



March 21, 2011

Sequestration News

The Administration's budget request and Congressional budget issues have dominated the CCS news, along with proposals to block EPA's existing and upcoming climate change regulations. The President submitted his FY2012 budget request (for the fiscal year beginning October 1, 2011). The budget includes a significant cut for Fossil Energy R&D, relative to FY2010, and no funding for CCS demonstration projects. Congress passed a 3-week Continuing Resolution, extending operation of the Government until April 8. Several bills have been introduced to limit EPA's authority to regulate GHGs.

EPA initiated a series of meetings to obtain industry input to CO₂-NSPS rules scheduled for proposal this summer. The rules will cover new and existing power plants and refineries. EPA regulations on non-climate emissions continue to move forward. A final rule was promulgated for industrial boiler Hazardous Air Pollutants (HAPs). Power plant rules are moving through the interagency process. Additional concepts on the Transport Rule were offered in an EPA NODA. There has been little Congressional activity regarding the non-climate regulations that are about to impact the power sector.

A Cornell University professor has used recently reported EPA data on life-cycle methane emissions from O&G production to conclude that using shale gas to generate electricity results in the same or greater GHG emissions than using coal. EPA disagreed with the use of their data for this analysis.

The President advocated a Clean Energy Standard (which would include Fossil Energy-CCS) in his State of the Union Address. The initial congressional response was positive, but the concept is now reportedly stalled.

Preliminary information from China's 12th 5-year Plan indicates that, despite efforts to expand alternatives, in 2015 nearly 90% of China's energy will come from fossil energy.

Administration and Congressional Budget Actions

The President proposed a budget in February 2010 which estimated total FY2011 revenues (taxes) at \$2.2 trillion, and total expenditures at \$3.8 trillion – leading to a deficit of \$1.6 trillion. With regard to the Fossil Energy coal and CCS program, the Administration's budget for the coal R&D budget is cut from \$404 million (FY2010) to \$291 million (FY2012), or approximately 30%. CCS is reduced by less than other

program elements. As in FY2010, the FY2012 budget requests no funding for commercial scale demonstration projects or for loan guarantees. The budget request is organized into a different budget structure from previous years with particular emphasis on CCS. The budget request is redefined into four areas: Carbon capture, carbon storage, advanced energy systems, and crosscutting research. http://fossil.energy.gov/aboutus/budget/12/FY_2012_Budget.html .

On March 17, Congress passed a 3-week Continuing Resolution for FY2011 spending, which will keep the Government funded until April 8. Current budget talks do not provide a major change from FY2010's spending rate (but do not provide funding for loan guarantees), with the House Republican package reducing spending by about \$61 billion below FY1010, whereas the Senate Democratic package seeks a reduction of about \$9 billion. Both approaches were voted down in the Senate on March 9. The deficit under the ultimate compromise will likely remain in the neighborhood of \$1.5 trillion, but impacts on individual agency programs could be significant <http://www.politico.com/news/stories/0311/51501.html> , <http://www.whitehouse.gov/omb/budget/Overview> , <http://www.politico.com/news/stories/0311/50909.html>

Clean Energy Standard and CCS

Congressional interest in a "Clean Energy Standard," or CES, rekindled following an endorsement by President in the State of the Union address. A CES is essentially a Renewable Electricity Standard expanded to include other low-carbon generation options, like nuclear and fossil energy with CCS. Additionally, the President's proposal appeared to provide half-credit for natural gas combined cycle systems without CCS. A key issue is whether the primary driver for a CES is the development of new low carbon options, or replacing Cap and Trade legislation to reduce GHG emissions from power generation. Senator Graham, who introduced a CES proposal in the 111th Congress, characterized the current CES legislative effort as stalled, due to the focus on the FY2011 budget continuing resolution. (EE NewsPM, March 8)

EPA and CCS

The House Energy and Commerce Committee is considering a bill introduced by Chairman Upton on March 3 (H.R. 910) which would block EPA regulation of GHGs from stationary sources under existing legislative authority. Subcommittee markup is scheduled for March 10. A parallel bill was introduced in the Senate by Senator Inhofe. On January 31, Senator Barrasso introduced S. 228, a bill which would also block regulatory action to address GHG emissions. <http://energycommerce.house.gov/news/PRArticle.aspx?NewsID=8300>

On February 9, the House Subcommittee on Energy and Power held a hearing on Rep. Upton's Energy Tax Prevention Act of 2011 (HR 910 - opposing EPA regulation of GHGs). Testimony and an archived webcast are available at <http://republicans.energycommerce.house.gov/hearings/hearingdetail.aspx?NewsID=8179> .

The bill was approved by the Subcommittee on March 10, and ordered to be reported (approved) by the full committee on March 15. Senator Inhofe introduced a Senate version of the House bill as S.482 on March 3. EENews (March 17) reports that it may reach a floor vote the week following next week's recess. On March 1, the House Subcommittee on Energy and Power (Committee on Energy and Commerce) held a similar hearing on the impact of GHG regulation on U.S. jobs. Written testimony and an archived webcast are available at

<http://energycommerce.house.gov/hearings/hearingdetail.aspx?NewsID=8270>. The prepared statement by Charles Rivers Associates offers a rare insight into how regulatory analyses can be differently interpreted.

EPA has held a series of 5 meetings to obtain input for NSPS GHG standards scheduled for proposal this summer. Separate standards will be proposed for new and existing power plants and refineries. Archived webcasts are available for viewing. Written comments can be submitted until March 18. <http://www.epa.gov/airquality/listen.html>

With all the attention paid to hydraulic fracturing for shale gas production, EPA has decided to study the issue. The report should be available some time in 2014. The Agency published a 140 page Draft Plan describing the study, noting that evaluating the GHG implications of gas produced via hydraulic fracturing was one of several “areas of concern outside the scope of this study,” although the draft outline did provide some GHG data points for readers to consider.

[http://yosemite.epa.gov/sab/sabproduct.nsf/0/D3483AB445AE61418525775900603E79/\\$File/Draft%20Plan%20to%20Study%20the%20Potential%20Impacts%20of%20Hydraulic%20Fracturing%20on%20Drinking%20Water%20Resources-February%202011.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/0/D3483AB445AE61418525775900603E79/$File/Draft%20Plan%20to%20Study%20the%20Potential%20Impacts%20of%20Hydraulic%20Fracturing%20on%20Drinking%20Water%20Resources-February%202011.pdf)

EPA Actions in Other Areas that Could Impact CCS Deployment

On March 9, the House Committee on Oversight & Government Reform held a hearing on the cumulative impact of regulation on U.S. manufacturers. Representatives from several industry associations offered testimony on how EPA rules were affecting their industries. The Chairman of the Portland Cement Association stated that the recession had cut cement demand in half. He estimated that two of the pending rules would cost his industry \$5.4 billion over 4 years, increasing production costs by 20%, and that the HAP rule would lead to 20% of U.S. cement plants closing over the next 3 years. Testimony and an archived webcast are posted at

http://oversight.house.gov/index.php?option=com_content&view=article&id=1174%3A03-09-2011-gassessing-the-cumulative-impact-of-regulation-on-us-manufacturersq&catid=18&Itemid=23 .

On February 11, EPA published a notice of proposed rulemaking to retain the current ambient air quality standards for carbon monoxide (CO). The proposal included changes to ambient air quality monitoring requirements – specifically, more roadside monitoring. Since CO is primarily a vehicular emission, these monitor locations could lead to more stringent emission limits. (76FR8158, February 11, 2011)

On July 6, 2010, EPA proposed the Clean Air Interstate Rule, followed by additional “Notices of Data Availability” on September 1, October 27, and January 7, 2011. These NODAs include additional information and proposals related to the rule, and provide the opportunity for additional public comment. The most recent NODA proposed alternative systems for allocating valuable SO₂ credits to utilities. One proposed approach was to make the distribution based on heat input, which has the effect of treating coal and gas fired units equally, even though gas fired units emit almost no SO₂. GenOn Energy, Inc., provided comments to EPA on February 7, concluding that the NODA option “would require owners of coal-fired plants to transfer hundreds of millions of dollars to owners of gas-fired plants.” The EPA NODA and allocation tables can be viewed at <http://www.epa.gov/airtransport/actions.html>. The GenOn comments can be retrieved from the regulatory docket at <http://www.regulations.gov/#!docketDetail;rpp=10;po=0;s=genon;D=EPA-HQ-OAR-2009-0491>.

On February 21, EPA issued its final rule for hazardous air pollutant (HAP) emissions from industrial boilers. The final rule regulates mercury, PM (as as surrogate for non-mercury metals), and CO (as a surrogate for toxic organics). Separate limits were promulgated for new versus existing boilers, and by

boiler type (no emission limit was set for existing biomass boilers, but they must periodically tune-up). EPA also issued three “reconsideration” notices, suggesting some aspects of the final rule may be modified in the future. The rule and supporting material are at <http://www.epa.gov/airquality/combustion/actions.html>.

EPA published a notice of proposed rulemaking for hazardous air pollutants from power plants on March 16. The 964 page proposed rule and background materials are available at: <http://www.epa.gov/airquality/powerplanttoxics/actions.html>

Life-Cycle GHG Emissions from Gas May Be Comparable to Coal

Dr. R. Howarth, Cornell University, has updated his earlier comparison of life cycle GHG emissions from gas and coal use. The current comparison includes a 20 year and 100 year time basis, and examines shale gas, conventional natural gas, coal, and diesel oil. A significant factor in the analysis is the role of methane emissions in the extraction of both gas and coal. On a 100 year time basis, coal emissions fall between the high and low estimate for shale gas, and are a little greater than the high estimate for conventional gas use. On a 20 year time basis, shale gas has consistently higher total GHG emissions than coal (the “high” shale estimate is twice that of coal), due to the greater impact of methane when viewed in a 20 year time frame. Howarth’s most recent (January 26, 2011) analysis incorporates emission data from an EPA Technical Support Document used in the recent GHG reporting rules for the oil and gas industry. <http://www.eeb.cornell.edu/howarth/GHG%20update%20for%20web%20--%20Jan%202011%20%282%29.pdf>

ProPublica published a similar analysis comparing life cycle GHG emissions from natural gas to coal in early January. After a challenging response from a group called “Energy in Depth,” ProPublica published a follow-up story citing its sources, including EPA data, and methodology in greater detail. EPA took exception with how its data was being used. <http://www.propublica.org/article/clearing-the-air-on-propublicas-drilling-pollution-story>

Indiana Votes Down CO₂ Pipeline

The Indiana senate voted down a measure to provide eminent domain authority for a CO₂ pipeline proposed for a coal gasification facility in Rockport, IN. Losing the pipeline could have a cascading set of effects, as it could preclude the CCS strategy for the facility, thereby undercutting a federal loan guarantee thought to be essential to the project. Other proposed coal-based CCS facilities anticipating use of the pipeline could also be impacted. <http://www.indystar.com/article/20110214/BUSINESS/102140332/Senate-vote-crimps-pipeline-plan-gas-plant-backed-by-governor?odyssey=mod|newswell|text|IndyStar.com|p>

China and CCS

China’s draft 12th 5 Year Plan was introduced at the National People’s Congress on March 5. The World Resources Institute posted a review of the 118 page document, which has not yet been released to the general public. China is targeting a 17% reduction in CO₂ emissions intensity (tonnes per unit of GDP) by 2015, which WRI says is consistent with the 40-45% reduction in carbon intensity (by 2020, relative to 2005) offered at Copenhagen in January 2010. They also target 11.4% of primary energy consumption to be non-fossil fuels in 2015, implying that up to 88.6% will be fossil energy. Innovation is a focus area,

with 2.2% of GDP targeted for R&D, and 3.3 patents for every 10,000 people.

http://www.chinadaily.com.cn/xinhua/2011-03-05/content_1938144.html and

<http://www.grist.org/article/2011-03-07-how-does-chinas-12th-five-year-plan-address-energy>

CCS Related Reports

The United Nations Environment Program (UNEP) has published *Integrated Assessment of Black Carbon and Tropospheric Ozone*, a 36 page summary of a larger study. The report emphasizes repeatedly that aggressive global action is needed on long-lived GHGs, such as CO₂. However, its main point is that controlling shorter-lived climate forcers – methane, black carbon, and ozone – “could halve the potential increase in global temperature projected for 2050” The recommended control measures would also “avoid 2.4 million premature deaths” Control measures vary and include low-tech concepts like the use of more efficient cook stoves in developing countries, and eliminating open burning of agricultural wastes. http://www.unep.org/dewa/Portals/67/pdf/Black_Carbon.pdf

NETL has published an update to its periodic publication *Tracking New Coal-Fired Power Plants*.

<http://www.netl.doe.gov/coal/refshelf/ncp.pdf>

The Global CCS Institute (Australia) published a report in 2010 in the status of CCS projects. The organization recently issued an excellent update on the cost and performance characteristics of CCS applied to various source categories (e.g., power plants, natural gas processing plants, fertilizer plants).

<http://www.globalccsinstitute.com/resources/publications/economic-assessment-carbon-capture-and-storage-technologies-2011-update>



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.