June 14, 2009

Sequestration News

The U.S. starts talks with China next week regarding China's contribution to the global effort to reduce GHG emissions. CCS is on the agenda

Congressman Waxman's climate bill (H.R. 2454) –i.e., the House climate bill -- is being discussed with other House Committees which have jurisdictional authority on aspects of the Bill. The House Committees involved in the discussions have been given guidance from Speaker Nancy Pelosi to conclude their work by June 19, a very short deadline. A key issue may be concessions to Agriculture Committee Chairman Peterson, who appears to be concerned with EPA's proposal to include life cycle effects of corn ethanol production in evaluating that fuel as an alternative fuel under existing legislation.

The Senate Energy Committee is scheduled to markup Senator Bingaman's energy bill on Tuesday. The committee has done a nice job of putting the various bill elements into easily readable packages, so they are easy to review. This Bill establishes a Renewable Electricity Standard similar to that in the House climate bill. Some concessions have been made to nuclear advocates to exclude increases in nuclear power generation from the bill's baseline.

A Republican energy independence bill has been introduced by Senator Boehner as an alternative to pending energy and climate change legislation.

Waxman Climate Bill (H.R. 2454)

Congressman Henry Waxman's climate bill, H.R. 2454, was reported out of the House Energy and Commerce Committee and is now being directed to several other committees, including Ways and Means and Agriculture, for their consideration. *EENEWS* (June 5) reports that Energy and Commerce members were briefing other committees on the substance of the nine hundred page bill, with the aim of generating one macro-amendment (a "substitute" amendment) that would satisfy a critical mass of Representatives. House rules could be crafted to limit the ability of Republicans to force votes on specific issues that could be politically difficult for some Congressmen. Speaker Nancy Pelosi has instructed the other Committee Chairs to finish their work by June 19. The tight deadline will increase the challenge for House Natural Resources Chairman Nick Rahall, who has developed a lengthy draft proposal for overhauling oil and gas royalties and wants to include it in the climate bill. House Agriculture Committee Chair Peterson, who has expressed displeasure with EPA's proposal to include

land-clearing GHG contributions to the analysis of corn-based ethanol under existing alternative fuel legislation, has become a key player in the climate debate. He has also taken issue with EPA's view that no-till farming offers limited potential as a GHG offset approach. The House leadership appears to be trying to negotiate a large "substitute" bill, rather than endure markup in all jurisdictional committees. On June 10, 15 members of the House Ways and Means Committee wrote Committee Chairman Rangel asking for a markup session of H.R. 2454. Under House rules, if a majority of the Committee's members request such a session, it must be held. The group appears to be 6 votes short, but they are still seeking signatures. A copy of the amended bill, as reported by the House Energy and Commerce Committee, can be found in the Committee's Report, via www.thomas.gov , by retrieving Rept. 111-137, Part 1 (743 pages).

The Breakthrough Institute (which advocates clean energy and sustainable prosperity) has recommended a major increase in governmental energy R&D funding. They have concluded that the Waxman climate bill (H.R. 2454) as proposed "would not increase clean energy production above the business as usual baseline." http://www.thebreakthrough.org/

Bingaman Bill

The Senate continues consideration of Senate Energy and Natural Resources Committee Chairman Bingaman's bill, which would establish a Renewable Electricity Standard (RES). The nuclear industry has sought positive treatment of its contribution to electricity generation under the RES. An amendment by Senator Lisa Murkowski to preclude increased nuclear power production from being treated within the "baseline" was adopted by the Committee, while more aggressive proposals to treat nuclear generation as "renewable" were rejected. A lower baseline means less renewable energy is needed to meet the percentage RES requirement. Under the bill's language, about ¼ of the required renewable generation could be met via improvements in efficiency
http://in.reuters.com/article/governmentFilingsNews/idINN0453828320090604

Boehner Bill

On June 10, Congressman Boehner introduced The American Energy Act, and billed it as an "All-of-the-Above" solution for energy independence. The bill advocates increased access to domestic energy resources (Outer Continental Shelf production of oil and gas); incentives for the development of a host of advanced renewable, conservation, nuclear, and coal technologies; and regulatory reform. The 150 page bill is generally perceived as a Republican alternative to Democratic energy and climate bills.
http://www.gop.gov/energy

EPA and CCS

On June 9, Republican lawmakers wrote Committee Chairmen Towns and Markey expressing "grave concern over the lack of transparency and accountability" in the development of GHG regulations by EPA – "crafted behind a veil of secrecy and under a vow of silence." According to a participant in the process, care was taken to avoid written records in an effort which "appears to be a deliberate and willful violation of the Presidential Records Act." The letter seeks a congressional investigation, and is signed by Ranking Members of the House Oversight and Government Reform Committee, and the Select Committee on Energy Independence and Global Warming.

Dr. Ed Rubin (Carnegie Mellon University) has authored a thirty page report on power plant performance standards, for the Pew Climate Center. The report concludes that a CO_2 Cap and Trade program will not promote CCS technology until allowance prices exceed the cost of CCS, which could require some time. A performance standard, on the other hand would require the use of CO_2 capture technology for any new unit wishing to use coal. The report is timely because many observers expect EPA to follow its endangerment finding for climate change with a proposed rule setting performance standards for CO_2 emissions from one or more source categories. http://www.pewclimate.org/white-papers/coal-initiative/performance-standards-electric

United Nations & CCS

The chairman of the U.N. Intergovernmental Panel on Climate Change urged the international community to develop more technologies for capturing and storing carbon dioxide as part of the fight against global climate change. Rajendra K. Pachauri, who shared the 2007 Nobel Peace Prize with Al Gore, said that underground CO_2 storage is a "very attractive" technology for cutting emissions. "We need to move fast, we need to bring down costs, we need to do this in a much larger scale," he said at the opening of an international conference about CO_2 storage in Bergen, Norway. Ministers and representatives from more than 15 countries were participating in the meeting Wednesday, including the U.S., China, Britain and Germany. A debate between the leaders focused on potential barriers for developing CO_2 storage, such as financing requirements, safety and assuring public support.

Another report at the same event focused on a different set of concerns. International experts, asked to make carbon capture and storage a worldwide industrial tool for combating climate change, criticized aspects of the idea, including the finance and the politics now engulfing it. “It’s a scandal that CCS has been left out of the (Kyoto Clean Development Mechanism),” said John Ashton, the United Kingdom’s Special Representative for Climate Change. Another CCS expert said the CCS experts themselves were running the risk of being part of the problem and of unleashing a public backlash against the industrial process for cleaning up emissions. “There are barriers to establishing CCS that have not been heard,” said Helene de Coninck, manager of the Energy Centre of the Netherlands, a European pioneer in the study of CCS’s politics and economics. “There is no CCS storage potential worldwide,” de Coninck said, adding, “And CCS is not carbon-neutral without perhaps biomass added.” Ashton and de Coninck’s comments followed an appeal by European Commission President José Manuel Barroso who said “CCS can contribute to the recovery of the European Union economy.” http://www.scandoil.com/moxie-bm2/by_province/north_sea_rim/carbon-capture-criticism-grows.shtml

Reforms to the UN-backed Clean Development Mechanism (CDM) were suggested to make this carbon offsetting scheme easier and more cost effective for emission reduction projects to gain official approval to sell carbon credits. At a meeting in Bonn, the CDM's Executive Board agreed to investigate new rules that would allow carbon capture and storage and forestry projects to be included in the offsetting scheme and raise funds by selling officially sanctioned certified emission reduction (CER) credits. The board said it would aim to report on its findings ahead of the UN-backed climate change meeting in Copenhagen where the development of new mechanisms to fund CCS and forest protection projects are expected to form a key part of any international agreement. http://www.businessgreen.com/business-green/news/2243229/cdm-investigate-forestry-ccs

A forest carbon market is emerging in anticipation of a global, U.N. climate deal in December in Copenhagen. Officials in Papua New Guinea (PNG) have underlined how things may go awry. *Reuters* has uncovered evidence of a multi-million-dollar offer of assistance from carbon brokers to a government agency, and confusion over whether offset sales were from valid projects. There is growing

interest from countries and companies in the developed world to buy the rights to the carbon stored in trees as they grow, to offset their own emissions of the greenhouse gas carbon dioxide. But development and environment groups have long warned that suddenly placing a big value on rain forests could spur friction and even conflict in some developing nations, because of uncertain tenure rights, corruption and inadequate policing. At a conference on the Indonesian island of Bali, Interpol environmental crime official Peter Younger told *Reuters* he expected fraudulent trading of carbon credits, as organized crime infiltrates the system of companies and countries in the developed world buying rights to the stored carbon. Papua New Guinea established its Office of Climate Change and Environmental Sustainability (OCCES) in 2008 to develop forest protection projects. Early this year, the agency suspended plans to sell rights to the carbon stored in its rain forests after deals sparked land ownership disputes. Payments to conserve trees are not eligible under Kyoto, but there is enormous pressure to widen the scheme to include rain forests under the successor climate pact to be thrashed out in Copenhagen. Papua New Guinea helped found the 40-nation Coalition for Rainforest Nations which wants support for the system, Reduced Emissions from Degradation and Deforestation (REDD), under a new global agreement. http://uk.reuters.com/article/oilRpt/idUKL17190120090604?sp=true

China & CCS

China will continue to eliminate outdated industrial facilities to save energy and cut pollution in its bid to address climate change according to an action plan approved by a joint meeting of the national steering committee for responses to climate changes and the State Council steering committee for energy-saving and emission control. China intends to continue to retire small coal-burning power stations with a total generating capacity of 15 million KW. China will continue to eliminate obsolete capacity in key industries, including 10 million tons in iron-making industry, 6 million tons in steel industry, and 50 million tons in cement industry. The meeting decided to adopt more measures, including stricter energy efficiency and environmental assessments, to control the expansion of industries that consumed excessive energy and discharged pollutants. China also committed to further efforts to improve the energy efficiency of the national economy. In 2009, such projects are expected to reduce energy consumption equal to 750 million tons of standard coal usage. In the three years to 2008, energy consumption per unit of GDP fell 10.1%, according to the State Council. This is equivalent to or translates to saving 300 million tons of standard coal and cutting carbon dioxide emissions by 750 million tons. Emissions of sulfur dioxide in the same period fell 8.95%, and chemical oxygen demand (COD), a measure of water pollution, was down 6.61%. http://news.xinhuanet.com/english/2009-06/05/content_11496110.htm

Remarks by U.S. Climate envoy Todd Stern at the Center for American Progress were reported by *ClimateWire* (June 4). Stern is about to represent the U.S. in a series of discussions with China. Stern said that the U.S. expects China and developing nations to offer a "robust set of actions", not "the same actions developed countries are taking." At the same event, David Sandalow (DOE) stated that CCS will be a central issue in the talks. He said that the U.S. is aiming for an international goal of 20 commercial CCS projects to be operating by 2020. *Greenwire* (June 11) reported that Chinese foreign ministry spokesman Qin Gang "said cuts were out of the question." In this second report, Stern was cited as saying that the U.S. did not expect China to adopt a national cap on emissions.

Former Vice President Al Gore, speaking at the Cornell Global Forum on Sustainable Enterprise, stated that many of China's coal-fired power plants were thermally inefficient and therefore unlikely to employ CCS technology (due to the large parasitic power requirement of current CCS technology). On the other hand, Gore noted the large emissions of soot from developing countries and suggested that controlling

those emissions would be a positive response to global warming.
http://www.reuters.com/article/latestCrisis/idUSN04505770

Huaneng will launch a second pilot carbon capture project in Shanghai at the end of this year. China's coal-dominated power generation capacity has been soaring by 70 GW a year and its CO_2 emissions are now thought to be the highest in the world. Finding the technology to burn coal more cleanly has become a priority. Huaneng's Shanghai project aims to sequester 10,000 tons of CO_2 per year from one of Huaneng's power plants, but it is only a small fraction of the plant's total emissions. Huaneng's first facility -- launched last year at the Gaobeidian power plant on the outskirts of Beijing -- was even smaller, capturing just 3,000 tons of carbon dioxide per year, which is then processed and used by local drinks manufacturers. The CO_2 collected from the Shanghai facility will be sold to local industry.
http://www.reuters.com/article/GCA-GreenBusiness/idUSTRE54O15Y20090525?sp=true

Indonesia's state electricity company is set to secure another US$761 million in loans from Chinese banks next month to help finance construction of two large power plants in Java. The China Development Bank will provide US$468 million for the Adipala power plant in Cilacap, Central Java, and Export Import Bank of China to provide US$293 million to finance the Pacitan plant in East Java. The Adipala power plant will have a capacity 660 MW and the Pacitan plant 630 MW, reports said. The two power plants are part of Perusahaan Listrik Negara's (PLN) crash program to build coal-fired power plants with a total capacity of 10,000 MW, financed mainly with Chinese loans. (*Energy Central*, May 26)

UK & CCS

The UK utility Scottish Power has begun capturing CO_2 emissions from a generator, testing the experimental technology to avoid releasing greenhouse gases for the first time on a coal fired power station in the country. The "small-scale" trial at the Longannet plant in Scotland will trap gas from 1 MW of output. Scottish Power will capture CO_2 emissions from coal combustion, using a 30-ton Aker Solutions ASA unit. Scottish Power will test only equipment that captures the gases, leaving the storage element for later.
http://pepei.pennnet.com/Articles/Article_Display.cfm?Section=ARTCL&SubSection=Display&PUBLICATION_ID=6&ARTICLE_ID=363668

The UK and Norway recently signed an agreement that pledges that the countries will co-operate on the development of the North Sea as a potential site for storing captured carbon emissions. Under the terms of the deal, the governments have jointly commissioned a major new study designed to analyze the sea bed of the entire North Sea, identify areas that are likely to be suitable for the storage of liquefied carbon dioxide, and predict the likely volumes of CO_2 that will have to be stored in the coming decades and from where it will be captured. The study will also attempt to identify the likely business models that could be developed to support an emerging carbon storage industry and the extent to which the North Sea could be used to sequester carbon emissions from other European countries.
http://www.businessgreen.com/business-green/news/2243126/uk-norway-launch-north-sea

France & CCS

Following two years of study and preparation, Total SA has received administrative authorization to start injecting carbon dioxide in France's first CCS pilot project. Injection into the nearly depleted Rousse reservoir at Lacq gas field in southwestern France is scheduled to start in late June and will last for two years. The CO_2 will be captured from exhaust gases at one of five boilers at Lacq's steam generating plant converted to an oxy-fuel combustion unit, then compressed and sent via pipeline for injection into

the Rousse reservoir at a depth of 4,500 meters. The Rousse reservoir, a carbonate formation, will be closely monitored through detectors set throughout the surface and subsoil to measure the injection flow and the CO_2 pressure, temperature, and concentration. http://www.ogj.com/index/article-display/2828370014/s-articles/s-oil-gas-journal/s-drilling-production/s-production-operations/s-ior_eor/s-articles/s-lacq-field_ccs_project.html

Norway & CCS

Norway has published *Incentives to sustain forest ecosystem services*, a sixty page report that examines policies and incentives for reducing emissions from deforestation and forest degradation (REDD) in developing countries. The report suggests caution be used in implementing the REDD program – to assess whether subsidy payments are effective, whether they adversely impact the poor in the host countries, that they explore approaches to make the incentives more cost-effective, that "strong and fair rules" be used to govern the use of forestry incentives, and that accomplishments be carefully monitored.

Other CCS News

On June 1, the Inter-Academy Panel on International Issues (IAP), with 70 national science academies (including the U.S. Academy of Sciences), issued a statement which included the following: "Ocean acidification is a direct consequence of increasing atmospheric CO_2 concentrations. To avoid substantial damage to ocean ecosystems, deep and rapid reductions of global CO_2 emissions by at least 50% by 2050, and much more thereafter are needed."
http://www.interacademies.net/Object.File/Master/9/075/Statement_RS1579_IAP_05.09final2.pdf
Their website also carried the "warning" that: " *Ocean acidification is expected to cause massive corrosion of our coral reefs and dramatic changes in the makeup of the biodiversity of our oceans and to have significant implications for food production and the livelihoods of millions of people."*
http://www.interacademies.net/CMS/8900.aspx

The Investor Responsibility Research Center Institute (IRRC) has funded an analysis by Trucost Plc. (Boston, MA) to characterize the business exposure of top U.S. companies to future climate regulations. The report concludes that most S&P 500 companies have modest exposure, but electric utilities could see control costs that equal 12% of revenues and 45% of earnings in 2012 under a Cap & Trade program.
http://www.trucost.com/pressreleases/S&P%20Carbon%20Risk.html

Section 714 of the Energy Independence and Security Act of 2007 (P.L. 110-140) required that the Department of Interior (DOI) provide a report to Congress "on a recommended framework for managing geological carbon sequestration activities on public land." The report has now been prepared and submitted. It concludes that several "essential questions and unknowns remain for regulatory and public policy resolution" including: how CO_2 will be classified (waste versus resource); how will sequestration be managed under multiple resource ownership; how will conflicts between conservation and CCS be resolved; how will long-term liability be handled? Recommendations are not highly specific and tend to suggest that regulatory decisions will be made by DOI on an ad hoc basis; and that DOI needs to resolve the policy issues while investing in characterization of sequestration reservoirs and storage monitoring techniques. The "recommended framework" is difficult to locate within the 22 page report. http://www.doi.gov/news/09_News_Releases/060309.html

The Environmental Defense Fund (EDF) commissioned the Harte Research Institute (Texas A&M) to project the impacts of sea level increases on the Gulf Coast. The report concludes that *relative* sea level

rise (which includes actual sea level rise and the significant land subsidence that is occurring in the Gulf) could be large under various global climate change scenarios, and range from 0.7 to 1.5 meters over the next 100 years, for the scenarios hypothesized. The larger figure could displace 1.3% of the households in Texas. http://www.edf.org/pressrelease.cfm?ContentID=9906

The global economic crisis could lead to rising CO_2 emissions in the long-term according to a new report from the International Energy Agency (IEA). In the report, IEA urged governments to increase their investments in clean energy technologies in order to cut greenhouse emissions and help combat climate change. The agency's concern is that a prolonged economic slump would depress fossil fuel prices and erode private and public investments in clean energy technologies over the medium and long-term. The report is available at: http://www.iea.org/Textbase/Papers/2009/ensuring_green_growth.pdf

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The U.S. Carbon Sequestration Council (www.uscsc.org) is a not-for-profit, 501(c)(3), organization established as an authoritative source of information to inform and to educate on all matters pertaining to carbon sequestration.