

# THE CARBON SEQUESTRATION NEWSLETTER

<http://www.netl.doe.gov/coalpower/sequestration/>

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May 2003

## Sequestration in the News

**FutureGen RFI Announced.** The Department of Energy announced that it would accept comments from potential consortia members and interested parties regarding the implementation of FutureGen through June 16, 2003. For more information, contact Keith Miles ([miles@netl.doe.gov](mailto:miles@netl.doe.gov)) or visit one of the following sites: <http://www.netl.doe.gov/coalpower/sequestration/> (and click on FutureGen) or <http://a257.g.akamaitech.net/7/257/2422/14mar20010800/edocket.access.gpo.gov/2003/03-9704.htm>

**EPA Administrator Christine Todd Whitman to Speak at Second National Sequestration Conference.** Just announced, Christine Todd Whitman will be added to the list of distinguished speakers at the May 5-8 conference in Alexandria, Virginia. <http://www.carbonsq.com/>

**NETL in the news.** National Energy Technology Laboratory Director, Rita Bajura and Scott Klara, product manager for Carbon Sequestration, are quoted in this article on the topic of GHG emissions and what to do about them. "Reducing greenhouse gases," *Pittsburgh Tribune Review*, May 1, 2003, [http://www.pittsburghlive.com/x/tribune-review/business/s\\_132081.html](http://www.pittsburghlive.com/x/tribune-review/business/s_132081.html)

**Nine electric utilities and Wyoming coal companies joined FutureGen initiative.** Coal producers Peabody Energy, Kennecott Energy through its parent company Rio Tinto Group, RAG American Coal Holding Inc., electric utility PacifiCorp, American Electric Power, CONSOL Energy Inc, the North American Coal Corporation, Southern Co. and TXU are taking part in a group to discuss the technical design of a near zero-emission power plant and hydrogen production facility. After the design project, coordinated by Battelle, is agreed upon, location and a construction plan will be decided. "Coal firms join 'zero-emissions' effort," *Casper Star-Tribune*, April 29, 2003, <http://www.casperstartribune.net/articles/2003/04/29/news/wyoming/6dda4492fcb74ef6e3900ad34cc06b8.txt>

**Microbial gene sequencing to help carbon sequestration science.** The US Department of Energy, Office of Science, awarded the Institute for Biological Energy Alternatives (IBEA) \$9 million for genomic research on microbial communities aimed at developing methods to capture CO<sub>2</sub> from the atmosphere and produce hydrogen. The three-year grant adds to a \$3 million, three-year grant the IBEA already received from the DOE. IBEA scientists plan to determine the genetic sequences of all of the microorganisms occurring in the warm algae-filled waters of the Sargasso Sea. "Venter's Biological Energy Alternatives Institute Gets Additional \$9M from DOE" *GenomeWeb News*, April 24 2003, <http://www.genomeweb.com/articles/view-article.asp?Article=2003424145842> See also "Human Gene Expert to Take on Sargasso Sea," *Reuters*, UK.

**Climate Change Central newsletter features GHG technologies.** A discussion of clean coal and combined heat and power includes technology overviews. "Sparking a Less Carbon-Intensive Future - Greenhouse Gas Technologies," *C3 Views*, April 2003, [http://www.climatechangecentral.com/info\\_centre/C3Views/default.asp](http://www.climatechangecentral.com/info_centre/C3Views/default.asp)

**Major aluminum smelting company cuts emissions.** Alcoa reduced GHG emissions 22.5% from 1990 levels, according to the company's sustainability report. "Alcoa cuts emissions," *CSRwire*, April 22, 2003, <http://www.socialfunds.com/news/release.cgi/1776.html>

**United Technologies Corp. to join Climate Leaders.** Since 1997, UTC has lowered its GHG emissions by 15 percent, and is now joining the voluntary industry-government partnership. The EPA Climate Leaders program, now representing 22 companies, identifies environmental leaders and encourages adopting aggressive goals and strategies for curtailing GHG emissions at manufacturing and other facilities. "United technologies steps up global conservation efforts," *PR Newswire*, April 22, 2003, <http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/04-22-2003/0001930678&EDATE=>

**Ocean sequestration concerns and questions.** An interview with Patricio Bernal, Executive Secretary of UNESCO's International Oceanographic Commission covers the current state of ocean sequestration, as well as concerns, including pH change, deepwater injection, and iron fertilization. The Intergovernmental Oceanographic Commission of UNESCO (IOC) with the Scientific Committee on Oceanic Research (SCOR) have set up an Advisory Panel on ocean CO<sub>2</sub>. A major symposium on The Ocean in a High CO<sub>2</sub> World has recently been scheduled for March 2004. UNESCO, March 12, 2003, <http://www.unesco.org/science>

## Capture

**The Rocky Mountain Oilfield Testing Center may become the site of testing facility.** An ROMTC well technology testing facility would include research on carbon sequestration and marginal oil and gas well production. The Senate's energy bill provision, which is already included in the House version, would maintain federal funding for the facility. "Senate panel OKs new testing facility," *Casper Star Tribune*, WY, April 30, 2003, <http://www.casperstartribune.net/articles/2003/04/30/news/wyoming/0b9dd89159eb80322827e38acdd06d6b.txt>

## Sequestration in the News, Cont'd

### Geologic Storage

**Geosequestration in Australia.** An Australian geological survey conducted by the Australian Petroleum Co-operative Research Centre and Geoscience Australia identified 65 sites where CO<sub>2</sub> could be injected deep underground. The sites could safely store half the annual CO<sub>2</sub> emissions from stationary sources, and ultimate capacity could store 1,600 years of Australia's total emissions, according to the survey. The Petroleum Co-operative was renewed for 7 years with a \$22 M government grant, becoming the Co-operative Research Centre for GHG Technologies, or CO<sub>2</sub> CRC. "Underground sites may store GHG emissions," *Sydney Morning Herald* April 22, 2003, <http://www.smh.com.au/articles/2003/04/21/1050777215083.html>

**Opposing view: Australian geosequestration infeasible.** A report on Australia's GHG polluters has dismissed the option of underground storage of CO<sub>2</sub> emissions as not feasible on the basis of economics. "Report rejects CO<sub>2</sub> storage option," *Australian Broadcasting Company*, April 7, 2003, <http://www.abc.net.au/news/newsitems/s825945.htm>

**Prep infrastructure development for EOR.** Houston-based Anadarko Petroleum Corp. is replacing pipes and retooling wells at the Salt Creek oilfield to prepare for a \$200 million CO<sub>2</sub> enhanced oil recovery project. 30 million tons of CO<sub>2</sub> have been sequestered in the Anadarko project, according to the article. "Anadarko begins salt creek project," *Casper Star Tribune*, April 10, 2003, <http://www.casperstartribune.net/articles/2003/04/10/news/wyoming/8e4bb1469a59e690b9a1115fc55892ae.txt>

**Knowledge sharing on EOR and hydrogen.** INCO<sub>2</sub> presented experiences from the US that indicate CO<sub>2</sub> EOR could prolong production from Norway's oil fields in the North Sea. The CENS project (CO<sub>2</sub> for Enhanced oil recovery in the North Sea), owned by ELSAM, Denmark's largest producer of electrical power, and Kinder Morgan, a US energy company with experience in CO<sub>2</sub> transport, aims to prepare a CO<sub>2</sub> transport and injection infrastructure in the North Sea. The value of avoiding CO<sub>2</sub> emissions needs to be 20 - 25\$/ton, before CO<sub>2</sub> for EOR is financially sound, according to CENS. "More oil, less CO<sub>2</sub>," *Bellona*, April 1, 2003, <http://www.bellona.no/en/energy/hydrogen/29199.html>

### Terrestrial

**Continuous global measurements of Earth's carbon metabolism: net primary production.** Scientists are combining space-based measurements of plant properties collected by the NASA Moderate Resolution Imaging Spectroradiometer (MODIS) with data surface-based measurements, updating maps every 8 days. The new maps show that the highest mid-summer productivity rates are found at temperate latitudes, not at tropical latitudes. However tropical forests are more productive over a full year because of a longer growing season. Launched in December 1999 and May 2002, the Terra and Aqua satellites are the flagships of the Earth Observing System series of satellites. "NASA satellite measures Earth's carbon metabolism," *Space Flight Now*, April 28, 2003, <http://www.spaceflightnow.com/news/n0304/28carbon/>

**International science of forests and carbon sequestration.** A project at Biosphere Two joined a global network of testing sites measuring how much carbon forests can sequester. Some test sites show promising results: forests grown on arid land in Israel take up around 1.8 tons per hectare, close to the world average of 2.3 tons per hectare. CO<sub>2</sub> appears to help plants make more efficient use of their limited water supplies, and the average rate of plant fixing of carbon is going up by 0.5% a year, according to this article. "Carbon in the balance: fitting forests into climate change agreements," *Edie weekly summaries*, April 4, 2003, <http://www.edie.net/news/Archive/6845.cfm>

**Partnership to restore forest.** Texas Parks and Wildlife Department (TPWD), Reliant Energy, The Conservation Fund and Environmental Synergy Inc. (ESI), unveiled a carbon sequestration project in which planted trees on 580 acres in east Texas will capture an estimated 215,000 tons of CO<sub>2</sub> from the atmosphere over the next 70 years. Carbon credits will be retained by Reliant as part of the U.S. Department of Energy's Climate Challenge Program. "162000 trees to help remove carbon dioxide," *Houston Chronicle* April 7, 2003, <http://www.chron.com/cs/CDA/ssistory.mpl/metropolitan/1856705>

### Climate Change Feedback Loops Involving Sequestered GHGs

**Tropical rainforests release more CO<sub>2</sub> during warm years.** In findings published in the Proceedings of the National Academy of Sciences, scientists matched tree growth with local temperature readings and found growth was often stunted during the hottest years. During warm years, atmospheric gas samples revealed tropical regions as a whole also released more CO<sub>2</sub> than they absorbed. "Rainforests might speed up global warming," *UPI*, April 24, 2003, <http://www.upi.com/view.cfm?storyID=20030421-010931-6248r>

**Methane hydrates released at end of Ice Age.** Scientists at the Woods Hole Oceanographic Institution (WHOI) published a study in the April 4 issue of *Science* suggesting warmer waters trigger the release of deep-sea methane. California fossils from methane-consuming bacteria found in sediments deposited 70,000 to 12,000 years ago suggest that large amounts of methane were repeatedly released from the seafloor during warmer weather. An estimated 2 trillion to 8 trillion tons of methane are thought to be in under-sea clathrates. "Global warming could trigger more global warming – Via the sea," *Edie weekly summaries*, April 4, 2003, At a joint meeting of the American Geological Union, the European Geological Society and the European Union of Geosciences, scientists explained an increase in methane release at the end of the last ice age to be a combination of ocean methane hydrate release, due to ocean warming, and release from tropical wetlands and forests, formed as glaciers retreated. "Methane and climate change," *The Economist*, April 17, 2003.

### Trading and Policy

**Market solutions made in America.** An article in the *New York Times* discusses the beginning stages of a GHG emission trading system under the Kyoto Protocol based on American market solution ideas, without the involvement of the U.S. "U.S. Left Out of Emissions Trading," *The New York Times*, April 4, 2003, <http://www.nytimes.com/2003/04/10/business/worldbusiness/10CARB.html?ex=1051934400&en=410c404a6886ab47&ei=5070>

**Eastern seaboard regional GHG market.** NY Governor George Pataki asked fellow governors from Maine to Maryland to partner on a market-based emissions trading system to require power generators to reduce CO2 emissions. "New York Governor calls for regional climate change plan," *ENS*, April 29, 2003, <http://ens-news.com/ens/apr2003/2003-04-29-09.asp>

**Voluntary GHG confinement.** This article summarizes corporate actions to reduce CO2 emissions, including the DOE EIA GHG Registry, the Chicago Climate Exchange, and DOE's Climate VISION. "More U.S. companies launch climate change initiatives," *GreenBiz.com*, April 2, 2003, <http://www.greenbiz.com/>

**Water pollution and GHG emissions trading.** The emerging market in water pollution credits offers new opportunities to energy and industrial clients. Prebon Energy and WestWater Research will identify strategies to link GHG emissions trading with the development of water pollution credits. "Prebon Energy and Westwater Research collaborate," *Market Wire* April 10, 2003, [http://www.marketwire.com/mw/release\\_html\\_b1?release\\_id52753](http://www.marketwire.com/mw/release_html_b1?release_id52753)

**New Hampshire environmental groups coalesce.** The "Carbon Coalition" seeks to keep the issue of the Kyoto Protocol on the front burner. "Carbon copy coalition," *Tech Central Station*, April 24, 2003, <http://www.techcentralstation.com/1051/envirowrapper.jsp?PID=1051-450&CID=1051-042403E>

**New Zealand facilitates GHG trading.** The Government of New Zealand has made it easier for large emitters of GHGs to negotiate deals exempting them from the planned carbon tax. "Government opens up on carbon deals," *New Zealand Herald*, April 17, 2003, <http://www.nzherald.co.nz/storydisplay.cfm?storyID=3401580&thesecion=business&thesubsection=general>

### Events and Announcements

**NETL's Second National Conference on Carbon Sequestration.** "Developing and Validating the Technology Base to Reduce GHG Intensity" will be held May 5-8, 2003 in Alexandria, VA. The conference will focus on the innovation, science, and technological advances necessary to make carbon sequestration a practicable and commercially deployable technology in order to meet GHG intensity reduction goals. <http://www.carbonsq.com/>

**Two DOE Solicitations.** Carbon sequestration is mentioned in two broad procurement efforts: the DOE Small Business Innovation Research and the solicitation for grants in basic energy, biological and environmental sciences by the DOE Office of Science. <http://sbir.er.doe.gov/sbir>, and <http://e-center.doe.gov/>

**Call for papers: National meeting of the American Chemical Society sequestration session.** A technical session entitled "CO2 sequestration: advanced technologies for predicting and monitoring isolation performance," will be held September 7-11 at the ACS meeting in New York. Focus is on advanced modeling, monitoring, and experimental techniques in geologic, ocean, and terrestrial field projects. 150 word abstracts due May 11. <http://oasys.acs.org/acs/226nm/geoc/papers/index.cgi>

**Call for papers: EMA 7<sup>th</sup> Annual Fall Meeting.** The Emissions Marketing Association 7th Annual Fall Meeting & International Conference will be held September 21 - 23, 2003, in Miami, Florida. Topics to be considered for presentation include GHG Emissions Trading Programs, US GHG Policy, Inventory, Accounting, and Registry Issues, MM&V; International Cross Boundary Legal Issues, and Sequestration Projects Update. Abstracts due June 13, 2003. <http://www.emissions.org>

**EMA 7th Annual Spring Meeting.** "Maximizing the Value of Emissions Trading in Uncertain Times" will be held May 4-6, 2003 in Phoenix, Arizona, [www.emissions.org/conferences/springconference03/default.html](http://www.emissions.org/conferences/springconference03/default.html). The Emissions Marketing Association has arranged an introductory conference on emissions trading May 4, prior to the 7th Annual Spring Meeting, <http://www.emissions.org/et101.html>

**GHG Registries: The Building Blocks of Climate Policy** will be held May 4-6 in San Francisco. Hosted by California Climate Action Registry, IETA and BP, <http://www.climateregistry.org/>

**Petroleum Geologist Convention.** The next annual convention of the American Association of Petroleum Geologists (AAPG), entitled "Energy: Our Monumental Task" will be held May 11-14, 2003 in Salt Lake City, Utah. Session O-22 is entitled "Geological Sequestration of CO2". <http://aapg.confex.com/aapg/si2003/index.epl>

## Events and Announcements

**The 3<sup>rd</sup> Annual Emissions Trading Conference** will be held May 12-13 in London. [http://www.euromoneyenergy.com/event\\_programme.asp?eventid=ECK75&site=energy](http://www.euromoneyenergy.com/event_programme.asp?eventid=ECK75&site=energy)

**The Brussels Climate Change Conference** will be held May 20-21 in Brussels, Belgium. Arranged by CEPS and EU Conferences, <http://www.euconferences.com/fraclimate.htm>

**GW14 – 14<sup>th</sup> Global Warming International Conference & Expo** will be held May 27-30 May 2003, in Boston. Topics include energy and transportation, industry emissions, agricultural and forestry resources management, and the carbon budget. <http://www.globalwarming.net/gw14-overview.asp>

**International Conference on Regional Climate Change and Agriculture.** Arranged by the Indira Gandhi Agriculture University in Raipur, India on 5-7 June. For further information e-mail [asastri@yahoo.com](mailto:asastri@yahoo.com).

**Clean Air 2003.** The 7<sup>th</sup> International Conference on Energy for a Clean Environment will be held July 7-10, in Lisbon, Portugal. <http://navier.ist.utl.pt/cleanair/>

**CBI's Greenhouse Gas Trading Symposium** will be held June 19-20, Alexandria VA. <http://www.cbinet.com>

**A&WMA's 96th Annual Conference** As part of the Air & Waste Management Association annual meeting, held June 22-26, 2003 in San Diego, CA, a Critical Review on Separation and Capture of CO<sub>2</sub> from Large Stationary Sources and Sequestration in Geological Formations--Coalbeds and Saline Aquifers will be presented by Dr. Curt White, NETL's Carbon Sequestration Science Focus Area Leader. Critical Review, A&WMA, April 2003, <http://www.awma.org/ACE2003/tech-program/criticalreview.asp>

**The U.S. Climate Change Science Program (CCSP)** has scheduled June 25, 2003 for release of its revised Strategic Plan. CCSP received comments during the Climate Science Workshop attended by more than 1,300 climate specialists in December 2002. CCSP also received 270 sets of written public comments, including a CCSP-requested evaluation by the National Research Council (NRC), released in late February 2003. The revised CCSP Strategic Plan will guide U.S. effort to understand the nature and implications of changes in global and regional climate systems. <http://www.climatescience.gov>

**Meeting Kyoto Targets in the EU – Challenges for the Power Sector** will take place June 25-26 at the European Parliament in Brussels, Belgium. The conference is arranged by WWF. [http://www.panda.org/about\\_wwf/where\\_we\\_work/europe/what\\_we\\_do/policy\\_and\\_events/epo/index.cfm](http://www.panda.org/about_wwf/where_we_work/europe/what_we_do/policy_and_events/epo/index.cfm)

**The Monitoring, Evaluation, Reporting, Verification and Certification of GHG Emissions:** Energy-Efficiency Projects workshop will be held August 19, 2003 in Seattle, Washington. Registrants of the 2003 International Energy Program Evaluation Conference, held August 20, are invited to attend the workshop. Different methods for evaluating projects, with emphasis on the International Performance Measurement and Verification Protocol (IPMVP), reporting, verification and certification will be reviewed. Materials for this workshop have been developed over four years through the assistance of the U.S. EPA and U.AID. <http://www.IEPEC.org/>

**NARSTO MM&V technologies.** "North American Research Strategy for Tropospheric Ozone," a public/private partnership of government, utilities, industry, and academia entities throughout Mexico, the U.S., and Canada, is organizing a workshop on Innovative Methods for Emission-Inventory Development and Evaluation at the University of Texas, Austin; October 14-17, 2003. <http://www.cgenv.com/narsto/>

**The 12<sup>th</sup> International Conference on Coal Science** at the Cairns Convention Centre, Australia, November 2nd – 6<sup>th</sup> 2003 will cover global warming, GHG emissions, CO<sub>2</sub> mitigation and sequestration. The Australian Institute of Energy, the International Energy Agency & IEA Clean Coal Centre, <http://www.aie.org.au/iccs/>

**The American Institute of Chemical Engineers annual meeting.** The Environmental Division and the Catalysis and Reaction Engineering Division will sponsor a session entitled "Greenhouse Gas Sequestration Technology" during the 2003 Annual Meeting in San Francisco (Nov 16 - 21, 2003). AIChE, <http://www.aiche.org/annualapp/>

**Business and Emissions Trading call for papers.** The conference will take place November 12-14 in Wittenberg, Germany. It is organised by the Martin-Luther-University Halle-Wittenberg. Abstracts are due June 15. How does emission trading influence structures, processes and decision making within and between corporations is one are of focus. [http://www.wiwi.uni-halle.de/lui/bwl/umwelt/index.php?folder\\_default\\_netfolderID=11006](http://www.wiwi.uni-halle.de/lui/bwl/umwelt/index.php?folder_default_netfolderID=11006)

**Climate policy after 2012** will be held November 17 and 18 in Ghent, Belgium. Arranged by the Ghent University. For further information, e-mail: [johan.albrecht@rug.ac.be](mailto:johan.albrecht@rug.ac.be)

## Recent Publications

**New information posted on the NETL DOE Sequestration website Reference Shelf.** New Media releases on saline formations, the NETL CO<sub>2</sub> capture test facility, and an updated version of the [Carbon Sequestration Project Portfolio](#) [17MB]; new project fact sheets on appropriate technologies, terrestrial sequestration on abandoned mine lands, monitoring EOR, geosequestration in the Ohio River Valley and deep unmineable coalbeds, a commercial-scale field demo project, and a Glossary of Terms. NETL Carbon Sequestration Reference Shelf, April 2003, <http://www.netl.doe.gov/coalpower/sequestration/refshelf.html>

**Proceedings from the IPCC Workshop on Carbon Capture and Storage.** Summaries of the IPCC-sponsored Canadian government-hosted workshop of November 19-21, 2002, in Regina Canada: <http://www.climatepolicy.info/ipcc>

**The Nature Conservancy climate change mitigation technical documents.** With support from USAID, three TNC papers present cutting-edge research and analysis on permanence, leakage, and scale, in the land use, land-use change, and forestry (LULUCF) sector. The documents are entitled "Carbon Accounting, Trading and the Temporary Nature of Carbon Storage;" "Scale of Land Use, Land-Use Change and Forestry in Developing Countries for Climate Mitigation;" and "Understanding and Managing Leakage in Forest-Based Greenhouse Gas Mitigation Projects," TNC, April 2003, <http://nature.org/initiatives/climatechange/docs/>

**Presentations from Coal-Seq II Forum.** The Second International Forum on Geologic Sequestration of CO<sub>2</sub> in Deep, Unmineable Coalseams (Coal-Seq II), held March 6 & 7, 2003 in Washington D.C. [http://www.coal-seq.com/Forum\\_II.htm](http://www.coal-seq.com/Forum_II.htm)

**Submit comments on EPA's Draft Protocols for Climate Leaders.** EPA is in the process of finalizing several protocols for the cement sector, iron and steel production, and refrigeration and air conditioning units. Comments are accepted until August 2003. Climate Leaders Protocol Documents, EPA, April 2003, <http://www.epa.gov/climateleaders/draft.html>

**New information on the CCP website.** The CO<sub>2</sub> Capture Project (CCP), a joint project comprising eight leading international energy companies, has posted technology and methodology reports, and abstracts for 9 papers to be presented at the DOE May 2003 Second Sequestration Conference. <http://www.co2captureproject.org>

**Energy Policy Volume 31 issue 10, 2003.** Papers of interest included in this issue are: "Carbon emission and mitigation cost comparisons between fossil fuel, nuclear and renewable energy resources for electricity generation;" "Marketable emission permits with imperfect monitoring;" "Strategic choices: Swedish climate intervention policies and the forest industry's role in reducing CO<sub>2</sub> emissions." Also: "Global energy scenarios meeting stringent CO<sub>2</sub> constraints: cost-effective fuel choices in the transportation sector;" "Equity and carbon emission trading: a model analysis;" "Energy systems and the climate dilemma: reflecting the impact on CO<sub>2</sub> emissions by reconstructing regional energy systems." For further information on Energy Policy papers, see: <http://www.sciencedirect.com/science/journal/03014215>

**PowerSwitch! Initiative recommends U.S. electric utilities support binding limits on CO<sub>2</sub> emissions.** A new report entitled "The Path Towards Carbon Dioxide-Free Power: Switching to Clean Energy," from WWF finds that the U.S. power sector can cut CO<sub>2</sub> emissions nearly 60 percent by 2020 and reduce its dependency on fossil fuels by using available energy technologies and supporting innovative policies. "Power sector could cut CO<sub>2</sub> emissions 60 percent," ENS AmeriScan, April 2, 2003, <http://ens-news.com/ens/apr2003/2003-04-02-09.asp>

**EU hydrogen - sequestration linked in report.** A draft EU report on hydrogen states that successful carbon sequestration techniques would allow fossil hydrogen to be used on a large scale with limited GHG emissions. "EU readies first ideas on hydrogen fuel dream," *Planet Ark*, April 21, 2003, <http://www.planetark.org/dailynewsstory.cfm/newsid/20518/story.htm>

**The most recent issue of "GHG Market Trends"** is available. Grütter Consulting, April 2003, <http://www.ghgmarket.info/ghg/market.php>

**Motivate local communities to tackle global climate change.** A recent article studies four places to examine whether local places are capable of reducing the GHG emission that they produce, and how. "Making the global local: responding to climate change concerns from the ground up," *Environment* 45 issue 3, April 2003.

**Transportation and CO<sub>2</sub>.** The Energy research Centre of the Netherlands (ECN) published a report entitled "International CO<sub>2</sub> policy benchmark for the road transport sector: Results of a pilot study." The primary objective of the project is to benchmark a number of transport policy instruments reducing CO<sub>2</sub> emissions. Eleven European countries participated in and contributed to the project. CO<sub>2</sub> emission standards, eco-driving and highway speed limits are regarded as promising policy instruments. <http://www.ecn.nl/library/reports/2003e/c03001.html> or <ftp://ftp.ecn.nl/pub/www/library/report/2003/c03001.pdf>

## Recent Publications, Cont'd

**Great Lakes Region impacts from climate change.** The Ecological Society of America (ESA) and the Union of Concerned Scientists (UCS) released a report combining climate system models with 100 years of historical climate data for the Great Lakes region. The authors emphasize a three-pronged approach to minimizing impact: reduce GHG emissions, minimize human pressures on the environment, and adapt to a changing climate. "Confronting Climate Change in the Great Lakes Region: Impacts on Our Communities and Ecosystems" UCS and ESA, April 2003, <http://www.ucsusa.org/greatlakes/>

**JI and CDM procedures.** During 2001 and 2002 the European research consortium PROBACE carried out a research project on developing operational procedures for JI/CDM baseline determination and accounting of GHG emission reductions. "PROBACE: Final report," <http://www.northsea.nl/jiq/probase/>

**EPA eGRID2002 Version 2.0.** eGRID is EPA's database of fuel type and emissions, for electric power generation from 1996 to 2000. The new version divides the U.S. into 27 grid regions; includes mercury data for municipal solid waste facilities in 1999 and 2000; and provides improved methodology for estimating emissions from landfill methane and digester gas in 1999 and 2000. eGRID, EPA, April 24, 2003, <http://www.epa.gov/cleanenergy/egrid/>

**UK GHG trading scheme.** "A qualitative study of the direct entry UK emissions trading scheme," Enviro Consulting, April 2003, e-mail request for free report: [Guy.Turner@enviros.com](mailto:Guy.Turner@enviros.com)

**PIRG report on renewable energy.** U.S. Public Interest Research Group's report, "Generating Solutions: How Clean, Renewable Energy is Boosting Local Economies and Saving Consumers Money," examines renewable energy policy in 35 states. "U.S. renewable energy fueled by local efforts," *ENS*, April 17, 2003.

**Carbon transactions under the Kyoto Protocol.** This ERC report describes project characteristics of the first traceable 100 million tons of CO<sub>2</sub> equivalents intended for contracting under the project-based mechanisms of the Kyoto Protocol. "An overview of carbon transactions: General characteristics and specific peculiarities," Energy Research Centre of the Netherlands, April 2003, <http://www.ecn.nl/library/reports/2003/c03022.html>

**Climate change deleted from Senate Energy Bill in Committee.** The Senate energy bill moving through committee has been stripped of its climate-change provisions, moving the debate over global warming to the Senate floor in early May. The bill's Title XI - Climate Change creates a White House Office of Climate Change, charged with developing a strategic plan to contain greenhouse gas emissions was scrapped when Senate Energy and Natural Resources Committee Chairman Pete Domenici, R-NM, saw that it didn't have support to pass the committee. The House passed its version of an energy bill April 11. The bulk of the \$18.7 billion bill is devoted to subsidies and incentives to energy producers. "Global warming put to Senate floor," *The Washington Times*, April 16, 2003, <http://washingtontimes.com/national/20030416-51244156.htm>

## Legislative Activity

**Introduced April:** Global Change Research and Data Management Act of 2003, H.R. 1578 Udall (D-CO), <http://thomas.loc.gov/cgi-bin/query/z?c108:H.R.1578>:

Clean Air Planning Act of 2003, S.843 Carper (D-DE), <http://thomas.loc.gov/cgi-bin/query/z?c108:S.843>:

Department of Energy Catalysis R&D Act, Bingaman (D-NM), <http://thomas.loc.gov/cgi-bin/query/z?c108:S.873>:

**Introduced March:** National GHG Emissions Inventory Act of 2003, H.R. 1245 Olver (D-MA)

The Clean Coal Power Act of 2003, H.R. 1213 Whitfield (R-KY)

Coal Energy RD&D Act of 2003, H.R. 1269 Costello (D-IL)

Coal Energy RD&D Act of 2003, S.727 Byrd (D-WV)

Genomes to Life R&D Act, S.682, Domenici (R-NM)

**Introduced February:** Clean Power Act of 2003, S.366, Jeffords.

**Introduced January:** The Climate Stewardship Act of 2003, S.139, McCain and Lieberman.

National GHG Emissions Inventory and Registry Act of 2003, S.194, Corzine, Lieberman, Jeffords.

The Global Climate Security Act of 2003, S.17, Daschle.

*This newsletter is produced by the National Energy Technology Laboratory and presents summaries of significant recent events related to carbon sequestration. If you'd like to join the e-mail distribution list, email [majordomo@list-manager.netl.doe.gov](mailto:majordomo@list-manager.netl.doe.gov) with "subscribe sequestration" in the body of the message. We encourage you to pass this along to interested persons. Contact: Scott Klara, [klara@netl.doe.gov](mailto:klara@netl.doe.gov).*