

# Weekly News Update

Friday 23<sup>rd</sup> March 2012 - Friday 30<sup>th</sup> March 2012



## *GCCSI Release (no link)*

### *Mou Between The Global Ccs Institute And The Department Of Climate Change, National Development And Reform Commission*

The Global CCS Institute and the Department of Climate Change, National Development and Reform Commission (DCC-NDRC) have signed a Memorandum of Understanding (MOU) regarding cooperation on carbon capture and storage (CCS).

"The potential for deploying CCS in China is considerable given China's large fossil energy use, significant coal reserves and coal-based industries" said Brad Page, CEO of the Global CCS Institute.

"Today's MOU signing signifies a concrete step in fostering closer cooperation between the DCC-NDRC and the Global CCS Institute and provides the framework for the delivery of future key joint initiatives," he said.

The key areas of cooperation identified under the MOU include: the promotion of technical and non-technical cooperation; encouraging further research, development and demonstration projects; developing industrial and academic networks; and promoting greater cooperation on CCS both within China, and internationally.

A two-day course on CO<sub>2</sub> Storage and Enhanced Oil Recovery is being held in conjunction with the MOU Signing Ceremony, marking the first joint initiative under the MOU. The course has attracted great interest from a range of stakeholders, including some of the most prominent state-owned power generators and oil and gas companies in China.

"China attaches great importance to addressing the climate challenge and CCS can be an important tool for controlling and reducing carbon emissions. China attaches great importance to the demonstration and deployment of CCS technologies," said Su Wei, Director General of DCC-NDRC.

"CCS still faces some challenges including the high cost and energy penalty and while costs are likely to come down as we improve our understanding and optimisation of the technology, the utilisation of CO<sub>2</sub> for EOR and other industrial purposes will be important to our development pathway."

"The Global CCS Institute is a valued partner of DCC-NDRC and we look forward to strengthening our engagement with the Institute and building on the great work already being done," Su added.

NDRC is China's lead governmental body responsible for formulating and implementing strategies of national economic and social development, including addressing climate change and developing CCS. DCC-NDRC joined the Global CCS Institute on behalf of the Government of the People's Republic of China as a Foundation Member in 2008 and formalised their membership by signing on as a Legal Member in 2010.

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## *U.S. to propose first climate limits on power plants*

(Reuters) - The Obama administration will propose as soon as Tuesday the first ever standards to cut carbon dioxide emissions from new power plants, sources involved in talks on the matter said - a move that is likely to be hotly contested by Republicans and industry in an election year. The Environmental Protection Agency is expected to propose the long-delayed rules, known as New Source Performance Standards, that would effectively limit emissions of all new U.S. power plants to those of efficient natural gas plants. "Tuesday could be the day," said one source close to the administration. Opponents of the rules, which include Republicans and some Democrats from energy-intensive states, say they will prevent companies from building new coal plants since coal plants emit roughly double the carbon dioxide as natural gas. The EPA's overall clean-air efforts have divided the power industry between companies that have moved toward cleaner energy, such as Exelon and NextEra, and those that generate most of their power from coal, such as Southern Co and American Electric Power. The sources said, however, that coal plants could add equipment to capture and bury underground for permanent storage their carbon emissions. The rules would likely give any new coal plants time to get those systems running, by requiring that they



average the emissions cuts over decades, they added.

Record low prices for natural gas and the looming air rules have pushed many companies to put older coal plants into retirement. The EPA is moving forward on the climate rules, which do not need to be approved by Congress, after a wide-ranging climate bill died in the Senate in 2010. Environmentalists who were stung by President Barack Obama's decision last September to delay a major smog rule, cheered the prospect of performance standard rules they say will help protect the country from climate change. "The bottom line for our country is that cleaner power will cut harmful carbon dioxide pollution, protect our children and help secure a safe prosperous future," said Vickie Patton, the general counsel for the Environmental Defense Fund.

The rules are expected to affect only new plants, not modified plants, which would be a concession to industry. Existing plants would not be included, but the new proposals could set the stage for the EPA to regulate them in the coming years. The EPA's clean air chief Gina McCarthy has said there's no guarantee the rules will be finalized before the November 6 election, which means they could be more easily overturned if Obama lost the election. The EPA did not immediately comment on when the rules would be proposed.

#### *EPA proposes carbon regulations for utilities*

The US Environmental Protection Agency (EPA) unveiled new greenhouse-gas standards for power plants on Tuesday, at last following through with the authority granted under a 2007 Supreme Court ruling declaring carbon dioxide a pollutant under the Clean Air Act. The new regulation would effectively ban new coal-fired power plants in the United States unless they are equipped to capture and sequester carbon dioxide. Advanced natural-gas plants would meet the standard without additional mitigation technologies, and existing power plants would be grandfathered in. For the technically minded, the regulation would require new power plants to emit no more than 1,000 pounds of CO<sub>2</sub> per megawatt-hour of electricity produced, one of many details laid out in plain English here.

So what does this mean in practical terms? One never knows about the future, but clearly the short-term impact will be minimal: cheap natural gas flowing from plentiful shale deposits may have already pushed coal out of the market for new power generation. But the new standard is nonetheless a sign of the times. If simple economics isn't enough, regulations aimed at conventional pollutants such as mercury are already beginning to affect coal-fired power generation. And looming in the background, still, is global warming. The United States might have turned its back on comprehensive climate legislation for now, but electric utilities assess their assets and liabilities on timescales that are more sensitive to longer-term shifts in climate, both physical and political. The bottom line is that Big Coal doesn't look like a growth industry at the moment. Ultimately, these issues will be settled in the courts, but many analysts are nonetheless forecasting an active retrenchment as utilities shut down old and inefficient power plants over the coming decade. As discussed in an earlier post, this is in large part what is driving the political backlash against the EPA. That and the fact that the EPA is an easy political target.

The question on many minds is how much this or any administration can accomplish on climate under existing laws, given Congress's inability to deal with the issue. In addition to power plants, the EPA under Barack Obama has also tackled greenhouse-gas emissions from vehicles, which was what got things started at the Supreme Court back in 2007. As it happens, the World Resources Institute (WRI) set out to answer this question in 2010. Looking at both state and federal regulatory programmes, WRI researchers sought to determine whether the United States could conceivably keep its international commitment to reduce greenhouse gases to 17% below 2005 levels by 2020 without any additional federal legislation. Their answer, documented here, was almost. But not quite.

#### *ThermoEnergy Expects Proposed Obama EPA Carbon Regulations to Spur Adoption of Clean Combustion Technologies - company Sees Growth Opportunity*

WORCESTER, Mass., March 28, 2012 -- ThermoEnergy Corporation Chief Executive Officer Cary Bullock expects that the Obama Administration's EPA-proposed first carbon pollution standard for future power plants will spur the adoption



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of technologies like ThermoEnergy's to eliminate air pollution from coal-fired plants. In reacting to the EPA's newly proposed carbon standard announced this week, Bullock said, "While the EPA Clean Air Act proposal is aimed at new power plants, ThermoEnergy's clean combustion technology can also be used to retrofit existing power plants to meet the new EPA regulations for both air and carbon emissions," Bullock said. "We welcome the challenge to clean up the emissions coming from power plants here in the U.S. and around the globe," Bullock said. ThermoEnergy owns patented technology for clean coal combustion that enables a coal-fired plant to eliminate its smoke stacks, Bullock noted. ThermoEnergy's clean combustion technology would allow power plants to burn coal with near-zero carbon and air polluting emissions. The ThermoEnergy process efficiently captures carbon dioxide in clean form for sequestration or beneficial re-use.

ThermoEnergy's technology is based on "pressurized oxy-combustion." Pressurized oxy-combustion replaces air at normal atmospheric pressure in coal-fired plants with highly purified oxygen at high pressures, creating significant improvements in both environmental and economic performance over competing technologies. Coal burns more cleanly and efficiently in high pressure oxygen than in normal air. In addition, the high pressure makes it possible to condense--or turn into liquid--the gasses that are normally emitted through the smokestack into the air. As a result, nearly 100% of the conventional pollutants can be captured, eliminating pollution from the smokestack. Virtually all of the carbon dioxide can be captured as well.

ThermoEnergy has pointed out that new EPA air emissions standards will likely result in the elimination of about 70 gigawatts of conventional coal-fired power capacity over the next 2-8 years, representing \$40 billion in annual power contracts. The company has noted that retrofitting those plants with pressurized oxy-combustion technology could allow those plants and others to be transformed into clean, efficient electricity generators, taking advantage of existing coal supplies. The technology would also allow the creation of new clean coal plants that are able to use the world's abundant supplies of cheap coal.

PRESS RELEASE. March 28, 2012, 8:00 a.m. EDT

<http://www.marketwatch.com/story/thermoenergy-expects-proposed-obama-epa-carbon-regulations-to-spur-adoption-of-clean-combustion-technologies-2012-03-28>

### *Nearly-complete coal plants won't be affected by EPA CO<sub>2</sub> rule*

Representatives of several nearly-completed coal power plants in the Midwest and Mid-Atlantic said March 28 that they don't expect the U.S. EPA's just-released standard on carbon dioxide to have any impact on their new units. Coal power supporters have said that EPA set the CO<sub>2</sub> standard so low that only combined-cycle natural gas plants appear ready to meet it. But EPA's first Clean Air Act standard for carbon pollution won't affect existing units already operating or units that will start construction over the next 12 months, the agency said in its March 27 news release. As a couple of public affairs people noted, these plants were licensed and under construction years before EPA released its greenhouse gas emissions rule. A spokesperson with Dominion Resources (NYSE: DOM) said the EPA standard should have no impact on the company's Virginia City Hybrid coal-and-biomass plant in Wise County, Va. The 585-MW, \$1.8bn project is expected to begin operation in early June. Similar statements were made on behalf of a Duke Energy (NYSE: D) spokesperson on behalf of that company's Edwardsport coal gasification power plant in Indiana as well as its new 825-MW Cliffside coal unit in North Carolina. Both those plants are expected to open within a few months. Like Dominion's Virginia Electric Power, Duke subsidiaries in Indiana and the Carolinas agreed to idle several older, more emitting coal units prior to winning approval for the new coal plants. A Duke spokesperson said that Duke has been studying the potential for carbon capture and storage at the Edwardsport integrated gasification combined-cycle plant. There are, however, no current plans for CCS at either the Indiana or North Carolina projects, the spokesperson said. Dominion's Virginia City project has space set aside for carbon capture and has made plans to explore the idea in cooperation with Virginia Tech's Virginia Center for Coal and Energy Research.

Another plant that is scheduled to open soon is the 1,600-MW Prairie State coal plant in southwestern Illinois. Initial development of the mine-mouth Prairie State facility



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was done by Peabody Energy (NYSE: BTU) a decade ago. Today Peabody is listed as one of nine owners of the Prairie State complex with the largest stake in the venture held by American Municipal Power (AMP). While these plants might see little impact from the CO<sub>2</sub> standard, if it survives legal challenge, the picture is less clear for the planned 582-MW Ratcliffe IGCC plant that Southern Co. (NYSE: SO) subsidiary Mississippi Power is developing in Kemper County, Miss. That plant, which would use locally-mined lignite, would however employ carbon capture and plans to then sell the CO<sub>2</sub> for possible enhanced oil recovery.

"We are reviewing the complex and lengthy proposal to evaluate its potential impact," said a Mississippi Power spokesperson. "Upon commercial operation, the Kemper IGCC Project will capture 65% of the carbon dioxide it produces," he added.

A Bernstein Research analysis on March 28 notes that EPA has exempted what it calls "transitional sources" or power plants that have already received their pre-construction air permits under the Clean Air Act. These projects appear to be in good shape so long as they start construction by March 27, 2013, Bernstein said.

"Thus, of the 16 GW of coal fired capacity currently in advanced development, we calculate that some 11 GW, or almost three quarters, are transitional sources," according to Bernstein Research

### ***Presidential Race Vital to Coal's Carbon Emissions - EPA Ruling Part of Coal's Concerns***

The 2012 presidential election will determine whether the country continues to travel its current route or whether it takes a different direction. No issue is more notable than the future of coal-fired electric generation that now comprises about 45 percent of the market. The Obama administration delivered a potentially fatal blow to coal this week, announcing a proposal that any new coal-burning facility would have to emit 43 percent less carbon than current coal units. That means that they would have to be as clean as today's natural gas plants -- a move that would effectively ban any coal plant that does not have carbon capture and sequestration. And because those technologies are a still a distant dream, don't expect any new such plants to be built -- unless a new team takes over the White House. The rule would not affect any current plants or those that are about to put shovels in the ground. The older coal units, however, must still comply with the new rules tied to mercury and sulfur.

### ***EPSRC announces over £950M commitment to support science challenges of our times***

Significant funding for research, that addresses both the societal and economic challenges facing the UK and the world, and enables and sustains a resilient science base, will be made available in the coming 2012/13 financial year the Engineering and Physical Sciences Research Council (EPSRC) announced today.

The total committed budget for the coming year will be in the order of £950M. The opportunities will be across the EPSRC portfolio, through both managed calls and application for discovery-led research, and the Council is encouraging the engineering and physical sciences community to regularly check the open and future calls section on its website when considering funding plans.

### ***Written Ministerial Statement from Edward Davey, Secretary of State for Energy and Climate Change: Update on Government Support for CCS***

'I am writing to inform you that during recess I will launch the CCS Commercialisation Programme - the Government's competition for CCS - and publish our CCS Roadmap.

CCS has the potential to be one of the most cost effective technologies for decarbonisation of the UK's power and industrial sectors, as well as a significant green growth opportunity.'

### ***New Center for Carbon Measurement to drive UK's low carbon economy***

The National Physical Laboratory (NPL) launched its Centre for Carbon Measurement, which will ensure the UK leads the world in climate modelling, global carbon markets and green technology. Business and government have welcomed the



project, highlighting its potential to reduce emissions and stimulate the economy.

The UK, like most nations, is implementing policies to meet emissions reduction targets through clean energy generation, improved efficiency, developing low carbon technology and behavioural change. Scientifically underpinned carbon measurement is critical to achieving all of these. The Centre will provide reliable climate data on which to base policies; support international regulations and voluntary schemes for carbon trading and monitoring; and help to develop and measure the performance of low-carbon technologies.

The Centre has received vocal support from government, academia and large and small business. Organisations that expect to benefit from the centre include E.ON, The National Grid, The National Centre for Atmospheric Science, Coventry University and Surrey Satellites.

### ***CCC comments on Emissions Performance Standard (EPS) for gas-fired power generation***

The Committee today wrote to Ed Davey about DECC's recent announcement on the Emissions Performance Standard (EPS) for gas-fired power generation. The EPS would allow unabated gas-fired generation from new plant through to 2045.

The letter states that approach set out in the announcement could be compatible with power sector decarbonisation required to meet carbon budgets, but also carries the risk that there will be too gas fired generation instead of low carbon investment.

The Committee suggests that In order to mitigate this risk, it is important that a clear decarbonisation objective is set for the EMR, and that a process is put in place to ensure that this objective is achieved. They argue that this would help to resolve some of the uncertainties that currently undermine the investment climate for low-carbon power generation.

To read the letter: [http://downloads.theccc.org.uk.s3.amazonaws.com/Letters/EdwardDaveyMP\\_Letter270312.pdf](http://downloads.theccc.org.uk.s3.amazonaws.com/Letters/EdwardDaveyMP_Letter270312.pdf)

### ***Green Alliance publish two reports***

Green Alliance has today published two reports both focused on the future of CCS.

The first, called Securing a second chance for UK carbon capture and storage, shows how successive delays in the UK's carbon capture and storage (CCS) programme risk undermining the government's strategy to meet both carbon budgets and get new gas power plants built in the short term.

The report finds that continued delays to CCS demonstration could mean power sector emissions would be nearly 80 per cent higher by 2030 than limits suggested by the Committee on Climate Change.

The second report, called The practical potential for gas carbon capture and storage in Europe in 2030, identifies that the majority of gas plants in the EU will be unready or unable to deploy CCS by 2030 if current policies are pursued.

Full details on the reports are available from [Green Alliance's website](#).