

THE CARBON SEQUESTRATION NEWSLETTER

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

November 2004

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

Sequestration in the News

Christian Science Monitor, "A Greenhouse Gas Goes Underground" highlights the CO₂ EOR project at Weyburn. "We have been able to show that you can safely capture carbon dioxide that would otherwise go back into the atmosphere," said Ben Rostron, from the University of Alberta. "Everything we've done has shown us this is a good place to store carbon dioxide." October 28, 2004, <http://www.csmonitor.com/2004/1028/p14s01-sten.html>.

Point Carbon, "BP Tries Geo-Sequestration in Algeria." BP has started an "industrial-scale" test of geo-sequestration with Algeria's national oil company. BP and Sonatrach are extracting natural gas from an Algerian field that also contains 10 percent carbon dioxide. One million tons per year of carbon dioxide is separated from the natural gas and re-injected into an underground reservoir. October 28, 2004, <http://www.pointcarbon.com/article.php?articleID=5070&categoryID=147>.

Petroleum Economist, "No Longer a Dirty Word" provides an overview of clean coal technology development worldwide. Speculates on a resurgence of coal liquid fuels in light of sustained high crude oil prices. "Carbon capture is also easier from an IGCC plant than from pulverized-coal plants. With seven large-scale, coal-gasification projects operating in the US already, dozens more in development and numerous initiatives in operation worldwide, there is a solid platform on which to build." October 11, 2004, <http://www.wbcsd.org/plugins/DocSearch/details.asp?type=DocDet&ObjectId=10539>.

Salon, "Coal: Clean, green power machine?" With oil and natural gas prices up, the author has noticed coal advocacy commercials recently appearing on television. Article sets forth coal gasification as a way to increase power plant efficiency from 30 to 60 percent and cites criticisms of CO₂ geosequestration offered by Greenpeace and the Union of Concerned Scientists. October 5, 2004, <http://www.wbcsd.org/plugins/DocSearch/details.asp?type=DocDet&ObjectId=10391>.

National Public Radio, "U.S. Eyes Burying CO₂ to Battle Climate Change." NPR's October 4th "Morning Edition" describes CO₂ geosequestration and interviews several researchers at the Rocky Mountain Oilfield Testing Center in Wyoming. Audio of the program is available at <http://www.npr.org/templates/story/story.php?storyId=3917655>.

Summit Daily News, "Keystone Center pioneers climate change education." The Keystone Center, in partnership with DOE, has developed a hands-on, interdisciplinary curriculum on global climate change. The curriculum, aimed at middle school students, includes role-playing, team problem-solving and lab experiments. Said Summit Middle School science teacher Kay Kirkland, "We can make kids aware that what we do affects everyone in the world. That was really big for us - to get our kids conscious of how they use energy." October 13, 2004, <http://www.summitdaily.com/article/20041013/NEWS/110130018/?rs=2>.

Voice of America, "Texas Scientists Work to Reduce Carbon Dioxide Air Pollution" highlights the Frio geosequestration field test near Dayton, Texas. Said lead researcher, Susan Hovorka, "There are a lot of things that can hold gas underground. We are underneath the Anahuac shale, which should be the best seal in the world. So the CO₂ should stay underground for thousands of years. No problem." October 6, 2004, <http://www1.voanews.com/article.cfm?objectid=C69F2A89-53B4-46AB-B5DCA1943CC95945&title=Texas%20Scientists%20Work%20to%20Reduce%20Carbon%20Dioxide%20Air%20Pollution#> (audio available). Also see, "Greenhouse gas goes underground," *Karala News* (India), October, 5, 2004, <http://www.keralanext.com/news/index.asp?id=53036>.

Billings Gazette, "CO₂ project could stop Wyoming oil production slide, oil exec says" describes a commercial CO₂ EOR project at Anadarko Petroleum's Salt Creek Oil Field, about 40 miles north of Casper Wyoming. Anadarko will be supplied CO₂ via pipeline from Exxon/Mobil's Shute Creek Gas Processing Plant in southwestern Wyoming. October 19, 2004, <http://www.billingsgazette.com/index.php?id=1&display=rednews/2004/10/19/build/wyoming/38-co2-oil.inc>.

Billings Gazette, "Conference looks at low-grade coal." "We need Western coal," said Rita Bajura during her remarks to open the Western Fuels Symposium. The article states, "Low-rank coals also face major challenges, from environmental concerns with mercury and fine particulate emissions to the application of more efficient combustion and gasification technologies." October 12, 2004, <http://www.billingsgazette.com/index.php?tl=1&display=rednews/2004/10/12/build/local/34-coal-conf.inc>.

Sequestration in the News, Cont'd

Wall Street Journal, "Climate Control: As Planet Heats Up, Scientists Plot Innovative Fixes; Appetite for Oil, Coal Drives Search for 'Painless Cure' to Global-Warming Ills; Storing Carbon Inside a Rock." Article debates the impact the Kyoto Protocol will have on atmospheric concentrations of carbon dioxide. Highlights research into technologies that would allow the world to continue burning fossil fuels without exacerbating global warming. Describes Klaus Lackner's idea to use wind-powered machines to remove carbon dioxide directly from the air and store it in rocks or in the earth. October 22, 2004.

Announcements

Funding Opportunity. The Department of Energy has issued the annual Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Program Solicitations. Grant applications for FY2005 in 49 technical disciplines are now being accepted. Technical topics that may be of interest include: (#7) Biological Solutions and Technologies for Reducing Atmospheric Carbon Dioxide; (#8) Carbon Cycle Measurements of the Atmosphere and the Biosphere; and (#9) Capture, Sequestration, and Utilization of Carbon. Funding for feasibility studies of up to \$100,000 over nine months will be awarded to approximately 200 applicants during Phase I. About one-third to one-half will continue into Phase II, which is the principal research and development effort, funded at up to \$750,000 over a two-year period. For more information and to obtain electronic copies of the current DOE SBIR and STTR solicitations, please visit <http://sbir.er.doe.gov/sbir>. The due date for receipt of grant applications is December 13, 2004.

Prize for innovation in the use of CO₂. CANOPY Publishing announced The CANOPY Prize for innovation in the use of carbon dioxide. The prize, open to the public and independent researchers, seeks an innovative and practical use for CO₂ that will open worldwide markets for sequestered CO₂ and limit Global Warming. The \$1,000 prize will be announced on Earth Day, 2006. All submissions must be delivered to CANOPY Publishing by August 30, 2005. For additional information visit www.canopypublishing.com. "Public Invited to Enter Environmental 'Canopy Prize' Competition and Win \$1000," *Elites TV*, <http://www.elitestv.com/pub/2004/Oct/EEN416d803a78a70.html>.

NETL Outlines Strategy for Environmental Review of CO₂ Sequestration. The Public Scoping Document for the Carbon Sequestration Program's programmatic EIS has been posted on the NETL website at <http://www.netl.doe.gov/coal/Carbon%20Sequestration/eis/documents.html>.

DOE presents geologic sequestration efforts at GWPC Annual Forum. The Groundwater Protection Council's (GWPC) October 2004 Quarterly Report highlights the GWPC Annual Forum, which took place September 19-22 in Charleston, SC. The Annual Forum was attended by 170 representatives of state and federal agencies, associations, industry, and other concerned parties. A link to a presentation entitled, "US Department of Energy's Ongoing Research and Pilot Test Efforts to Sequester CO₂ in Targeted Geological Formations," can be found at <http://www.gwpc.org/QR/October-2004.htm> (click on "Charles Bryer" under Presentations).

"Department of Energy Funds 26th Year of University Coal Grants." The Department of Energy's University Coal Research Program will make available nearly \$3 million for projects that explore ways to use coal while protecting the environment. Oxygen combustion with CO₂ recycling is one area of work called out in the program announcement. *DOE Press Release*, October 27, 2004, http://www.doe.gov/engine/content.do?PUBLIC_ID=16825&BT_CODE=PR_PRESS_RELEASES&TT_CODE=PRESSRELEASE.

US Sponsors Project to Cut GHG Emissions in New Mexico. The US Department of Energy will provide more than \$4.1 million to New Mexico for five new research and development projects that aim to strengthen energy security, reduce greenhouse gas emissions, and protect human health. One of the projects will examine the health affects of fine particulates emitted from coal-fired power plants, while four will promote enhanced oil and gas recovery. "Department of Energy Grants New Mexico \$4.1 Million for Research and Development Projects," *DOE Press Release*, October 8, 2004, http://www.doe.gov/engine/content.do?PUBLIC_ID=16742&BT_CODE=PR_PRESSRELEASES&TT_CODE=PRESSRELEASE.

Science

CO₂ concentrations in the atmosphere observed to be increasing at a more rapid rate. In 2002 and 2003, the concentration of GHGs in the atmosphere increased by 1.08 ppm and 2.54 ppm respectively. For ten years prior the rate of increase had averaged 1.5 ppm. The increased rate could be an anomaly, perhaps due to increased forest fires in the Northern Hemisphere. But it has scientists wondering if the natural CO₂ sinks (forests and oceans) that currently absorb roughly half of net anthropogenic CO₂ emissions are becoming saturated. Other scientists worry that "positive feedback loops" caused by increased global temperature are the cause. "Climate fear as carbon levels soar," *The Guardian*, October 11, 2004, http://grist.org/cgi-bin/forward.pl?forward_id=3298.

Study challenges whether tree rings reveal past climate. The Earth's temperature may have fluctuated more wildly during the past 1,000 years than previously thought, according to a new study that challenges how researchers use tree rings and corals to give us a picture of the Earth's past. If true, the study suggests that recent warming might not be as unique as was thought previously, and might partly be due to natural temperature cycles, rather than humans spewing carbon dioxide into the atmosphere. "Past climate change questioned," *Nature*, September 30, 2004, <http://www.nature.com/news/2004/040927/full/040927-16.html> (subscription required).

"Plants' role in global warming reevaluated." Researchers from McGill University, Montreal have studied the responses of several growth lines of the alga *Chlamydomonas reinhardtii* grown under ambient and elevated CO₂ concentrations, to high doses of CO₂. Instead of observing an amplified growth rate and increased biomass, no discernable difference was determined between the cell lines. If the researchers' theory is correct, the net result of rising atmospheric carbon levels for the photosynthetic microorganisms will be very little. *Felix*, October 7, 2004, <http://www.felixonline.co.uk/2002-04/article.php?aid=1698>.

Policy

Russian House ratifies Kyoto. Russia's upper and lower houses of parliament ratified the Kyoto Protocol and sent it to President Vladimir Putin for the final stamp of approval it needs before it can be submitted to the UN. "Russia's Lower Parliament House OKs Kyoto," *ABC News*, October 22, 2004, <http://abcnews.go.com/International/wireStory?id=188914>, and "Russian Federation House Ratifies Kyoto," *Point Carbon*, October 27, 2004, <http://www.pointcarbon.com/article.php?articleID=5029&categoryID=147>.

Ford to improve fuel efficiency by 80% by 2030. Top executives at the Ford Motor Company have privately endorsed an aggressive goal to rein in global warming emissions from the automaker's vehicles. The goal was laid out by the company's chairman, William Ford Jr., who sees environmental initiatives as a critical part of the company's business strategy and is concerned about Toyota's aggressive strategy to lead in fuel-efficient technologies as regulations around the world tighten. "Ford becomes latest company to tackle global warming emissions," *Taipei Times*, October 3, 2004, <http://www.taipeitimes.com/News/biz/archives/2004/10/03/2003205406>.

US Power Companies Expect CO₂ Restrictions. A survey of US electric generating companies shows that nearly 60 percent of the respondents believe that Congress will enact mandatory limits on carbon dioxide emissions within the next ten years. *Point Carbon*, October 26, 2004, <http://www.pointcarbon.com/article.php?articleID=4996&categoryID=147>.

California adopts forest-saving plan. California became the first state to reward landowners for leaving forests standing to help control global warming. "In California alone, forest loss is equivalent to 2.5 million new cars going on the roads every year," said Laurie Wayburn, president of the Pacific Forest Trust who helped develop the program. "State adopts forest-saving plan," *The Register-Guard*, October 24, 2004, <http://www.registerguard.com/news/2004/10/24/d6.wst.forestwarming.1024.html>.

Geology

"CO₂ sequestration in Ontario, Canada. Part II: cost estimation." This paper evaluates the capital and operating cost for CO₂ sequestration in southwestern Ontario from a 500 megawatt coal fired power plant. The main focus is on the cost of sequestration (CO₂ transport and injection), and thus, the cost of capturing and pressurizing the CO₂ from the plant flue gas is not considered here. Many uncertainties are associated with cost estimation; several are identified and their impacts are

considered in this paper. The estimated cost of sequestration of 14,000 ton/day of CO₂ at approximately 110 bar in southwestern Ontario is between 7.5 and 14 US\$/ton of CO₂ stored. *Energy Conversion and Management*, 45 (2004) 3207-3217, <http://www.sciencedirect.com/science/journal/01968904> (subscription required).

"Increasing CO₂ storage in oil recovery." This paper contains examples which demonstrate and calculate the different mechanisms controlling the displacement behavior of CO₂ sequestration schemes, the interaction between flow and phase equilibrium, and how proper design of the injection gas composition and well completion are required to co-optimize oil production and CO₂ storage. *Energy Conversion and Management*, 46 (2005) 293-311, <http://www.sciencedirect.com/science/journal/01968904> (subscription required).

Ocean

More on acid oceans. Article provides a summary of ocean acidification and its effect on marine life. "Oceans to acid," *The Christian Science Monitor*, September 9, 2004, <http://www.csmonitor.com/2004/0909/p13s01-sten.html>.

Terrestrial

"Forest CO₂ finding surprises soil scientists." Elizabeth Sulzman, a soil scientist at Oregon State University, discovered that adding additional organic matter to Oregon's forest soils may actually increase rather than hinder the release of carbon dioxide into the atmosphere. Sulzman has shown that exposing forest soils to twice the normal amount of organic matter increased soil carbon releases by 34 percent more than expected. *Bend.com*, October 6, 2004, http://www.bend.com/news/ar_view%5E3Far_id%5E3D18448.htm#no-hash.

"Enhancement of Carbon Sequestration in US Soils." In the October 2004 issue of *BioScience*, a group of researchers led by Wilfred M. Post of the Oak Ridge National Laboratory described an approach to assessing "promising" techniques for mitigating global warming caused by the greenhouse effect. "Potential for enhanced sequestration of carbon in soils supports evaluations," *EurekAlert*, September 30, 2004, http://www.eurekalert.org/pub_releases/2004-09/aio-b-pfe093004.php.

Trading

"Carbon trading in Europe triples since Russian move on Kyoto." The amount of carbon dioxide being traded in Europe has almost tripled since Russia said it would ratify the Kyoto protocol. About 670,000 tons of carbon emissions were traded in the first week of October, compared with the record one million tons in September. Early this year, fewer than 50,000 tons were traded a month. *Financial Times*, October 12, 2004, <http://www.sustain-online.org/plugins/DocSearch/details.asp?MenuId=1&ClickMenu=&doOpen=1&type=DocDet&ObjectId=MTA1MzU>.

First Public Transaction of CERs in EU. CO2e.com facilitated the first legally binding purchase of Clean Development Mechanism (CDM) Certified Emission Reductions (CERs) by a European company. The CERs have been bought from Brazil for use within the European Union Emission Trading Scheme (EU ETS). The CERs will be generated from renewable energy, using sugarcane waste residue as a fuel for electricity cogeneration. *CO2e.com Press Release*, October 11, 2004, <http://www.co2e.com>.

"Green Mountain Power Joins Chicago Climate Exchange." Green Mountain Power became the first electric utility in the northeast to join the CCX. Green Mountain Power is committed to voluntarily reduce greenhouse gas emissions by four percent below its 1998-2001 baseline average by 2006. *Press Release*, October 7, 2004, <http://phx.corporate-ir.net/phoenix.zhtml?c=78917&p=irol-newsArticle&ID=627808&highlight>.

"Money to Be Made In Carbon Trading." This article discusses carbon emissions trading and claims it is "the new way to make money from environmental restrictions." Capital markets can save the planet from global warming and earn billions for financial institutions at the same time. *The Hindu*, October 17, 2004, <http://www.wbcsd.org/plugins/DocSearch/details.asp?type=DocDet&ObjectId=10673>.

Events

November 3-5, 2004, **Climate Change and Business**, Auckland, New Zealand. Seven partner organizations are putting together a conference on the business opportunities arising from climate change. For further information, see: <http://www.climateandbusiness.com/>.

November 7-12, 2004, **American Institute of Chemical Engineers (AIChE) Annual Meeting**, Austin, TX. Session 09005, Greenhouse Gas Sequestration Technology will include (1) separation and capture, (2) transport, and/or (3) long-term sequestration (geologic, terrestrial, etc.) of greenhouse gases. For further information see: <http://www.iche.org/annualapp>.

November 10-11, 2004, **The Successful Commercialization of Global Coalbed and Coalmine Methane Projects**, London, UK. This event will provide content that will respond to coalbed and coalmine methane lifecycle development. It will contain several GHG market relevant sessions. For more information, see: http://www.thecwcgroup.com/conf_detail_home.asp?FP=1&CID=74.

November 15-17, 2004, **The first ministerial meeting of the Methane to Markets International Partnership**, The Mayflower Hotel, Washington, DC. Those interested in methane recapture and use projects are highly encouraged to attend and participate. For additional information about the Partnership and to register for the meeting on-line please visit <http://www.methanetomarkets.org>.

November 17, 2004, **Business and Carbon Sequestration: Realizing the Potential for Bio and Geo Sequestration in Australia**, Melbourne Business School, Australia. This seminar will focus on current and prospective developments in carbon sequestration aimed at realizing the vast potential of these technologies. For further information and registration go to the AETF website www.aetf.net.au and click on Events.

November 17, 2004, **CO₂ Capture and Sequestration (CCS) in Future International R&D Programs**, Vienna, Austria. The goal of this workshop is to initiate a discussion concerning the role of CCS in future R&D programs in general, and to present realized (and/or planned) projects. Special focus will also be given to the challenges associated with the deployment of CCS technologies (i.e. safety aspects and long-term monitoring) and to the economic implementation in competitive markets. For additional information visit http://www.eva.ac.at/service/veranst/sequest_co2.htm.

November 30, 2004, **Lunch Discussion Series - "Global Warming: The Puzzle of the Missing Carbon Dioxide,"** Marion Koshland Science Museum, Washington, DC. Visitors may bring their own lunch. Light refreshments served; lunch not provided. Please RSVP for this event by emailing ksm@nas.edu, calling 202-334-1201 or visiting the museum lobby. For more information visit <http://www.koshland-science-museum.org/events/upcomingevent.jsp?id=80>.

December 7-10, 2004, **The 2004 CO₂ Conference and EOR Carbon Management Workshop**, Midland, TX. The 10th Annual CO₂ Flooding Conference focuses on the use of carbon dioxide for enhanced oil recovery (EOR). Theme sessions will be offered during the conference that capitalize on the 32 year history of CO₂ injection in the Permian Basin. The 2nd Annual EOR Carbon Management Workshop has the distinct purpose of educating those interested in CO₂ geologic sequestration about crosscutting technologies and experience with EOR. For more information and to register, visit http://www.spe-pb.org/co2_conference/index.asp.

January 13-14, 2005, **Climate Change Risks & Opportunities: Learning from the Leaders**, New York, NY. The conference will be divided into three blocks: Expert Briefings on the scientific basis for climate change mitigation and emerging policy frameworks; Corporate Spotlight on the business case for action on climate change and how leading companies have responded; and Interactive Workshops with industry leaders and policymakers to assist companies with integrating climate change into their strategic planning. Contact the Center for Economic and Environmental Partnership, Inc. in New York (Robyn Stewart, robyn@ceepinc.org, +1 518 432 6400) with any questions you might have.

January 16-20, 2005, **Chapman Conference on the Science and Technology of Carbon Sequestration**, Bahia Resort Hotel, San Diego, CA. The goal of this conference is to bring together scientists, engineers, and others who study long-term sequestration of carbon as a way of reducing potential global warming. For more information see <http://www.agu.org/meetings/cc05acall.html>.

Events, Cont'd

June 19-22, 2005, **CALL FOR PAPERS, 2005 American Association of Petroleum Geologists Annual Convention**, Calgary, Canada. The purpose of this combined oral and poster session is to bring together researchers active in the field of CO₂ and acid gas injection in oil and gas reservoirs, coal beds and deep saline aquifers, whether for EOR, ECBM or sequestration, to present current operations, field and laboratory experiments, and integrated studies for the evaluation of sequestration sites and the long-term fate of the injected gases. For more information about the meeting and submission of abstracts please visit <http://www.aapg.org/calgary/technical/index.cfm>. Please note the deadline for abstract submittal is November 12, 2004.

Recent Publications

New Factsheets Posted on NETL website. Two new factsheets have been posted on the Reference Shelf: "Climate Change Curriculum," http://www.netl.doe.gov/coal/Carbon%20Sequestration/pubs/fact_sheets/NETLcurriculumfactsheet.pdf. "Hybrid Membranes for CO₂ Removal," <http://www.netl.doe.gov/publications/factsheets/project/Proj309.pdf>.

New Paper Posted on NETL website. A paper entitled "GEO-SEQ Best Practices Manual Geologic Carbon Dioxide Sequestration: Site Evaluation to Implementation" has been posted in the Resources area under Accounting Protocols, available at http://www.netl.doe.gov/coal/Carbon%20Sequestration/pubs/GEO-SEQ_BestPract_Rev1-1.pdf.

"Consumer lifestyle approach to US energy use and the related CO₂ emissions." Historically, a sectoral approach has shaped the way we frame and analyze issues of energy conservation and CO₂ mitigation. This paper proposes an alternative paradigm, called the Consumer Lifestyle Approach (CLA), to explore the relationship between consumer activities and environmental impacts in the US. The study shows that more than 80% of the energy used and the CO₂ emitted in the US are a consequence of consumer demands and the economic activities to support these demands. Direct influences due to consumer activities (home energy use and personal travel) are 4% of the US GDP, but account for 28% and 41% of US energy use and CO₂ emissions, respectively. *Energy Policy* 33 (2005) 197-208, <http://www.sciencedirect.com/science/journal/03014215> (subscription required).

"An Effective Approach to Climate Change." Eileen Claussen, president of the Pew Center on Global Change, wrote in *Science's* October 29th Policy Forum, "We need far more vigorous effort to promote energy efficient technologies; to prepare for the hydrogen economy; to develop affordable carbon capture and sequestration technologies; and to spur growth of renewable energy, biofuels, and coal-bed methane projects." *Science*, October 29, 2004, <http://www.science.com> (subscription required).

"A healthy reduction in oil consumption and carbon emissions." Article concludes that gasoline demand and CO₂ emissions in the US could be reduced by 35% and 11%, respectively, if obese and overweight conditions were eliminated from the adult population through the use of walking or biking for transportation. *Energy Policy* 33 (January 2005): 1-4, <http://www.sciencedirect.com/science/journal/03014215> (subscription required).

Cutting Greenhouse Gases Makes Financial Sense Says New Report. A new report, released by The Climate Group, shows that public and private sector organizations have managed to achieve significant reductions of greenhouse gases and increase profits as a result. The report, "Carbon Down, Profits Up," is available for download at <http://www.theclimategroup.org/index.php?pid=370>.

"A Climate of Innovation: Northeast business action to reduce greenhouse gases." This report reviews corporate greenhouse-gas emissions management based on the experiences of nine large corporations from various economic sectors. The study concludes that "proactive work" by companies to measure emissions and minimize the costs of coming rules could be much less expensive than "reacting to events at a later date." The report can be downloaded at http://climate.wri.org/pubs_description.cfm?PubID=4031.

"Exergy analysis of a gas-turbine combined-cycle power plant with precombustion CO₂ capture." Natural gas was reformed in an auto-thermal reformer, and the CO₂ was separated before the hydrogen-rich fuel was used in a conventional combined-cycle process. The main purpose of the study was to investigate the integration of the reforming process and the combined cycle. *Energy*, Volume 30, Issue 1, January 2005, Pages 5-39, <http://www.sciencedirect.com/science/journal/03605442> (subscription required).

Legislative Activity

Energy-Related Tax Credits. Although comprehensive energy legislation is still pending in Congress, the House and Senate did agree on an income tax bill, which includes a limited number of energy-related tax incentives. For example, H.R. 1308 includes an extension of the tax credit for wind energy, which expired at the end of 2003, as well as some tax incentive provisions for biomass, electricity, and alternative fuel and electric vehicles.

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 with "subscribe sequestration" in the body of the message. We encourage you to pass this along to interested persons. Contacts: Scott Klara, scott.klara@netl.doe.gov or Sarah Forbes, sarah.forbes@netl.doe.gov.