
National Capital Area Chapter

United States Association for
Energy Economics

November 2003

www.ncac-usaee.org

news

Natural Gas, Fuel Diversity and North American Energy Markets

Our Next Luncheon at Library of Congress

- WHEN:** Noon, Friday, November 21
- WHERE:** 6th Floor, Madison Building—Montpelier Dining Room
Library of Congress (enter from Independence Avenue)
1st Street & Independence Avenue, SE
Washington, DC
- SPEAKER:** Hillard G. Huntington, Stanford University's Energy Modeling Forum

Sudden price spikes have led to speculation that the United States is facing a critical shortage of natural gas. If these fears are correct, future reliance upon this fuel for both economic and environmental reasons can become very risky.

This talk describes a recent study conducted by some 45 people from government, companies and universities to investigate the longer-run prospects for North American natural gas and the extent to which the country should diversify toward other fuels. The results suggest that natural gas markets are not in a crisis, but that natural gas may compete higher up along the energy value chain than has historically been the case.

Hillard G. Huntington is executive director of Stanford University's Energy Modeling Forum. He has been an active participant in the International Association for Energy Economics, having served as president of the US chapter and vice-president for publications. **The Energy Modeling Forum** seeks to improve the use of computer modeling in companies and government agencies. A working group of about 45 people from government, business and universities meets to identify the key issues and use multiple models to develop insights and understanding of the selected topic. The recent natural gas study involved seven different modeling teams.

Join us on Friday, November 21 at 12:00 pm for networking, with the lunch-line forming promptly at 12:30 and the presentation beginning at 1 pm so we are done by 2 pm.

COST: \$20.00 for members (\$5.00 for student members) and \$25.00 for non-members—guests are always welcome. Make checks payable to NCAC-USAE. **RSVP:** By COB Tuesday, November 18 to Leslie Coleman by phone (202/463-9780) or email (lcoleman@nma.org). Cancellations after noon Wednesday will be billed.

USAEE-IAEE North American Conference – Summer 2004

The USAEE/IAEE North American Conference will be held in Washington, DC on July 8-10, 2004. The conference is in the early planning stages so there are many opportunities for members of the NCAC to take an active role in this international event. There hasn't been an IAEE conference in Washington since 1995 so this is a real opportunity for many newer members to have a more active role in the broader organization.

A call for papers listing the conference theme and topics for some plenary sessions can be found on the USAEE website at <http://www.usaee.org/pdf/w04cfp.pdf>

We would like to form a committee of NCAC members to help plan events outside the regular program. Possibilities include organized tours to energy sites of interest for conference participants, coordinating side events or programs with complementary organizations, coordinating opportunities for participants and/or their families to participate in various cultural events in the Washington, DC area. If you are interested in becoming involved, please contact Shirley Neff at shirleyneff@earthlink.net or at 202-462-6013.

The USAEE is currently developing an expanded program to support student participation in the conference. Details will be provided soon. *From Shirley Neff - USAEE VP for Conferences and NCAC Council Member.*

Updated NCAC Directory

NCAC Vice President Ron Planting recently distributed the 2003 NCAC directory to members via e-mail. We urge our members who have received this directory to check their own listings to make sure they are correct and up-to-date. We have discovered a couple of errors that we intend to correct. Anyone who has not already submitted their 2003 memberships to do so quickly. We will reissue the 2003 directory, with corrections, in a few weeks. Please send any updated information to: Leslie Coleman, coleman@nma.org.

Highlights of the October Lunch

SPEAKER: Richard N. Smith, Nuclear Energy Institute

Trading Masters on the Road to a Hydrogen Economy

With the September luncheon canceled due to Hurricane Isabel, NCAC reconvened in October for a presentation by Richard Smith, Director of Policy Analysis at the Nuclear Energy Institute. Smith emphasized that he would focus on an issue concerning policy (not economics), and his

presentation centered on the future use of hydrogen for energy and the role nuclear technologies could play in a hydrogen economy.

Smith started by noting that hydrogen-driven energy had received some attention from the Bush Administration and consequently policy-makers in Washington. Smith provided basic facts about hydrogen and its potential use as a source of energy. In particular, hydrogen is the most abundant element in the universe (tenth most abundant on earth), but it is not found in pure molecular form and must be manufactured or extracted from compounds containing other elements. In the U.S. today, 95% of hydrogen is produced via 'methane steam reforming,' which burns about 20% of the natural gas feedstock in the process; half of the hydrogen produced is used in making (ammonia-based) fertilizers.

Relying on natural gas to produce hydrogen, he pointed out, has drawbacks. It produces greenhouse gas emissions, relies on volatile natural gas prices (and will increasingly impact electricity prices if more gas is used to make hydrogen), and diverts natural gas from "higher order" end uses, for example in the chemical and petrochemical industries. Smith also outlined the tightening natural gas market, including forecasted shortfalls between domestic production and demand and the recent large additions to domestic power generation capacity that are natural gas based. He suggested that failing to use all available methods of hydrogen production would slow down the build in institutional knowledge and infrastructure needed for a hydrogen economy.

On the other hand, the nuclear industry could get started in a hydrogen production demonstration project. A first stage effort by either a public-private partnership or inter-industry consortium could involve existing nuclear power plants producing hydrogen using electrolysis and off-peak electricity at facilities located away from reactor buildings. In a second stage, new plants (some new plant designs have already been certified by the Nuclear Regulatory Commission) could plan and build in a hydrogen production stream. Ultimately nuclear "Gen IV" reactor designs (still under development) will be capable of much greater efficiencies in hydrogen production.

A lively Q&A session followed Richard Smith's presentation. Smith answered a variety of questions concerning existing hydrogen use at nuclear power plants (to cool turbines), sources of funding for a nuclear industry hydrogen program, and policy comparisons between the U.S. and the European Union, which aims to have hydrogen supply 20% of energy in 2020.

Smith concluded by offering his own calculations that compare hydrogen to other fuels:

- 41 kWh will produce 1 cubic meter of H
- 1.1 cubic meters of H (1 kg) is equivalent to 1 gallon of gasoline
- Therefore, 45 kWh will produce H equivalent to 1 gallon of gasoline
- With electricity at \$0.03/kWh, cost of gallon equivalent is \$1.35.
- Add 10% for transportation and refueling, gives price of ~\$1.50

2003 OFFICERS and COUNCIL MEMBERS

Name	Phone	Fax	E-Mail
Sarah McKinley President	202-502-8368 Federal Energy Regulatory Commission	202-208-0500	sarah.mckinley@ferc.gov
Ron Planting Vice President	202-682-8509 American Petroleum Institute	202-962-4730	Planting@api.org
Sara Banaszak Secretary	202-721-0302 or 872-1199 PFC Energy	202-872-1219	sbanaszak@pfcenergy.com
Leslie Coleman Treasurer	202-463-9780 National Mining Association	202-463-2614	lcoleman@nma.org
David South Immediate Past Pres.	703-690-2737 Technology & Market Solutions, LLC	703-690-2736	david@t-msolutions.com
Stephanie Battles	202-586-7237 Energy Information Administration	202-586-0018	stephanie.battles@eia.doe.gov
John Felmy	202-682-8530 American Petroleum Institute	202-682-8408	felmyj@api.org
John Jimison	202-728-9049 Attorney-at-Law	202-544-0043	john@jwj-llc.com
Fred Joutz	202-994-4899 George Washington University	202-994-6147	fjoutz@attglobal.net
Wil Kohl	202-663-5725 Director, IEEP, SAIS	202-663-5769	wkohl@jhu.edu
Len Levine	202-965-2788 Energy Consultant		len.levinegr@verizon.net
Mark B. Lively	301-428-3618 Utility Economic Engineers	301-428-3618	MbeLively@aol.com
Shirley Neff	202-361-5434 Goldwyn International Strategies, LLC		sneff@goldwyn.org
Carol Rendall	301-229-8978 Energy Consultant	301-229-8978	carolwrendall@msn.com
Anne Roland	410-767-8166 Maryland Peoples' Counsel		AnneR@opc.state.md.us
Cyndy Wilson	202-502-8941 Federal Energy Regulatory Commission.	202-502-	Cynthia.Wilson@ferc.gov

2003 MEMBERSHIP RENEWAL/REGISTRATION FORM

National Capital Area Chapter U.S. Association for Energy Economics

- Please check here for membership renewal.
- Please check here for new membership registration.
- Please check here for student membership registration.

Membership registration/renewal for the NCAC/USAEE is expected by the end of the preceding calendar year.

Please return your registration form and check to **Leslie Coleman**—NCAC/USAEE 2003 Treasurer at: **National Mining Association, 101 Constitution Ave., Suite 500 East, NW, Washington, DC 20001**. Phone: 202/463-9780. Email: lcoleman@nma.org.

Full membership dues for 2003 are \$20.00 (students \$10.00). Please make checks payable to NCAC/USAEE.

Please print very clearly.

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