



East Asia Science & Security Network Report, March 28, 2007

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1. Future of Coal Power

A new interdisciplinary study by MIT examines the future of coal power in a world where constraints are placed on carbon emissions. It concludes that carbon capture and sequestration (CCS) is the critical technology, as it would allow the world to continue to use coal while still cutting CO₂ emissions.

<http://web.mit.edu/coal/>

2. National Oil Companies and International Markets

A study by the James Baker Institute of Rice University examines the emerging importance of national oil companies on the global markets. Noting that the top 10 reserve holders internationally are nationally held companies, the report argues that oil suppliers will be increasingly forced to respond to non-market forces, such as the political agendas of rulers.

<http://www.rice.edu/energy/publications/nocs.html>

3. Energy Storage

John Boyes and Dave Menicucci, research engineers at Sandia National Labs, discuss research that leads to the novel proposition that the careful placement of energy generators and associated electric energy and fuel storage near the load can help not only to improve grid reliability but to address critical needs—including security, sustainability, and cost-effectiveness— without compromising safety.

[Energy Storage: The Emerging Nucleus](#)

4. Northeast Asia Environmental Cooperation

The latest Booklet (#5) from the Economic Research Institute for Northeast Asia (ERINA) explores the concept of regional cooperation for meeting the targets of the Kyoto Protocol. The paper includes country profiles for China, the ROK, Japan, Mongolia, and Russia.

[ERINA Booklet](#)

5. Chinese Energy Innovation

The Program on Energy and Sustainable Development at Stanford University has a working paper by Valerie Karplus on "Innovation in China's Energy Sector." The paper identifies factors affecting patterns of technological innovation and adoption in eight industries in China's energy sector (coal, oil and non-conventional hydrocarbons, natural gas, nuclear power, electric power, renewable sources, automobiles, and motor systems). It concludes that innovation performance is strongest in industries that have experienced institutional transformation and growing market competition, whereas in industries where the pre-reform legacy of central control, weak intellectual property protection, and low levels of corporate R&D persists, innovation is lagging.

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

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