



# UNITED Carbon Sequestration Council STATES

September 19, 2010

## Sequestration News

*In general, since the last issue of **Sequestration News**, things have been quiet on the Congressional front (at least in terms of legislation). A broad climate bill appears dead for 2010. Energy legislation may not be considered in the month preceding adjournment, but could be addressed in a lame duck session following the elections, according to a spokesman for Senator Reid.*

*Senators Conrad and Hatch have introduced a bill to provide financial incentives for improving power plant efficiency, for installing CCS on up to 20 energy projects (including power plants and CTL and CT-SNG facilities), and for CO<sub>2</sub> storage.*

*The Carnegie Institute of Science (not CMU) has published an analysis in **Science** concluding that CO<sub>2</sub> emissions from new sources, not existing sources, dominate the climate picture and that therefore the focus of climate action should be on new sources, not existing sources. Also, a UK "Thinkpiece" has advocated a government authority to address transport and offshore storage of CO<sub>2</sub>.*

*While relatively quiet in Congress, things have been heating up on the regulatory front. Three environmental groups have been pressing EPA to commit by next week to CO<sub>2</sub> New Source Performance Standards (NSPS) in March 2011, noting that litigation was their only alternative if EPA declined.*

*It is instructive to take note of non Green House Gas (non-GHG) regulatory actions going on at EPA. One development of interest is that over a hundred Congressmen have asked EPA to back off on the Hazardous Air Pollutants (HAPs) rule for industrial boilers (which may serve as a preview of the HAPs rule for utilities next Spring). Concerns and studies have been appearing regarding pending EPA rules on traditional pollutants and GHGs, but it's not clear what impact this will have. Also, a number of Senators have publicly criticized EPA's proposed revision of the ozone standards. One manufacturing group has estimated that EPA's proposed ozone rule could cost \$7 trillion. It appears that some in Congress may be concerned about possible negative effects the cost of regulations may have on employment.*

## Climate Legislation

Climate or energy legislation is not likely to be a priority issue in the returning Congress (which returned on September 13), with just under 4 weeks of activity before the targeted adjournment on October 8 (House). *Greenwire* (September 7) reported that a spokesman for Senate Majority Leader Reid (D-NV) stated that energy legislation, including a possible Renewable Energy Standard (RES), “may have to wait for a lame duck session.” It is unclear how this decision might impact Senator Rockefeller (D-WV), who had reportedly reached agreement with Senator Reid to consider, in the context of a Senate energy bill, his proposal to delay EPA regulatory action on stationary source GHG emitters for two years. *E&E NewsPM* (September 14) reported that Senator Kerry has stated that a broad climate proposal is off the table for 2011, and that Senator Reid opined that even a utility-only bill would have no chance.

On August 5, Senators Conrad (D-ND) & Hatch (R-UT) introduced legislation (S. 3714) to provide a 30% investment tax credit for up to 20 coal facilities with CCS. In addition to power plants, coal-to-liquids and coal-to-SNG facilities with CCS would also be eligible if they co-gasified biomass resulting in no more than half the life-cycle GHG emissions of traditional sources. The bill would also amend the “Section 45Q” production tax credit for CO<sub>2</sub> storage by making it available for the first 10 years of a CCS unit’s operation. The bill also provided accelerated depreciation for equipment installed to improve the efficiency of an existing coal-fired power plant.

<http://conrad.senate.gov/pressroom/record.cfm?id=327012&>

## EPA and CCS

Senator Murkowski is reportedly seeking to add a rider (prohibiting EPA from pursuing climate regulation absent further authorization from Congress) to EPA’s appropriation bill. But Senator Feinstein, Chairwoman of the Interior and Environmental Appropriations Subcommittee appears to have negated that effort by asking the Appropriations Committee chairman (Senator Inouye) to delay the markup of EPA’s budget. Ultimately, EPA’s budget could be rolled into an omnibus appropriation bill for consideration after the Fall elections. The other approach (Senator Rockefeller’s 2-year moratorium to be added to an energy authorization bill) also appears to be delayed until post-election. Either approach would have to be approved by the President to take force, since moratorium forces appear to lack the votes to override a veto.

Ohio Governor Strickland took a different tact in opposing the EPA GHG rules. Rather than petitioning the court, he conveyed his concerns to the Ohio congressional delegation and asked them to take action. <http://governor.ohio.gov/Default.aspx?tabid=1787>

On August 2, the Chairman of the Texas CEQ and the Attorney General of Texas wrote EPA Administrator Jackson regarding GHG regulation. The sharply worded letter stated that “Texas has neither the authority nor the intention of interpreting, ignoring, or amending its laws in order to compel the permitting of greenhouse gas emissions.” The letter basically challenges EPA’s conclusion that regulation of GHGs from vehicles must trigger requirements for permitting GHGs from major stationary sources, and argues that Texas is precluded from interpreting its laws and regulations in the way EPA interpreted its rules. On September 15, Texas formally petitioned the DC Circuit Court of Appeals to stay implementation of the Endangerment Finding, the Light-Duty Vehicle tailpipe rule, and the “Timing Rule” (explaining the rationale for beginning stationary source GHG New Source Review on January 2, 2010).

On August 20, the Sierra Club, NRDC, and EDF wrote to EPA Administrator Jackson and asked her to agree, by September 15, “to include greenhouse gases in its upcoming NSPS and to coordinate these measures with the forthcoming MACT rulemaking [hazardous pollutants] for utility boilers.” The letter concluded, “Barring agreement by September 15<sup>th</sup>, our remaining recourse will need to be seeking a court order compelling EPA action on the 2007 remand order [relating to regulating GHGs under NSPS].” On August 2, 106 Representatives wrote EPA Administrator Jackson expressing concern over EPA’s proposed rule for hazardous air pollutants from industrial boilers (Boiler MACT rule). Many of the principles and legal arguments used by EPA in the current rule are expected to be seen again next spring when EPA proposes a similar rule for coal-fired power plants.

The Manufacturers Alliance (MAPI) expanded on a NERA Economic Consulting assessment of the economic impact of EPA’s proposed ozone standards on 11 states to make an analogous estimate for the entire US. In January, EPA proposed reducing the current standard to somewhere between 60-70ppm. MAPI’s September 2010 report estimates that a 60 ppb standard would cost \$1 trillion per year between 2020 and 2030, or a present value of \$7 trillion in 2010 dollars. They projected that compliance would result in 7 million jobs lost, or 4.3% of the 2020 labor force.

<http://www.mapi.net/MediaCenter/news/Lists/Posts/Post.aspx?List=833d2c2b-15c0-4864-8617-cbb41d4ca3a5&ID=189>

### **Circuit Court Action on GHGs**

Last year, the 2<sup>nd</sup> US Circuit Court of Appeals ruled in *American Electric Power v. Connecticut* that states could sue major emitters of GHGs for their contribution to climate change under “nuisance” law. The lower court case will now proceed on its merits, unless the Supreme Court intervenes. The Justice Department requested exactly that in a brief filed in August on behalf of TVA (one of the defendants in the original lawsuit). On September 3, the State of Connecticut and 11 other states joined the fray and sought a Supreme Court reversal of the 2<sup>nd</sup> Circuit’s decision. The States argued that successful prosecution of the nuisance suit “would permit federal courts to impose CO<sub>2</sub> emission limits on any entity in the country.” The States proffered that “Someone has to make a policy determination as to how much [emission] is acceptable and how much is too much.” But “That someone should not be the federal judiciary.” NOTE: Other states are on the opposite side of this issue.

### **Future DOE CCS and Related Technologies Budgets**

Peter Orszag, who stepped down as Director of OMB earlier this year, authored an Op-Ed in the September 6, *NYTimes*, outlining the stresses impacting future federal budgets. The article, which has no discussion specific to the energy sector, is a cautionary tale for those seeking future federal funding for RD&D, as it cites the need for both strong budget cuts and large new sources of revenue (taxes) over the next few years. [http://www.nytimes.com/2010/09/07/opinion/07orszag.html?\\_r=1](http://www.nytimes.com/2010/09/07/opinion/07orszag.html?_r=1)

*EEDaily* (September 15) reported that senior members of the House Appropriations Committee plan to pass a continuing resolution [non-resolution?] prior to October 1 to fund government activities until after the elections, when they will focus on an omnibus bill for FY11 appropriations (rather than 12 separate appropriation bills).

The Pew Charitable Trusts group has published (online) a summary of its analysis of federal subsidies in the energy sector. The information includes tax incentive data, grants, and loan guarantees, as well as a discussion of broader tax issues (such as treatment of some royalties as capital gain income instead of normal income, and selected “regulatory subsidies” like the renewable fuel standard. Many of the references are “hotlinked,” enabling the reader to conduct his own assessment of the source documents. <http://subsidscope.com/energy/summary/>

### **Other U.S. CCS Related News**

In a study published in the September 10 edition of *Science*, the Carnegie Institution of Science argues that the future of climate change depends mostly on emissions from facilities not yet built. In an analysis that runs counter to current efforts to reduce emissions from existing sources, the study concludes that if all existing fossil fuel emitters operated unabated for their useful lives, they would emit about 500 billion tons of CO<sub>2</sub> (by 2060), leading to global CO<sub>2</sub> concentrations of 430 ppm (of CO<sub>2</sub>, not CO<sub>2</sub>-eq). [The reader is cautioned to understand that this projected concentration excludes the impact of additional emissions from sources built after 2010.]

[http://carnegiescience.edu/news/main\\_climate\\_threat\\_CO2\\_sources\\_yet\\_be\\_built](http://carnegiescience.edu/news/main_climate_threat_CO2_sources_yet_be_built)

The Clean Air Task Force, which took a strong position advocating CCS technology in a report provided to the Interagency Task Force on CCS (The Carbon Capture and Storage Imperative), has issued a new report: The Toll from Coal: An Updated Assessment of Death and Disease from America’s Dirtiest Energy Source. The report was prepared by Abt Associates, and used EPA’s approach to measuring “premature mortality” from fine particles associated with coal combustion (in which all fine particles are treated equally, regardless of toxicity), and concluded that coal is killing fewer people than in the past, but still too many. <http://www.catf.us/resources/publications/>

The Illinois Commerce Commission has concluded that Tenaska’s proposed Taylorville (IGCC-SNG /CCS-EOR) has “uncertain future benefits” and costs about 30% more than traditional coal-based power plants. Tenaska responded that Illinois legislation (which supports clean coal generation) did not require the facility to be a low-cost provider. The ICC’s cost estimate for the plant was \$3-4.2 billion (and \$213/MWh), bracketing Tenaska’s estimate of \$3.5 billion. The state legislature will now decide whether to approve construction of the plant. <http://www.sj-r.com/state/x863071679/Report-Cost-of-Taylorville-clean-coal-plant-could-be-4-billion>

The Climate Change Policy Partnership at Duke University has published a 49 page Working Paper titled, The Near-Term Market and GHG Implications of Forest Biomass Utilization in the Southeastern US. The report concluded that co-firing coal and 10% biomass (energy basis) could result in 0.5 quads of biomass combustion for power, or about 5% of the region’s fossil energy and nuclear generation. [http://www.nicholas.duke.edu/ccpp/ccpp\\_pdfs/biomass.08.2010.pdf](http://www.nicholas.duke.edu/ccpp/ccpp_pdfs/biomass.08.2010.pdf)

Scott Madden Energy Consultants has published a thoughtful report titled: The Energy Industry Update, covering a number of issues relevant to the electric utility sector. Download at: <http://www.scottmadden.com/insight/400/The-Energy-Industry-Update.html>

Princeton University has developed an on-line “Subsurface carbon sequestration simulator”, or a model that will predict the subsurface response to CO<sub>2</sub> injection, given user-defined inputs for major model parameters (aquifer thickness, injection rate, aquifer permeability). <http://subsurface.princeton.edu/RECS.html>

Joule Unlimited (Cambridge, Massachusetts) has patented a genetically altered bacterium that converts sunlight and CO<sub>2</sub> directly to hydrocarbons (ethanol, alkanes). The innovation is that the hydrocarbon is directly excreted, rather than converted from an intermediate product. The system will run on air, but “will do better using the exhaust from a power plant.” A commercial version is scheduled to begin operation in 2012. A comment by an independent consultant implied that the technology is not “a proved process”. NYTimes (Sept 13),

[http://www.nytimes.com/2010/09/14/science/earth/14fuel.html?\\_r=2&partner=rss&emc=rss](http://www.nytimes.com/2010/09/14/science/earth/14fuel.html?_r=2&partner=rss&emc=rss)

## China and CCS

China's first CCS project, run by Shenhua Group, has kicked off construction in Erdos in Inner Mongolia. The first phase of the CCS project will enter trial operation at the end of 2010 and is expected to reduce 100,000 tons of carbon dioxide emission, said Lin Changping, official with China Shenhua CTL chemical Co., Ltd. In China, 80% of carbon dioxide discharge comes from coal burning. The CCS project will explore a new way for China to develop low carbon economy. (*Energy Central*, August 30)

## UK and CCS

A brief paper prepared for the “Energy Group of the Conservative Party” [in the UK] concluded that: “there is simply not time to wait and see whether current market forces alone, with the EU carbon price as the sole incentive, will deliver CCS at the scale and pace required.” The report recommended that the UK establish a “National Carbon Storage Authority” to move CO<sub>2</sub> from emitters to offshore storage sites. It appears that the scope of the Authority’s effort would include construction of CO<sub>2</sub> pipelines, and securing contracts for CO<sub>2</sub> storage. [http://www.ucl.ac.uk/ccip/pdf/Oxburgh\\_thinkpiece-1.pdf](http://www.ucl.ac.uk/ccip/pdf/Oxburgh_thinkpiece-1.pdf)

The UK has published information on its policies toward licensing of offshore CO<sub>2</sub> storage sites, and pipelines to those sites. The current action is the result of “a consultation document” [which appears equivalent to a proposed rule] issued September 25, 2009, and responds to public comments submitted on that proposal. The “response” offers insights into how a wide variety of CO<sub>2</sub> storage issues can be addressed, including potentially overlapping storage sites, and interaction with petroleum development. Based on these comments and responses, the regulatory agency will provide additional detail “in due course” on many detailed aspects of CCS storage licenses.

[http://www.decc.gov.uk/en/content/cms/consultations/co2\\_storage/co2\\_storage.aspx](http://www.decc.gov.uk/en/content/cms/consultations/co2_storage/co2_storage.aspx)

The UK government's chief environment scientist, Robert Watson, has called for more openness in admitting Britain's apparent cuts in greenhouse gases are an illusion. If “embedded” emissions are counted, the CO<sub>2</sub> reduction disappears, says Prof Watson, and UK emissions are up, not down. He mentioned the same syndrome is true for other rich nations which off-shore manufacturing. That means developing countries - particularly China - are blamed for goods they export to the West. He said, “At face value UK emissions look like they have decreased 15% or 16% since 1990. But if you take in carbon embedded in our imports, our emissions have gone up about 12%. We've got to be more open about this.” A spokesman for the Department of Energy and Climate Change (DECC) said this phenomenon was recognized by the government. An early study on the topic was done for the UK's Department for Environment, Food and Rural Affairs (Defra) by the Stockholm Environment Institute. This study can be found at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=14606>

<http://www.bbc.co.uk/news/science-environment-11172239>

Confederation of British Industry (CBI) will host climate change 'clash of the titans' debate. Former government chief scientist Sir David King will debate arch-skeptic Lord Lawson in public showdown at the CBI's annual climate change conference in November. The most prominent climate skeptic and the most vocal advocate of the cause in the UK are to take part in their first public debate on the subject. The event is likely to inject renewed vigor into a deadlocked debate between two camps that seldom meet face to face and appear to be increasingly entrenched in their positions.

<http://www.guardian.co.uk/environment/2010/aug/30/cbi-climate-change-debate-king>

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## *Poland and CCS*

Poland plans to give away tens of millions of carbon emissions permits [allowances] to new power stations. This plan has drawn criticism from environmentalists, but the European Union's climate chief says she is not worried. The disagreement highlights Poland's problems in aligning its high-carbon economy with the EU's ambitions to cut carbon dioxide emissions from power plants and heavy industry. Environmental campaigners WWF estimate that Poland's power stations would probably get free permits for 33.6 million tons of carbon emissions each year on average, close to the entire annual emissions of countries such as Norway or Slovakia. European Union climate commissioner Connie Hedegaard is not worried about the situation for the time being, but the decision still faces scrutiny from the EU's other 26 member states. Ministers agreed in December 2008 that from 2013 all EU power producers would be forced to pay for permits to emit each metric ton of carbon dioxide. Poland and several eastern European allies had opposed the move, saying it would be too costly for their carbon-intensive, coal-powered economies. In return for dropping their opposition, they were allowed to grant up to 70 percent of those permits for free in 2013, gradually reducing the number to zero by 2020. The concession also applied to plants that were "physically initiated" by the end of 2008 -- a term that most people assumed to mean "already under construction." Now Poland is seeking to broadly reinterpret the definition of "physically initiated" to include sites that were under preparation, a move that could allow the construction of up to 15,000 MW more of new capacity -- equivalent to more than 10 average-size nuclear power plants. A spokeswoman for Poland's environment ministry confirmed that the move could lead to 15,000 MW of new power capacity, half of Poland's peak electricity demand.

<http://af.reuters.com/article/energyOilNews/idAFLDE67N1EP20100824?sp=true>

## *Australia and CCS*

In Australia, the coal crackdown will not reduce emissions. The new Labor government has promised emissions standards for new coal electricity generator. As presently proposed, they would not cut greenhouse gas emissions from any of the 12 coal power plants currently proposed in Australia. During the election campaign, Labor promised to impose new mandatory standards, with a starting point of 0.86 tons of carbon dioxide per megawatt hour, on all new coal plants. The promise would also require new coal plants to be carbon capture and storage "ready." But the standards - which would start next

year - would not apply to projects that have already had regulatory approval. An analysis by Greenpeace shows that none of the 12 proposed coal plants would be forced into a redesign or be shelved due to the standards. The figures show just three of the proposed plants would emit more carbon per megawatt hour of electricity generated than would be allowed under Labor's promised standards. <http://www.smh.com.au/environment/climate-change/coal-crackdown-will-not-reduce-emissions-20100830-147en.html>

The new Australian government has appointed new ministers for Climate Change and for the Environment posts. Recently, they began speaking out about their positions on the issues. Australia's newly appointed Climate Change Minister, Greg Combet, vowed to fight for coal industry jobs, as he pursues a price on carbon. The former Australian Council of Trade Unions leader has predicted the coal industry "absolutely" has a future, as he pursues his three key policy reform objectives: pursuing renewable energy, energy efficiency and the development of a carbon price for Australia. In an interview with *The Australian*, Combet said his background as a former coal engineer, union official and Member of Parliament (MP) with coal workers in his New South Wales electorate, meant he did not believe his job was to shut down the coal industry. The new Minister for the Environment, Tony Burke, previously oversaw agriculture, fisheries and forestry, in addition to population. [http://news.xinhuanet.com/english2010/business/2010-09/13/c\\_13492308.htm](http://news.xinhuanet.com/english2010/business/2010-09/13/c_13492308.htm)



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