



UNITED Carbon Sequestration Council STATES

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Sequestration News

With a climate bill passed by the House, analyses are now coming out with regard to the impacts of the House bill and attention is shifting to the Senate. The delay in moving health care legislation, which has taken a higher priority than climate change in the Senate, has had a delaying effect on a climate bill.

Harvard's Kennedy School has published a report concluding that CCS is expensive now (\$150/ton CO₂) but should be cheaper later (\$30-50/ton)

The U.S. and China have signed an MOU on climate change.

Initial European CCS projects are having difficulties getting permits to inject.

The U.S. is considering ratification of the Law of the Sea. The relevance to coal is that the treaty addresses subsea injection of GHGs, and nations' rights to near-shore resources

Waxman-Markey (W-M) Climate Bill

EIA has published a comprehensive analysis of HR2454. The EIA analyses only go through 2030, while the bill goes through 2050, so some of the advanced technology issues are not fully represented. The report results have some similarity to those from earlier EPA analyses, but are much more direct in identifying impacts (especially impacts on coal). The EIA website provides the full report, an executive summary, and an array of charts and graphs to show the impacts of the bill under a base case scenario, and several sensitivity analyses. EIA also provides the hard numbers in spreadsheet format for the analytically inclined. Consistent with EPA's assessment, EIA concludes that almost all reductions in emissions come from the electricity sector, and from "offsets" (reductions from sources not covered by the bill, like forests, or other countries. Their graphics are very good, and EIA is kind enough to post them in .jpg formats which one can just "drop" into power point presentations.

<http://www.eia.doe.gov/oiaf/servicerpt/hr2454/index.html?featureclicked=2&>

CBO reaches the same conclusion regarding offsets in its assessment of climate legislation. In The Use of Offsets to Reduce GHGs, CBO concludes that more than 50% of reductions could come from offsets.

CBO does not conclude that this is a bad outcome, because the offsets are cheaper than emission reductions from sources subject to the legislation, but their blog site suggests that there are some at CBO who are concerned that the international offsets will not be real.

<http://www.cbo.gov/doc.cfm?index=10497>

On July 27, the Congressional Research Service published Greenhouse Gas Legislation: Summary and Analysis of H.R. 2454 as Passed by the House of Representatives. The 163 page report (R40643) provides a section-by-section summary of the bill, a general overview of major provisions, and graphs displaying allowance distribution (free and auctioned) for two selected years: 2016 and 2030. This draft replaces the June 17 report on an earlier incarnation of the bill. <http://opencrs.com/document/R40643>

World Resources Institute (WRI) and the Georgetown Climate Center have published an analysis of allowance allocation under H.R. 2454 which cuts through many of the details in the legislation and offers some useful perspectives on the flow of valuable allowance allocations. For example, of the directed allowances in 2012-2020, 19% go to industry, 32% to consumer assistance, adaptation, and technology development, and 49% go to state programs and consumers (via states), including state allocations to promote efficiency and renewable energy. Note that industry allowances are scaled back after 2025, and are eliminated after 2035. Most allocated allowances after 2030 go to climate adaptation, international programs, technology subsidies, and federal consumer assistance. The data and graphics will likely be mined to show members of Congress how many allowances will flow to their states via the legislation. <http://www.law.georgetown.edu/gcc/climatelegislation.htm>

CCS Related Senate Activity

With a climate bill passed by the House, all eyes are on the Senate. The delay in moving health care legislation, which has taken a higher priority than climate change in the Senate, has had a delaying effect on a climate bill. Nevertheless, Majority Leader Harry Reid (D-NV) has directed the six jurisdictional committees working on a climate bill to clear their respective pieces by the end of September. The various committee products will likely be folded into a single bill from Senator Barbara Boxer (D-CA)'s Environment and Public Works committee.

Sensing resistance to the House-passed climate bill in the Senate, supporters of the legislation are promoting its non-environmental benefits. Agricultural stakeholders are being told that the legislation will bring them significant economic benefits via agricultural offsets (industrial sources paying farmers for low emissions cultivation and reforestation); Senator Mark Warner (D-VA) is emphasizing national security benefits from reduced "climate-induced migration" and other environmental stresses.

<http://www.eenews.net/EEDaily/2009/07/31/2/>

Senators Bob Casey (D-PA) and Mike Enzi (R-WY) have introduced the "Carbon Storage Stewardship Trust Fund Act" to address liability barriers to CCS technology. The bill creates an industry-financed Trust Fund to cover the expense of government management of long-term liability for stored CO₂. However, the provisions defining the conditions for handoff to the government (no risk to the environment) and the undefined cost of the industry fee may create their own barriers.

<http://casey.senate.gov/newsroom/press/release/?id=1DCC1F91-D977-4818-B6F4-9A5226A52B62>

ClimateWire (July 29) reports that the Obama administration is developing a plan with the Senate Foreign Relations Committee by which the U.S. would ratify the U.N. Convention on the Law of the Sea. The Law of the Sea took effect in 1994, but the U.S. has not ratified the treaty. The agreement's provisions related to member nation rights beyond a 200 mile "exclusive economic zone" has drawn attention with the warming of the Arctic making petroleum production more practical in that region.

Senator Rockefeller has distributed a draft bill calling for additional research on black carbon and other aerosols, and their impacts on global warming.

China & CCS

On July 28, the U.S. and China signed an MOU in Washington, creating what Secretary of State Clinton termed a “platform” for climate change action. The countries agreed to transition to a low-carbon economy, carry out policy dialogue, and cooperate on capacity building and RD&D of climate friendly technologies. One of the 10 cited technologies was coal with CCS. The MOU is available at: <http://www.state.gov/r/pa/prs/ps/2009/july/126592.htm>

The Associated Press reported that the European Union said Thursday it will give China up to \$70 million to build a carbon capture and storage plant that will test a technology aimed at limiting climate change. The EU’s executive commission says the money will help China develop coal-burning power stations that could capture carbon dioxide and bury it underground. During last month’s EU-China summit, Chinese Prime Minister Wen Jiabao asked Europe to help provide it with “clean coal” technology so China could curb emissions from coal-fired power stations.

China has taken advantage of a drop in electricity demand to speed up a campaign to close small coal-fired power plants. Authorities have closed power plants with a total of 7,467 generating units, meeting a previously announced goal 18 months ahead of schedule according to a representative of the cabinet’s National Energy Administration. Beijing is trying to improve its energy efficiency and reduce surging demand for imported oil and gas by closing smaller, less efficient power plants and encouraging use of wind, solar and other clean sources. [http://en.ndrc.gov.cn/mfod/t20081218\(underscore\)252224.htm](http://en.ndrc.gov.cn/mfod/t20081218(underscore)252224.htm)

At the same time, the key gauge of China’s energy efficiency improved 3.35% in January-June from the same period last year. This represents an increase of 2.88% compared to the first half of last year, according to the National Development and Reform Commission. (Energy Central, August 3)

The Director-general of climate change at China’s National Development and Reform Commission told Bloomberg that China cannot afford CCS, but is spending money on energy efficiency and renewable energy. China’s coal-based CO₂ emissions increased by 366 million tons from 2007 to 2008. http://www.bloomberg.com/apps/news?pid=20601072&sid=aVVBDsWL_W4

China’s three largest energy suppliers emitted more greenhouse gases than all of Britain last year, according to a report by environmental watchdog Greenpeace China. The report reflects the heavy reliance on coal. The country’s 10 largest power companies supply nearly 60% of China’s energy. They burned a fifth of all of China’s coal in 2008 and emitted about 1.44 billion tons of carbon dioxide. The three biggest companies - China Huaneng Group, China Datang Corp. and China Guodian Corp. - produced more greenhouse gases than Britain in 2008, according to the report, Polluting Power: Ranking China’s Biggest Power Companies. <http://www.greenpeace.org/china/en/press/reports/power-ranking-report>

CCS Analyses

Harvard’s Kennedy School of Government published a report (*Realistic Costs of Carbon Capture*) concluding that near-term CCS facilities will cost \$150 per ton of avoided CO₂, raising power costs by 10 cents per kilowatt-hour (\$110/t if escalation pressures relent); but Next-of-a-kind CCS facilities will be much cheaper – perhaps \$30-50 per ton. The lower prices will be possible via innovation and integration. http://belfercenter.ksg.harvard.edu/publication/19185/realistic_costs_of_carbon_capture.html?breadcrumb=%2Fproject%2F10%2Fenergy_technology_innovation_policy

EPRI has published an update to its 2007 “Prism” study of power sector technologies which could contribute to GHG mitigation in the U.S.

http://my.epri.com/portal/server.pt?open=512&objID=288&mode=2&in_hi_userid=2&cached=true

McKinsey & Co. has published a report concluding that \$1.2 trillion in (non-transportation) energy waste can be eliminated with \$520 billion in energy efficiency investment. Given that the report does not cover the transportation sector, it is not surprising that the bulk of the associated carbon reductions are from the electricity sector. The report “was produced in association with 13 leading institutions with a strong commitment to engaging the public in constructive debate.”

http://www.mckinsey.com/clientervice/electricpowernaturalgas/US_energy_efficiency/

The American Psychological Association has concluded that the American people rank climate change last on a list of 20 major issues because of psychological barriers (e.g., they do not believe risk messages), rather than an assessment that current legislative proposals are a bad idea.

<http://www.apa.org/releases/climate-change.html?imw=Y>

Reuters reports that Professor Greg Henry of the University of British Columbia said (in a conference call with reporters) that recent temperature increases in the Arctic have led to more methane and nitrous oxide (GHGs) emissions than predicted by models. Part of the temperature acceleration appears to be due to the improved survivability of larger plants with a darker, more heat absorbing nature.

<http://www.reuters.com/article/environmentNews/idUSTRE56S53E20090729>

Judith Lean (U.S. Naval Research Laboratory) has collaborated with NASA in an upcoming *Geophysical Research Letters* article which concludes that warming over the next 5 years will exceed IPCC estimates by 50%. The article challenges climate doubters by concluding that recent temperature stability (or cooling) is attributable to the 11 year sunspot cycle and El Nino events.

<http://www.guardian.co.uk/environment/2009/jul/27/world-warming-faster-study>

ClimateWire (August 5) provided an interesting article asking if the emergence of low-cost natural gas from shale resources might present a useful strategy to advance climate legislation. The idea is that the gas deposits correlate well with states having “swing” votes in the Senate, and those senators might vote favorably on climate legislation based on the shift from coal to gas favoring their constituents.

EU Countries & CCS

The 40 MW Doosan Babcock oxy-fuel demo has begun operation near Glasgow, Scotland. The compact burner is 56 feet x 18 feet x 18 feet, and will undergo test runs the remainder of this year. The project is funded at \$12 million. The project is a “catch and release” operation, the CO₂ will be released to the atmosphere. <http://www.reuters.com/article/GCA-GreenBusiness/idUSTRE56R00E20090728>

Financial Times reports that the 30MW-th Vattenfall oxyfuel Schwarze Pumpe project in northern Germany has been operational since last September, but has been venting captured CO₂ because it has not obtained the necessary injection permits. <http://www.ft.com/cms/s/0/293e40c6-7b0e-11de-8c34-00144feabdc0.html>

Reuters is reporting that the European Union has pledged to have 10-12 carbon capture and storage (CCS) demonstration plants in operation by 2015 and the technology fully commercialized by 2020. Britain will help fund up to four CCS trials and require new coal-powered plants to fit the technology within five years of it being proven viable, probably by 2020.

The energy company E.ON UK submitted a proposal for European funding in support of its proposed CCS development at Kings north in Kent. The company has already been short-listed in the UK Government's competition to demonstrate the capture, transportation and storage of carbon from a large-scale project and now hopes also to secure support from the European Energy Program for Recovery (EEPR). http://pepei.pennnet.com/display_article/366512/6/ARTCL/none/INDUS/1/EON-UK-makes-bid-for-European-carbon-capture-funding/

Australia & CCS

Australian Lawmakers are facing a vote on a climate change plan that would see Australia launch a domestic carbon trading scheme in mid-2011. The legislation faces almost certain defeat in Parliament's upper house, the Senate, in mid-August. The main opposition Liberal-National coalition's spokesman on climate change policy, Andrew Robb, said that his party will vote down the planned carbon trading legislation, and again called on the government to delay the debate until the first Parliamentary session of next year. The center-left Labor government wants to adopt a market-based carbon-trading system arguing that early action on climate change – before U.N.-led climate talks in Copenhagen in December – will strengthen Australia's international negotiating position and provide investment certainty for business. However, that position was dealt a blow when U.N. Climate Change head Yvo de Boer said Australia didn't need to have a domestic carbon trading scheme in place before the Copenhagen meeting. "What people care about in the international negotiations is the commitment that a government makes to take on a certain target, undertake certain action, to limit the growth of emissions," de Boer told Australian Broadcasting Corp. "The domestic policies that are put in place to then deliver on that are seen more as a domestic issue," he said. Robb said that the coalition supports putting a price on carbon emissions, and has already offered bipartisan support to a government target to reduce Australia's greenhouse gas footprint by between 5% and 25% on the level they were at in the year 2000 by 2020 – depending on the depth of any global climate deal. But it opposes the design of the current government scheme.

http://news.morningstar.com/newsnet/ViewNews.aspx?article=/DJ/200908030317DOWJONESDJONLINE000073_univ.xml

GE Energy in partnership with Stanwell and Xstrata PLC recently announced plans to seek funding from state and central governments in Australia for the planned construction of a 400 MW coal-fired power plant project with CCS to be located in Queensland. The proposed IGCC-CCS plant, to be located in Wandoan, southeastern Queensland, is expected to cost approximately AUD3.2 billion, which GE and its partners want to fund with financial support from the governments as well as through debt equity financing from global financial markets. The plant is expected to start operations in late 2015 to early 2016. (Energy Central, July 27).

Canada & CCS

The federal and Alberta governments may have to invest between \$1 and \$3 billion per year after 2015 to turn the business of capturing carbon into a viable commercial technology. A report by the Alberta Carbon Capture and Storage Development Council suggests that energy prices could rise as consumers shoulder "a large share of the burden" of the costs of the technology.

http://www.energy.gov.ab.ca/Org/pdfs/CCS_Implementation.pdf

South Africa & CCS

South African officials, who will lead the African block at Copenhagen climate discussions, have said rich nations should allocate at least 1% of global GDP to developing countries, for various climate mitigation and adaptation activities. <http://www.sfgate.com/cgi-bin/article.cgi?f=/n/a/2009/08/04/international/i031336D50.DTL&type=printable>

Law of the Sea Ratification

ClimateWire (July 29) reports that the Obama administration is developing a plan with the Senate Foreign Relations Committee by which the U.S. would ratify the U.N. Convention on the Law of the Sea. The Law of the Sea took effect in 1994, but the U.S. has not ratified the treaty. The agreement's provisions related to member nation rights beyond a 200 mile "exclusive economic zone" has drawn attention with the warming of the Arctic making petroleum production more practical in that region.



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.