CCS REGULATION

NEWSLETTER

Welcome to the CCS Regulation Newsletter. This is produced by the **MIT Carbon Capture and Sequestration Technologies Program**. It is a quarterly report designed to keep the reader up-to-date with the current regulatory news and issues surrounding Carbon Capture and Storage (CCS).
For more information about the program, please see http://sequestration.mit.edu

Federal CCS Regulation News and Update

September 20, 2012. Senators Conrad (D-ND), Enzi (R-WY) and Rockefeller (D-WV) introduced Senate Bill 3581. The aim of S.B. 3581 is to amend the Internal Revenue Code of 1986, Section 45Q: Tax Credit for CCS. Reform of Section 45Q would provide a guarantee for project developers to claim 45Q credits during the project planning stages and it is a key step to expanding CO_2 EOR in the U.S.
S.B.3581 aims to provide a $10 credit per metric ton for CO_2 stored through EOR and $20 per metric ton of CO_2 stored in deep saline aquifers. The Bill also establishes a national limit of tax credits to a total of 75 million tons of captured CO_2 from all projects. Individual projects may also receive 45Q credits for up to 10 years. It is anticipated that this Bill will boost CO_2 EOR and thereby increase domestic oil production by 60-117 million barrels.
http://www.c2es.org/blog/falwellp/energy-solution-with-true-bipartisan

September 20, 2012. The Energy and Commerce subcommittee is considering proposed legislation by Representatives McKinley (R-WV) and Rahall (D-WV) which would bar the EPA from moving ahead with CO_2 rules for new and existing power plants until CCS is found to be technologically and economically feasible and more readily available. The committee also heard industry and union officials discuss the EPA's CCS legislation with

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environmentalists.
http://www.globalccsinstitute.com/institute/news/house-subcommittee-wade-ccs-debate

October 25, 2012. Energy and Commerce Committee Chairperson Rep. Upton (R-MI) is conducting a study to examine tax loopholes and tax credits for oil companies. Rep. Mike Pompeo (R-KN) also joined Rep. Upton's request to the Government Accountancy Office (GAO) to push for legislation that would end credits for biofuels, renewable power production, carbon sequestration and other incentives.
Rep. Waxman (D-CA) has requested that the nonpartisan congressional auditors broaden the requested study to examine tax loopholes for oil companies.
http://thehill.com/blogs/e2-wire/e2-wire/264141-waxman-parries-upton-over-energy-subsidy-report

December 05, 2012. The National Resources Defense Council unveiled a proposal to cut carbon emissions from U.S. power plants. The proposal calls on the EPA to set standards under the Clean Air Act for existing power plants and proposes rules for biomass and other renewable energy technologies. The proposal enables states and power plants to use a wide range of existing technologies, to meet carbon reduction standards while creating thousands of clean energy jobs. The plan could reduce carbon emissions from power plants by 26% by 2020 and 34% by 2030. The plan is to cost $4 billion by 2020 but will save $25-60 billion and stimulate more than $90 billion in renewable jobs by 2020.
http://biomassmagazine.com/articles/8391/nrdc-proposal-calls-on-epa-to-regulate-power-plant-co2-emissions

State CCS Regulation News and Updates

California

October 2, 2012. The Governor of California has signed two bills to use the revenue raised through the sale of carbon allowances. The details as to where the $600 million and $3 billion in revenue will be spent has not been made public. However, under California state law, the money raised through the sale of carbon allowances must be spent on programs that help reduce the state's GHG emissions.
http://www.reuters.com/article/2012/10/02/us-california-carbon-idUSBRE89108C20121002?feedType=RSS&feedName=domesticNews

California

December 7, 2012. Sen. Michael Rubio reintroduced CCS legislation, Senate Bill 34, aimed at clarifying subsurface pore space ownership and patching regulatory gaps for the permitting of CCS projects in the state. The Bill underscores that subsurface pore space ownership in California lies with the surface landowner. It reasserts a previous provision from AB 32, the state's landmark 2006 climate law. It requires the state Air Resources Board adopt final protocols for CCS projects by 2016 and ensures that CCS and EOR projects are considered eligible emissions reduction technologies under AB 32.
http://ghgnews.com/index.cfm/california-state-senator-reintroduces-ccs-legislation/

Illinois

December 21, 2012. The Illinois Commerce Commission has approved a power procurement plan for the state that requires utilities to buy all of electricity generated at the FutureGen 2.0 facility for 20 years. The order requires Commonwealth Edison (ComEd) and Ameren Illinois to buy all the 166 MW of gross electricity generated annually at the $1.65 billion facility beginning in 2017, when the plant is expected to begin operations.
http://ghgnews.com/index.cfm/ill-regulators-approve-20-year-power-contract-for-futuregen/

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Class VI Project Plan Development Guidance Webinar Report

On September 20, 2012, the EPA delivered a webinar to introduce and summarize the completed Class VI technical guidance. This document is known as the *Underground Injection Control (UIC) Program Class VI Well Project Plan Development Guidance* which was released in August 2012. It has been published by the EPA to provide guidance to well owners and operators on the required elements of each plan and the site specific processes that are required when applying for a Class VI well permit.

When applying for a Class VI well permit, there are 5 plans which need to be submitted with the permit and approved by the UIC Program Director. The document outlines each plan, what is required and describes the process by which the UIC Program Director will evaluate and approve each plan.

The 5 plans are:

1. Area of Review (AoR) and corrective Action Plan
2. Testing and Monitoring Plan
3. Injection Well Plugging Plan
4. Post-injection Site Care (PISC) and Site Closure plan
5. Emergency and Remedial Response Plan

Each plan must be developed, reviewed and the knowledge updated to reflect the most scientifically up to date information throughout all phases of the project. This is an interactive process whereby each plan can be impacted or influenced by the other plans and as such the whole project is constantly being reviewed and improved.

Due to the nature of each plan, some like the Testing and Monitoring Plan will require more regular review than others. The Injection Well Plugging Plan is the only plan which does not require periodic review, however any changes to the plan must be approved by the UIC Director.

The EPA has given a number of examples of questions which the UIC Program Director will ask of each of the 5 plans in order to grant approval. The questions cover aspects of project safety, protection of the USDW, the use of the most up to date information, the safety of the injected CO_2, emergency plans, and so forth.

The *Class VI Well Project Plan Development Guidance* document can be downloaded here http://water.epa.gov/type/groundwater/uic/class6/upload/epa816r11017.pdf

Class VI Well Background:

The EPA's UIC program for CO_2 geologic sequestration, or GS Rule, was released in December 10, 2010. The GS Rule establishes a new class of injection wells: Class VI wells. The GS rule sets minimum federal technical criteria for Class VI wells with the main goal of protecting the USDW. The Class VI rule builds on existing UIC Program requirements, with extensive tailored requirements that address CO_2 injection for long-term storage to ensure that wells used for geologic sequestration are appropriately sited, constructed, tested, monitored, funded, and closed. The rule allows owners or operators injection depth flexibility to address injection in various geologic settings in the U.S., including very deep formations and oil and gas fields that are transitioned for use as CO_2 storage sites.

The final Class VI Rule and associated guidance documents are available at: http://water.epa.gov/type/groundwater/uic/wells_sequestration.cfm.

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International Regulatory News

New Zealand

November 11, 2012. New Zealand has invested $700,000 in research to better understand opportunities and risks with the deployment of CCS in New Zealand.
http://www.carboncapturejournal.com/displaynews.php?NewsID=1050&PHPSESSID=v9fgpl9fjjp5nemnjer9u0bbc6

Australia

November 15, 2012. A released white paper report has reported that Australia has the potential to reach 85% of its energy from renewable sources by 2020. The potential of CCS is projected at 417 GT, equivalent to 2000 years of storage.
http://www.ecoseed.org/politics/15799-australia-to-reach-85-percent-renewables-by-2050

EU-NER 300

November 16, 2012. Companies developing CCS projects in the UK have called on the EU to delay the NER300 funding decisions to allow for companies to secure financial assurances from the UK Government. The request came as the UK and other member Governments have failed to reassure the European Commission they would co-fund projects.
http://www.businessgreen.com/bg/news/2225236/ccs-companies-call-on-eu-to-delay-funding-decision

Malta

November 22, 2012. The Maltese Government has decided to undertake a feasibility study on a proposed CCS project by Sargas.
http://gozonews.com/26223/sargas-welcomes-government-decision-on-feasibility-study/

UK

November 23, 2012. The UK Energy Bill as been agreed upon after months of negotiations. The Bill allows new subsidy regimes for CCS and low carbon energy sources through 2050. The cost of these incentives will be born by the consumer at less than £100 to the average household's bills annually. The legislation also sets a GHG emissions performance standard (similar to the U.S. EPA's) that mandates the installation of CCS on all new construction coal plants. The decision on the 2030 decarbonization target has been postponed until after the general election in 2016.
http://www.businessgreen.com/bg/news/2226845/breaking-government-ditches-energy-bill-decarbonisation-target-until-2016

EU- ETS

November 30, 2012. The $148 billion EU Emissions Trading Scheme is struggling under the record low carbon price of 5.89 euros per ton. It is estimated that the carbon price needs to be over 20 euros per ton to persuade industry and utilities to adopt cleaner energy forms.
http://uk.reuters.com/article/2012/11/30/carbon-price-idUKL5E8MU1P820121130

COP

December 7, 2012. At the Conference of the Parties (COP) meeting in Durban last year, CCS was officially included in the CDM. There were two open issues left over: (1) whether to include CCS projects that have transboundary (i.e., multiple country) movement of CO_2 and (2) whether to set up a reserve of CDM credits as a trust fund for any future liability. At the COP meeting in Doha, there was no resolution. While the delegates agreed that these issues "merit inclusion" in the CDM, they decided to delay any final decision for four years to allow more time to gather information.
http://ghgnews.com/index.cfm/in-doha-ccs-advocates-look-to-iron-out-cdm-technical-details/

China

January 4, 2013. China is preparing its cap-and-trade program in 7 of its major cities. The Chinese government in November 2011 decided to implement cap-and-trade pilots in two provinces and five cities, including Shanghai, Beijing and Shenzhen, and in 2013 it is beginning with the final goal of implementing a nationwide exchange program by 2016.
http://ghgnews.com/index.cfm/experts-watch-as-china-moves-to-implement-cap-and-trade-in-2013/

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CCS Project News

Norway, Mongstad

October 9, 2012. Siemens, Hitachi, and Mitsubishi are among the companies bidding to be the next operators to use the world's largest CCS test bed. Norway's Technology Centre Mongstad opened in May with an invitation for developers to test their equipment, refine CCS processes, and accelerate efforts to reduce the cost of carbon capture technologies.
http://www.globalccsinstitute.com/institute/news/exclusive-siemens-hitachi-and-mitsubishi-vying-ccs-testing-slot

Australia, Gorgon

October 23, 2012. Chevron's Gorgon project was announced to be on track to start injection of 3.5MT CO_2/Yr in 2015. The liquified natural gas project in Western Australia is currently 55% complete. In December 06, 2012, Chevron announced that the project would cost an additional US $15 billion, bringing the total project cost to $52 billion. Other LNG projects in Australia have all seen a cost increase.
http://www.businessweek.com/news/2012-10-23/chevron-s-gorgon-carbon-project-on-track-for-injection-in-2015

http://www.energy-pedia.com/news/australia/new-152729

UK, Government CCS Competition

October 30, 2012. The UK Government has announced the 3 projects which have been short-listed for the UK Government's £1 billion CCS competition: Summit and Petrofac's Grangemouth project, Teeside Low Carbon Project and the White Rose Project at Drax in North Yorkshire. One or two of these projects will be awarded the funding soon.
http://www.bbc.co.uk/news/uk-scotland-tayside-central-20139291

Australia, South West Hub

November 5, 2012. The South West Hub, the first onshore CCS project in Western Australia, is moving ahead after positive results testing the storage capacity at the site.
http://www.captureready.com/EN/Channels/News/showDetail.asp?objID=2929

Decatur, Illinois, USA

November 25, 2012. The Decatur project has completed its first year of CO_2 injection. The project, run by the Illinois State Geological Survey, is the first demonstration-scale project in the United States to use CO_2 from an industrial source and inject it into a saline reservoir.
http://www.captureready.com/EN/Channels/News/showDetail.asp?objID=2937&isNew=

EU, NER300 project

December 7, 2012. ArcelorMittal has shelved its CCS project in NE France. The withdrawal of the funding application for the project at the Florange Steel Mill, means that there are now no CCS projects left in the running for the first round of €1.5 billion EU NER300 funding. The €300 million earmarked for the Florange project will now have to be reallocated or rolled over to the second round of EU funding.
http://www.businessgreen.com/bg/news/2230483/brussels-ccs-plans-left-in-tatters-as-arcelormittal-shelves-carbon-capture-project

Australia, Callide Oxyfuel

December 16, 2012. Callide-A Oxyfuel project has started its 2 year demonstration CCS project. The project is designed to capture and liquify 70 tons /day of CO_2.
http://www.mitsui.com/jp/en/release/2012/1199411_3607.html

Boundary Dam, Canada

December 19, 2012. Saskpower has signed a long term contract with Cenovus for the purchase of all the 1MT/Yr of CO_2 from its CCS project, Bounday Dam, which is due to go into commercial operation in April 2014. The CO_2 will be used for EOR at Cenovus's Weyburn-Midale EOR project
http://www.calgaryherald.com/business/energy-resources/SaskPower+signs+long+term+contract+with/7721237/story.html?__lsa=b9df-bd53

Aberthaw, Wales, UK

January 19, 2013. RWE has started a 3 MW, 50 CO_2 T/Day pilot project in Aberthaw power station in Wales, UK.
http://www.rwe.com/web/cms/en/97594/rwe-npower/about-us/our-businesses/power-generation/aberthaw/

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Publications and Releases

GCCSI

October 11, 2012. The Global Status of CCS: 2012 has been released by the Global Carbon Ccapture and Sequestration Institute (GCCSI). The main differences from 2011 was seen in the status of global projects. Over the last year there has been an increase in one large-scale integrated CCS projects to 75 total projects. Some projects have been cancelled but this has been offset by new projects. EOR is a big driver for new projects, especially in North America. The fastest growing region for CCS is in China, where there have been 5 new projects in the last year.
http://www.globalccsinstitute.com/get-involved/in-focus/2012/10/global-status-ccs-2012

CCS Standard

November 15, 2012. CSA Group and the International Performance Assessment Center for Geologic Storage of Carbon Dioxide (IPAC-CO_2) have announced the CSA Z741 Geologic Storage of Carbon Dioxide Standard, the world's first bi-national CCS standard for the geologic CO_2 storage for Canada and the United States. The standard was developed with a technical committee of more than 30 professionals from industry, regulators, researchers, and non-government organizations from both the U.S. and Canada. It is intended to also be used as a basis for international CCS standards by providing essential guidelines for regulators, industry, and others around the world involved with scientific and commercial CCS projects.
http://ipac-co2.com/uploads/File/PDFs/CSA%20IPAC-CO2%20CCS%20Standard%202012%20Final%20News%20Release%20v1%20copy.pdf.

IEA: Technology Roadmap

December 4, 2012. The IEA has released the Technology Roadmap: High-Efficiency, Low-Emissions Coal-Fired Power Generation. The roadmap describes the necessary steps to adopt and further develop technologies that improve the efficiency of coal fired power plants and reduce carbon emissions. The average efficiency of a coal fired power plant is currently 33%. Current technology can operate at a thermal efficiency of 45%. The roadmap outlines the plan to increase the global power plant's efficiencies in the next 10 years. Combined with CCS, high efficiency coal fired power plants would cut CO_2 emissions from coal fired power plants by 90%.
http://www.iea.org/publications/freepublications/publication/name,32869,en.html

DOE- Atlas

December 22, 2012. The DOE released the latest U.S. Carbon Storage Atlas. The DOE estimates that the U.S. has at least 2,400 billion metric tons of possible CO_2 storage resource. There is an estimated 225 billion metric tons of storage capacity identified in depleted oil and gas fields.
Press release: http://www.carboncapturejournal.com/displaynews.php?NewsID=1075&PHPSESSID=v9fgpl9fjjp5nemnjer9u0bbc6

Image: *Page 1: Alberta Oil Sands. Photographer: Garth Lenz http://www.eradicatingecocideincanada.org/this-is-ecocide-draft/*

This newsletter was constructed using information from internet searches. The websites used have been cited.

Holly Javedan compiled this report. For more information, questions and comments please email javedan@mit.edu. Thank you.