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# East Asia Science & Security Network Report, July 25, 2007

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## Recommended Citation

"East Asia Science & Security Network Report, July 25, 2007", EASSNet, July 25, 2007,  
<https://nautilus.org/eassnet/east-asia-science-security-network-report-july-25-2007/>

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## 1. U.S. Nuclear Arsenal

Thomas D'Agostino, Deputy Administrator for Defense Programs, National Nuclear Security Administration, Department of Energy gave a talk at the Woodrow Wilson Center for International Scholars entitled "The Reliable Replacement Warhead and the Future of the U.S. Nuclear Weapons Program." D'Agostino, who has been nominated as the new head of the NNSA, argued that the RRW is necessary to ensure the reliability of the U.S. nuclear arsenal without resorting to testing.

[Reliable Replacement Warhead](#)

## 2. Effect of Nuclear Power on Emissions Reductions

A new study by the Keystone Center finds that, in order to significantly effect carbon emissions, nuclear power would have to return to the rapid growth rate of the 1980s, and sustain that rate of growth for 50 years. It also concluded that the Global Nuclear Energy Partnership proposed by the U.S. is unlikely to succeed.

[Nuclear Power Joint Fact Finding](#)

## 3. Asian Clean Energy Forum

Experts in finance, energy and environment gathered on 26-28 June 2007 in Manila, Philippines during the Asia Clean Energy Forum: Policy and Finance Solutions for Energy Security and Climate Change. The Forum was jointly organized and sponsored by ADB and the United States Agency for International Development (USAID). It was also supported by the U.S. Department of State (US DOS) and the Asia Pacific Economic Cooperation (APEC).

[Asian Clean Energy Forum](#)

#### **4. Global Carbon Emissions**

According to a preliminary estimate by the Netherlands Environmental Assessment Agency, CO2 emissions last year increased by about 2.6%, with China for the first time surpassing the United States to become the world's leading emitter of greenhouse gases.

[China Now No. 1 in CO2 emissions](#)

#### **5. Oceanic CO2 Absorption**

New Scientist Environment (Catherine Brahic, "Southern Ocean Already Losing Ability to Absorb CO2," 5/17/07) reported that researchers say that global warming has caused the Southern Ocean to become windier, preventing waters from absorbing CO2 at the rate at which it is emitted to the atmosphere by humans. They found that the carbon reservoir in the ocean has not increased in 24 years, while CO2 emissions increased by 40%. They warn that this could cause temperatures to rise even faster and higher than predicted by the climate models run by the Intergovernmental Panel on Climate Change.

[Southern Ocean Already Losing Ability to Absorb CO2](#)

#### **6. Fuel Cell Batteries**

Fuel Cell E-Report ("Researchers develop biodegradable fuel cell battery fueled by sugar," May 2007) reported that researchers at St. Louis University in Missouri have developed a fuel cell battery that runs on virtually any sugar source and has the potential to operate three to four times longer on a single charge than conventional lithium ion batteries.

[Sugar-Fueled Fuel Cell](#)

#### **7. Emissions Reduction through Biochar**

The Sydney Morning Herald, ("Surprise: Less Oxygen Could be Just the Trick," 6/12/07) reported that researchers at the University of New South Wales say biochar could reduce carbon dioxide emissions while providing a new source of energy and improving farm productivity. Biochar is produced by burning organic waste in an oxygen-starved environment.

[Less Oxygen Might Do the Trick](#)

#### **8. Turning Heat Into Sound**

Scientists at the University of Utah have developed small devices that turn heat into sound and then into electricity. The technology holds promise for changing waste heat into electricity, harnessing solar energy and cooling computers and radar

[Turning Waste Heat into Sound](#)

#### **9. Environmental Impacts on Health**

The World Health Organization released new country-by-country data on the effect of environmental problems on health. The data shows that 13 million deaths could be prevented annually through environmental improvements.

[Environmental Impacts on Health](#)

## 10. Biomass Development

ORNL Review v. 40 ("The Business of Biomass") reports that researchers at the University of Tennessee and Oak Ridge National Laboratories are working on ways to make the process of extracting ethanol from switchgrass more efficient, in order to make it economically viable.

### [The Business of Biomass](#)

The Daily Telegraph (Roger Highfield, "Could Plastic Grow on Trees?," 06/15/07) reports that researchers at the Pacific Northwest Laboratory in Washington state have discovered the most efficient method yet to convert glucose to a chemical building block for products currently made from petroleum, such as plastics.

### [Could Plastic Grow on Trees?](#)

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