East Asia Science & Security Network Report, March 14, 2007

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1. Scientists Confronting Global Problems

In his presidential address at the annual meeting of the American Association for the Advancement of Science, John Holdren stated that challenges such as poverty, climate change and nuclear proliferation pose global risks that require scientists and engineers to join with political and business leaders in a concerted search for solutions. The website of AAAS includes a video of Holdren's address as well as his Power Point presentation.

http://www.aaas.org/news/releases/2007/0216am_holdren_address.shtml

2. GNEP Nuclear Storage

This presentation by Victor Gilinsky, originally presented at the annual meeting of the AAAS in San Francisco on Feb. 17, 2007, examines the rationale and feasibility behind the plan to place spent nuclear fuel in Yucca Mountain under the Global Nuclear Energy Partnership (GNEP). It concludes that the project makes little sense and will probably never be implemented.

GNEP and Yucca Mountain

3. Security of Gas Markets

In a working paper version of a chapter of his soon-to-be-published dissertation ("Institutions and Gas Market Security") Mark Hayes argues that due to the assymetry of participants in the emerging market for liquified natural gas (LNG), integrated LNG sellers use the US and UK as "markets of last resort" with implications for variability in actual LNG deliveries and for the division of rents in the growing LNG trade.

http://pesd.stanford.edu/publications/institutions_and_gas_market_security/

4. Hydrogen Power

DOE Pulse ("Hopping Hydrogen," 2/26/07) reported that Researchers at DOE's Pacific Northwest National Laboratory and the University of Texas at Austin discovered that a single hydrogen atom just can't keep still after it splits from a water molecule on the surface of the catalyst rutile titanium oxide. By understanding how water's atoms behave on the catalyst surface, scientists and engineers may be able to develop technologies that use abundant, free sun light to split water to generate hydrogen gas.

Hopping Hydrogen

Cogeneration & Onsite Power Production ("Fuel cell to provide 'permanent premium power' for German computer centre," 2/13/07) reported that a 'HotModule' fuel cell-based power generation and cooling system from CFC Solutions GmbH will soon be ensuring reliable operation of the servers in a T-Systems computer centre in Munich, Germany. The 250 kW fuel cell and absorption refrigeration system represent a package solution that will supply electrical energy and cooling capacity for a server suite, which is a self-contained part of the computer centre located in Munich's Euroindustriepark area.

Fuel Cell to Provide Power for Computer Center

5. Renewable Energy Industry

The latest edition of Clean Energy Trends shows that annual revenues for renewable energy technologies climbed 39% in 2006, to $55 billion. The report predicts that the industry will become a $226 billion market by 2016.

Clean Energy Trends 2007

6. Electric Car Battery Development

The New York Times (James Pontin, "A New Battery Takes Off in a Race to Electric Cars," 3/11/07) reports that A123Systems, a start-up in Watertown, Mass., says it has created a powerful, safe, long-lived rechargable lithium battery that can fuel the next generation of electric or hybrid cars.

A New Battery Takes Off in a Race to Electric Cars

7. Wave Power Electricity Generation

The Los Angeles Times (Adrian G. Uribarri, "Electricity from the sea," 3/10/07) reported that the idea of getting electricity from the sea's wave power has been gaining prominence, although the technology remains untested. Pacific Gas & Electric Co. recently became the first California utility to file for permits to study the promise of sea power.

Electricity from the sea

8. Chinese Greenhouse Gas Emissions

The San Franciso Chronicle (Robert Collier, "China about to pass U.S. as world's top generator of greenhouse gases," 3/5/07) reported that a new report released by Beijing authorities indicated that China is highly likely to overtake the United States this year or in 2008 as the world's largest emitter

of greenhouse gases. Information from the International Energy Agency also showed that China's greenhouse gas emissions have recently been growing by a total amount much greater than that of all industrialized nations put together.

China about to pass U.S. as world's top generator of greenhouse gases

9. US Response to Nuclear Attack

The Modesto Bee (Greg Gordon, "Response to nuclear attack? Not much," 3/2/07) reported that experts and government documents suggest that the United States is ill-prepared to deal with the consequences of a nuclear attack on its territory.

Response to nuclear attack

The East Asia Science and Security Network (EASSNet) delivers timely news and innovative research across a range of issues relating to science and security, including energy security, bio-security, nano-technology, nuclear fuel cycle, missile technology, and information technology, especially within the East Asia region. The network draws on research from Nautilus Institute and its partners in China, Japan, South Korea, Russia, Australia, and North Korea, as well as grantees of the MacArthur Foundation, of MacArthur Foundation, Ploughshares Fund, New Land Foundation, Korea Foundation, Ford Foundation, and US Department of Energy. The service provides researchers, journalists, and policymakers access to and understanding of developments beyond their own disciplinary, academic, or industrial communities.

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Nautilus Institute
608 San Miguel Ave., Berkeley, CA 94707-1535 | Phone: (510) 423-0372 | Email: nautilus@nautilus.org