



East Asia Science & Security Network Report, August 23, 2007

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1. Carbon Emissions Reduction

A new book by Arjun Makhijani, President of the Institute for Energy and Environmental Research, *Carbon-Free and Nuclear-Free: A Roadmap for US Energy Policy*, argues that the U.S. could eliminate almost all of its carbon emissions by 2050 without relying on nuclear power. Copies of the 23-page executive summary are available on the institute's website; the full study will be available for download shortly. Mark Selden interviewed Makhijani about his findings in Japan Focus.

[Executive Summary](#)

[Carbon-Free and Nuclear-Free](#)

2. Global Energy Demand

The National Petroleum Council released a 422-page report entitled "Facing the Hard Truths About Energy: A Comprehensive View to 2030 of Global Oil and Natural Gas." The report identifies five core strategies for meeting energy demand in the future: increasing efficiency to moderate demand; expanding and diversifying production; integrating energy policy into foreign, trade, security, and environmental policies; enhancing scientific and technological capabilities; and developing the legal and regulatory framework for carbon management.

[Hard Truths About Global Energy](#)

3. IGCC & Carbon Sequestration

The Energy Technology Innovation Project at Harvard University's John F. Kennedy School of Government and the Institute of Engineering Thermophysics at the Chinese Academy of Sciences held a joint conference on Integrated Gasification Combined Cycle (IGCC) & Co-Production and CO₂ Capture & Storage in Beijing in May. The workshop summary is available online.

4. Japanese Nuclear Safety

Writing in Japan Focus, Isibashi Katsuhiko, a professor at the Research Center for Urban Safety and Security of Kobe University, argues that the period of high seismic activity is expected to continue for the next forty years, and that unless radical steps are taken to improve the safety of Japan's nuclear power plants in the near future, Japan could be facing a true nuclear disaster.

[Japan's Nuclear Plants at Grave Danger from Quake Damage](#)

5. Conflict over Arctic Resources

The Christian Science Monitor (Colin Woodard, "Who Resolves Arctic Oil Disputes?" 8/20/07) reported that the melting of the polar ice caps has opened up the specter of competing claims to the Arctic region, as countries bordering the region scramble to lay claim to resources that were formerly inaccessible. The Financial Times (Michael Peel and Fiona Harvey, "Tougher Rules Urged to Protect Arctic," 8/19/07) reported that the World Wildlife Federation has called for an international treaty on the Arctic.

[Who Resolves Arctic Oil Disputes?](#)

[Tougher Rules Urged to Protect Arctic](#)

6. Non-Silicon Solar Cells

The Guardian (David Adam, "Solar Power in the Rain," 8/9/07) reported that a company called G24 Innovations has developed a new solar cell that uses a pigment common in white paint to mimic photosynthesis. Because they don't use silicon, these new cells will be cheaper than traditional photovoltaics, and also work better in periods of low light. While initially limited to small-scale applications like recharging cell phone batteries, the company envisions eventually using them for larger-scale energy production, such as providing electricity to large buildings.

[Solar Power in the Rain](#)

[G24 Innovations](#)

7. Nanotechnology Regulation

Linda K. Breggin and John Pendergrass, legal experts from the Environmental Law Institute (ELI), have authored a new report entitled, "Where Does the Nano Go? End-of-Life Regulation of Nanotechnologies. This report from the Project on Emerging Nanotechnologies analyzes two key Environmental Protection Agency laws that regulate the end-of-life management of nanotechnology. These are the Resource Conservation and Recovery Act (RCRA), and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as the Superfund statute. The report is available for download, along with a video of the event held to launch the report.

[Where does the nano go?](#)

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