIA, World Energy “Areas to Watch”
  http://www.eia.doe.gov/emeu/cabs/hot.html
- U.S. EIA, CABs on specific countries/regions to be determined.
- U.S. Central Intelligence Agency World Factbook. Our main reference for background information to be used in country analysis and political risk assessment.

Highly recommended:
- Organizations that monitor human rights issues:
  http://www.oneworld.org/
  http://www.transparency.de/
  http://www.freedomhouse.org/

Apr 30 – Team Presentations
SEMESTER MILESTONES AND ASSIGNMENTS

Feb 5
• Selection of companies for competitor reports

Feb 12
• Energy Inc. team selections

Feb 26
• Snap Assignment 1

Mar 5
• Competitor Reports due

Mar 26
• Snap Assignment 2

April 16
• Snap Assignment 3

April 30
• Team presentations

5pm on Date of Scheduled Final Exam
• Energy Inc. team final written reports due