



# THE CARBON SEQUESTRATION NEWSLETTER

## TABLE OF CONTENTS

June 2001

- Sequestration in the News
- Events and Announcements
- Recent Publications
- Legislative Activity

### Sequestration in the News

**Saturated grasslands.** Researchers from Duke University and the University of Texas Austin found evidence to suggest that past soil carbon storage and nitrogen cycling in a grassland ecosystem was more responsive to increasing atmospheric carbon than the ecosystem will be in the coming century. The researchers studied enclosed chambers of grassland exposed to a gradient of CO<sub>2</sub> concentrations ranging from the expected future level of 550 parts per million (ppm) down to 200 ppm (pre-industrial revolution level). According to the study, primary production and soil carbon storage saturated above 400 ppm. The study was supported by DOE and USDA.

["Nonlinear grassland responses to past and future atmospheric CO<sub>2</sub>,"](#) *Nature* 417, 279 - 282, May 16, 2002.

**Rain and terrestrial carbon storage.** A new NASA-funded study discusses the relationship between the hydrogeologic cycle and carbon sequestration. The U.S. terrestrial carbon sink has been increasing since the latter half of the 1900s, and previous research suggested this rise may be due to forest re-growth, higher concentrations of atmospheric CO<sub>2</sub>, and warmer temperatures. Computer model results show that from 1950 to 1993 higher humidity and an 8 percent precipitation increase led to a 14 percent increase in plant growth. The study appears in *Geophysical Research Letters* later this month. ["Changes in rainfall patterns spur plant growth, carbon absorption across U.S.,"](#) NASA, May 16, 2002.

**Ocean plankton fertilization.** A recent *San Francisco Chronicle* article on ocean iron fertilization highlighted efforts by a California-based environmental restoration foundation to cultivate plankton at sea. ["Planktos Foundation Hopes to Reduce Global Warming by Fertilizing the Seas,"](#) *San Francisco Chronicle*, May 22, 2002.

**Climate neutral business.** A 1998 partnership of the nonprofit Climate Neutral Network and the Shaklee Corporation resulted in the development of a portfolio of carbon-offset projects. Projects emphasizing energy-efficiency and renewable-energy technologies were selected for the portfolio. ["Shaklee heats up environmental commitment by going climate cool,"](#) *ENN*, May 29, 2002.

**Initial planning of climate action.** The world's largest paper and forest products company and a member of EPA's Climate Leaders, International Paper, has laid out goals to track, report and reduce greenhouse gas emissions through trading programs and increasing biofuels utilization. International Paper's [efforts](#) will accelerate cooperative strategies involving interdisciplinary teams from around the world, the National Council for Air and Stream Improvement (NCASI), American Forest & Paper Association (AF&PA) and other stakeholders.

*This newsletter is produced by the National Energy Technology Laboratory and presents summaries of significant events related to carbon sequestration that have taken place over the past month.*

**Sale of Australian salt bush carbon credits to Japan.** An Australian mining company has agreed to sell carbon credits to a major Japanese power utility, as part of a package of coal. Landholders in western Australia will be paid to grow salt bush, which will generate the carbon credits. "[Salt bush carbon credits sale to Japan](#)," ABC News, May 29, 2002.

**International carbon trade.** Royal Dutch/Shell and Elsam, Denmark's largest electricity generator, traded carbon pollution permits, establishing the first trading link between the two government-backed emission trading schemes. "[Shell and Elsam in first pollution permit swap](#)," Financial Times, May 6 2002.

## Events and Announcements

- **DOE Seeks Comments on Voluntary GHG Reporting.** The U.S. Department of Energy requests comments on modifications to the Voluntary Reporting of Greenhouse Gases Program (VRGGP). Written comments are due by June 5. [Federal Register](#), May 6, 2002.
- **DOE seeks comments on coal-mine methane utilization.** A Draft Environmental Assessment for "Demonstration of an Integrated Power Generation System for Coal Mine Waste Methane Utilization" has been released by DOE. The project, located in West Virginia, would demonstrate a system for recovering two streams of usable gas from waste methane. One stream would be used to test the feasibility of producing electricity and a second stream would be purified and sold to the local gas distribution company. [Comments are due by June 7](#), 2002.
- **Emissions Trading Strategies 2002.** The 5th [Annual Emissions Trading Strategies](#) event will be held June 19th-20th at the ExCel Conference Centre in London. Many speakers will address carbon market issues.
- **CO<sub>2</sub> Trading 2002: The North American Market.** Organized in association with the International Emissions Trading Association (IETA), "[CO<sub>2</sub> Trading 2002: the North American Market](#)" will be held June 18-20 in Chicago, IL. Key speakers at the conference include industry representatives from DuPont, Cinergy, Entergy, and PG&E, as well as representatives from the U.S. and Canadian governments. [EyeforEnergy](#).
- **USDA Symposium.** The USDA Symposium on [Natural Resource Management to Offset Greenhouse Gas Emissions](#) will be held November 19-21, 2002 in Raleigh, NC. Researchers will present management options for increased carbon storage, innovative technologies and methodologies for monitoring and measuring terrestrial carbon stocks, and economic projections. A panel will discuss policy implications of scientific carbon research findings. Abstracts are due by July 1.
- **The Geological Society of America 2002 Annual Meeting.** A special topic session entitled "[Experimental, Field, and Modeling Studies of Geological Carbon Sequestration](#)," will be held at The Geological Society of America 2002 Annual Meeting & Exposition October 27-30, Denver, Colorado. The session intends to bring Earth scientists together from the experimental, field, and modeling perspectives. The deadline for abstract submission is July 16, 2002. For more information, contact Curt White, [curt.white@netl.doe.gov](mailto:curt.white@netl.doe.gov).

## Recent Publications

- **Fossil energy materials.** Proceedings from the [16th Annual Conference on Fossil Energy Materials 2002](#), are posted on the NETL website. The four sessions covered functional materials, coatings and protection of materials, new alloys, and breakthrough in materials performance and reliability. Several of the presentations cover research on CO<sub>2</sub> removal materials. April 22-24, 2002.
- **U.S. GHG Inventory Fast Facts.** U.S. Environmental Protection Agency released a brochure that provides an overview of the U.S. Greenhouse Gas Emissions Inventory. The [Fast Facts card](#) provides a summary of data from the 2002 report "Inventory of US Greenhouse Gas Emissions and Sinks."
- **Greenhouse gas source relativity.** A paper by researchers at the Carbon Dioxide Information Analysis Center analyzes greenhouse gas emissions from many sources, on scales ranging from global to national (from country submissions in accordance with the Framework Convention on Climate Change) to state (from individual state emissions inventories). Individual country and state perspectives exhibit some commonalities but differ in detail. "The Relative Importance of Sources of Greenhouse-Gas Emissions: Comparison of Global Through Sub-national Perspectives," *Environmental Management*, Volume 29, No. 3, pp. 360-372, [abstract online](#).
- **Global Warming Potentials.** A new background document on Greenhouse Gases and Global Warming Potential (GWP) Values from the U.S. Greenhouse Gas Inventory Program describes the characteristics of each of the various greenhouse gases and discusses the concept of Global Warming Potential (GWP) values. Overall, revisions to GWP values do not have a significant effect on U.S. emission trends. "[Greenhouse Gases and Global Warming Potential Values](#)," EPA, May 2002.
- **Grandfathering CO<sub>2</sub> Allowances in Europe.** The Energy Research Centre of the Netherlands (ECN) has released a new report entitled "[Economic Effects of Grandfathering CO<sub>2</sub> Emission Allowances](#)." The report analyzes potential capital transfers between economic sectors from grandfathering tradable CO<sub>2</sub> emission allowances in Western Europe from 1990-2030. As a percentage of industrial output, capital transfers are found to be modest. ECN, May 2002.
- **Public outreach for a carbon tax.** The Australia Institute has developed a policy proposal under which the Australian Federal government would deposit \$500 each year, raised through a carbon tax, into the retirement accounts of Australians. "[The Super-Carbon Scheme](#)," The Australia Institute, May 2002.
- **IPIECA Symposium Proceedings.** The International Petroleum Industry Environmental Conservation Association (IPIECA) released a booklet and CD summarizing IPIECA's Fall 2001 Symposium "[Long-term energy needs and carbon management](#)." Experts from academia, industry and government presented and responded to papers on climate change science, long-term energy supply and demand, prospects for technological developments and policy framework options. Presentations from Paul Freund of IEA, Jae Edmond of Batelle, Rob Stavins of Harvard and Dale Simbeck of SFA Pacific are available in the proceedings, along with papers from 26 other field experts.

## Legislative Activity

- **House of Representatives GHG tracking legislation.** Rep. John Olver (D-Mass.) introduced legislation that would require manufacturers and power plants that emit more than 10,000 metric tons of CO<sub>2</sub> equivalent to report emissions to the EPA. Olver modeled the bill on the existing Toxics Release Inventory, which established a system of mandatory reporting for industrial releases of 340 toxic chemicals a decade ago. "[Olver Introduces Greenhouse Gas Tracking Legislation](#)," House Office Press Release, May 1, 2002.
- **California GHG bill vote postponed.** The California Assembly postponed a vote on a bill that would regulate greenhouse-gas emissions from cars and trucks. Earlier this month the State Senate approved the bill directing the California Air Resources Board to develop regulations to achieve "maximum feasible and cost-effective" reduction of greenhouse gases. The standards would take effect in 2006 and start with the 2009 model year. "[Bill to cut greenhouse gases idles in Assembly](#)," *San Francisco Chronicle*, May 15 2002.
- **Comprehensive energy policy update.** HR 4, as amended by the Senate and passed on April 25th, is still pending conference negotiations between the House and Senate. The Senate has selected conferees; the House has not. Reaching a compromise from the widely disparate Senate and House versions will be a difficult and long process. Latest reports indicate that conferees will try to begin meeting in June.
- **Multi-pollutant bill update.** Senator Jefford (I-VT), Chairman of the Senate Environment and Public Works Committee, postponed the scheduled May 23rd mark-up of S556, a 4 pollutant bill. Senator Smith (R-N.H.), ranking member of the Senate Environment and Public Works Committee, is currently drafting language for a 3 pollutant bill that incorporates the targets set forth by President Bush in the Clear Skies Initiative. For more information on the Clear Skies Initiative, see <http://www.epa.gov/clearskies/>.

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If you would like to know more about DOE's Carbon Sequestration R&D Program, please contact Scott Klara at NETL, [scott.klara@netl.doe.gov](mailto:scott.klara@netl.doe.gov)

[www.netl.doe.gov/coalpower/sequestration/](http://www.netl.doe.gov/coalpower/sequestration/)