

Impact on CCS  
of Federal Legislative Proposals  
by Darrick Eugene

**Lieberman-Warner - America's Climate Security Act of 2007**

Introduced in August of 2007, the Lieberman-Warner America's Climate Security Act of 2007 (S. 2191) was hailed as an important first step in the Senate to begin formal consideration of climate change legislation. Lieberman (ID-CT) and Warner (R-VA) are the chairman and ranking Member, respectively, of the Senate Environment & Public Works subcommittee on Private Sector and Consumer Solutions to Global Warming and Wildlife Protection.

The bill outlines a mandatory, market-based cap-and-trade program that would cover multiple sectors that contribute 80% of US Greenhouse gas emissions. With regard to CCS, the bill supports CCS through incentives, establishment of a legal framework and assumption of long term post-closure liability. First, the bill directs the use of 20% of the proceeds from auctioning allowances to public-private partnerships for commercializing geologic sequestration and CO2 capture technology used in coal-fired electricity generation.

Additionally, the bill contains a measure to set aside 4 percent of allowances through 2035 as bonus allowances for carbon sequestration. Specifically, the bill directs EPA, within three years of enactment, to take 4% of the allowances from 2012 through 2035 (i.e., 3.932 billion allowances total) and place them into a Bonus Allowance Account. EPA is directed to allocate the allowances as reward for firms that actually inject CO2 resulting from electricity generation into geological formations. The number of bonus allowances that a firm receives for injecting a metric ton of CO2 underground starts out at 4.5 in 2012 and gradually decreases, until it reaches zero in 2040. Presumably, these allowances can be traded by the receiving company or used to cover additional emissions.

Title VI of the bill calls for establishing a legal framework for the sequestration of carbon dioxide. The bill amends the Safe Drinking Water Act to require the EPA to form a Federal Advisory Committee (FAC), within 120 days after enactment, to develop regulatory options and identify additional research needed to support regulations for permitting commercial-scale CCS. The bill directs EPA to promulgate CCS regulations within two years of forming the FAC and report to Congress every five years on the effectiveness of the permitting program.

Regulations must include requirements relating to siting, injectivity, monitoring and verification, maintenance, closure, and post-closure. These requirements must encourage storage, provide for the protection of public health, safety, and the environment and of particular importance to today's companies – reward early action. Also, the bill requires the Director of the US Geological Survey to develop a methodology for assessing the nation's geological storage capacity and within three years of enactment, to complete the assessment.

Finally and most significantly, the bill establishes a public-private task force to propose to Congress, within two years of enactment, a legal framework for the Federal assumption of liability with respect to closed geological storage sites.

### **Low Carbon Economy Act of 2007**

Senate Bill 1766 (S. 1766), known as the “Low Carbon Economy Act” by Senators Bingaman (D-N.M.) and Arlen Specter (R-Penn), like ACSA is also an economy wide cap-and-trade bill designed to reduce the country’s GHG emissions. S 1766 would set an initial cap of 6,625 million metric tons of CO<sub>2</sub> equivalent per year in 2012 and decrease it every year approximately 100 million metric tons until 2026. After 2026, the decrease would accelerate to 200 million metric tons per year until 2030, and from 2030 onward the cap would stabilize at 4,819 million metric tons per year.

S. 1766 contemplates CCS in several provisions. Similar to ACSA, the bill sets aside CCS Bonus allowances. Like ACSA these bonus allowances are distributed to power generation entities that implement CCS projects beginning January 1, 2008. The qualifying entity is eligible to receive bonus allowances at a multiplier rate from 2012 through 2040. The bonus allowance multiplier rates remains at 3.5 for five years from 2012 to 2017, then decreases by 0.2 from 2018 to 2031 where it remains at 0.5 from 2032 to 2039 ending in the year 2040. Qualifying projects can receive annual bonus allowances for the first 10 years of operation. Furthermore, if the Bonus Allowances available for CCS are insufficient to enable the allocations required under the bill, the additional allowances will be deducted from allowances available for auction. Again these bonus allowances can be traded or used to offset emissions from other sources.

Additionally, within one enactment, the President must submit a report to Congress on the environmental, health, and safety issues surrounding the long-term storage of CO<sub>2</sub> in geological formations, including legislative recommendations for addressing liability for release of CO<sub>2</sub> from sub-surface formations.

Another method of recognizing CCS under S. 1766 is through offset credits. Under the bill, If the President determines that a regulated entity has sequestered carbon dioxide emissions in a geological formation, the President must provide that entity a quantity of credits equal to the CO<sub>2</sub> sequestered by that entity during the calendar year.

Finally, S 1766 creates the Energy Technology Deployment fund supplied by fund from the auction of allowances. Twenty five percent of the ETDF can be used to support Advanced Coal Generation Technology which includes technologies that provide for capture of significant quantities of CO<sub>2</sub>. Fully half of the money available in the ETDF must be used to carry out large-scale geologic carbon storage demonstration projects that use coal gasification or other advanced coal combustion processes. An owner of a project can be reimbursed for the incremental project capital and operating costs of the project that are attributable to CCS.

## **Department of Energy Carbon Capture and Storage Research, Development, and Demonstration Act of 2007**

Senate Bill 962 by Senator Bingaman (D-NM) reauthorizes and improves the Department of Energy's CCS research, development and demonstration program. The bill amends the Energy Policy Act of 2005 to direct the Secretary of Energy to: (1) carry out fundamental science and engineering research to develop and document new approaches to capture and store carbon dioxide; (2) ensure that fundamental research is appropriately applied to energy technology development activities and the field testing of carbon sequestration activities; (3) promote regional carbon sequestration partnerships to conduct geologic sequestration tests involving carbon dioxide in a variety of geological settings including operating and depleted oil and gas fields, unmineable coal seams, saline formations and deep geothermal systems; and (4) conduct at least seven initial large-volume sequestration tests for geological containment of carbon dioxide.

The bill gives preference to proposals from partnerships among industrial, academic, and government entities, in making competitive awards for field validation and testing activities. Finally the bill allocates \$305 million over the next three years to carry out CCS research, development and demonstration activities.

## **CO2 Pipeline Act of 2007**

In October 2007 Senator Norm Coleman along with Senator Ken Salazar introduced the CO2 Pipeline Act of 2007 (S. 2144). The bill directs the DOE, Commerce, Interior, the FERC and EPA to prepare a report and offer recommendations to Congress on the issues that are vital to fostering the development of a CO2 pipeline infrastructure in the U.S. Specifically, the bill requires the federal departments to prepare a report and make recommendations on a number of issues that will promote the development of a working CO2 pipeline infrastructure.

The report must consider safety, environmental impacts and right of way concerns. With regard to safety, the report must consider compression, leakage, inspection and injection issues. Most importantly, the report must closely examine environmental impacts of CO2 pipelines, including the question of whether CO2 will be regulated as a commodity or a pollutant. Finally the report must consider rights-of-way matters, and make recommendations about what, if any, incentives are necessary to encourage private sector lenders and developers to invest in new CO2 pipeline infrastructure.

## **National Carbon Dioxide Storage Capacity Assessment Act of 2007**

Senate Bill 731 (S. 731) Requires the Secretary of the Interior (Secretary), acting through the Director of the U.S. Geological Survey, to develop a methodology for conducting a national assessment of the geological storage capacity for carbon dioxide. The bill sets forth elements for the Secretary to consider in developing the methodology including the capacity and injectivity of storage formations in all 50 states; an estimate of recoverable oil and gas through CO2 injection and storage; and risks associated with potential storage formations. The bill requires the Secretary of Energy and the Administrator of the Environmental Protection Agency (EPA) to cooperate with the Secretary to ensure the usefulness and success of the assessment.

Requires the Secretary to: (1) provide the heads of stakeholder federal agencies, the heads of state land management agencies, industry stakeholders, and the public with an opportunity to review and comment on the proposed methodology; (2) convene a committee of subject matter experts to review the methodology for capacity and risk estimation; (3) publish a description of the final methodology and issue a public report that responds to the comments received and the methodology review; (4) complete a national assessment of geological storage capacity for carbon dioxide using the methodology; (5) establish a database on the Internet accessible to the public that provides the results of the assessment and includes the data necessary to rank potential storage sites for capacity and risk; and (6) report to Congress on the findings of the assessment. The bill authorizes a \$20 million appropriation for 4 years to carry out the Act.