

# Weekly News Update

Saturday 7th January 2012 - Friday 13th January 2012



## *China weighing green benefits of carbon taxation*

China is considering levying a carbon tax within the next three years to tighten its regulations on polluting industries and put the economy on a greener path. A draft of a new system of taxation has been submitted by the Fiscal Science Research Center of the Ministry of Finance to the ministry for review. The plan would impose a tax on emissions of greenhouse gases, Su Ming, deputy director of the center, said on Thursday. Su said the tax is likely to be charged at a rate of 10 yuan (\$1.59) for each tonne of carbon dioxide that a business or other operation discharges. That rate is expected to increase gradually over time. The main targets of the tax will be large users of coal, crude oil and natural gas, and tax cuts will be given to companies that take steps to reduce their emissions, Su said. Jiang Kejun, a researcher with the National Development and Reform Commission's Energy Research Institute, who helped draft the tax proposal, said the tax is likely to be collected only from producers and wholesalers of fossil-fuel based energy. This will make it easier to collect the tax. "But it may still raise the price of energy," Jiang said.

## *EPA releases 2010 GHG data*

For the first time, the U.S. Environmental Protection Agency has released greenhouse gas (GHG) data reported directly from large facilities and suppliers as a part of its GHG Reporting Program. EPA's online data publication tool allows users to view GHG data for 2010 from the largest GHG emitting facilities in the U.S. Users can navigate over 6,700 facilities in a variety of ways—including by facility, location, industrial sector, and the type of GHG emitted. For example, power industry users can use the tool to view GHG emissions from power facilities within certain geographic regions. The GHG data collected from 2010 showed that power plants were the largest stationary sources of direct GHG emissions, with 2,324 million metric tons of carbon dioxide equivalent (mmtCO<sub>2</sub>e). The data also revealed that CO<sub>2</sub> accounted for the largest share of direct GHG emissions with 95 percent, followed by methane with 4 percent, and nitrous oxide and fluorinated gases accounting for the remaining 1 percent.

Additionally, the data shows that 100 facilities each reported emissions over 7 mmtCO<sub>2</sub>e, including 96 power plants.

Mandated by Congress through the FY2008 Consolidated Appropriations Act, EPA launched the GHG Reporting Program in October 2009.

"The GHG Reporting Program data provides a critical tool for businesses and other innovators to find cost- and fuel-saving efficiencies that reduce greenhouse gas emissions, and foster technologies to protect public health and the environment," said Gina McCarthy, assistant administrator for EPA's Office of Air and Radiation.

To access EPA's GHG Reporting Program Data and Data Publication Tool, go to <http://epa.gov/climatechange/emissions/ghgdata/>.

For more information on the GHG Reporting Program, go to <http://epa.gov/climatechange/emissions/ghgrulemaking.html>.

<http://www.power-eng.com/articles/2012/01/epa-releases-2010-ghg-data.html>

## *Depleted Gas Reservoirs can double as Geologic Carbon Storage Sites*

A demonstration project on the south eastern tip of Australia has helped to verify that depleted natural gas reservoirs can be repurposed for geologic carbon sequestration, which is a climate change mitigation strategy that involves pumping CO<sub>2</sub> deep underground for permanent storage.

The project, which includes scientists from Lawrence Berkeley National Laboratory (Berkeley Lab), also demonstrated that depleted gas fields have enough CO<sub>2</sub> storage capacity to make a significant contribution to reducing global emissions.



### ***Seoul opens first carbon capture research center***

South Korea on Tuesday opened its first research center dedicated to the development of new technologies to capture and process carbon dioxide in an effort to transform its battle against global warming into a potentially lucrative business.

The new Carbon Capture and Sequestration (CCS) Research Center will spend up to 173 billion won in the next nine years to develop new technologies to capture, transport and store carbon dioxide, a main cause of climate change, according to the Ministry of Education, Science and Technology.

### ***Global CCS Institute updates large-scale projects through December 2011***

The Global CCS Institute recently issued its quarterly update of large-scale integrated carbon capture and sequestration projects, or LSIPs, around the world. The institute tracks LSIPs through global news reports and input from its representatives.

The last quarterly report was issued in October 2011. In March 2011, the institute had reported that the number of large-scale projects around the world totaled 77 in 2010, a net increase of 13 over 2009. As of December 2011, however, the institute identified 74 LSIPs, including 15 operating or in construction, with a total confirmed capture capacity of 35.4 million tonnes per year of CO<sub>2</sub>. Another 59 LSIPs, in the planning stages, have an additional potential capture capacity of more than 122 million tonnes per year.

### ***Market Research Predicts Clean Coal Technologies at \$85 Billion by 2020***

MarketResearch.com has announced the addition of the new report "Clean Coal Technologies Markets and Trends Worldwide, 2nd Edition" to their collection of Energy market reports. For more information, visit <http://www.marketresearch.com/SBI-v775/Clean-Coal-Technologies-Trends-Worldwide-6447642/>

Coal is expected to continue to be a dominant fuel in power generation due to its low cost and abundance. Nearly 7 billion tons of coal were produced globally in 2010, and over 40% of global electricity was coal powered. On a cost of production basis, the global market value of coal-fired electricity exceeded \$400 billion. Nonetheless, conventional coal power generation is a leading contributor to global greenhouse gas emissions and is increasingly being regulated and dis-incentivized. Further, clean and renewable energy sources are beginning to challenge conventional fossil fuels.

SEMINAR: All Party Parliamentary Coalfield Communities Group  
Chair: Dave Anderson MP

#### **ADVANCE NOTICE - INDUSTRIAL POLICY AND CLIMATE CHANGE**

Date: Tuesday 28<sup>th</sup> February 2012

Time: 2.30 pm until 4.30 pm

Venue: Boothroyd Room, Portcullis House, Westminster

This key policy seminar is being convened jointly by four all-party parliamentary groups:

- Coalfield Communities Group – Chair: Dave Anderson MP
- Clean Coal Group – Chair: Brian Binley MP
- Energy Intensive Industries Group – Chair: Tristram Hunt MP
- Steel and Metals Group – Chair: Tom Blenkinsop MP

Speakers invited include:

Energy Intensive Users Group, Engineering Employers Federation, Carbon Capture and Storage Association, Clean Coal Task Group

Other organisations invited will include:

Industrial Communities Alliance, Energy Intensive Users Group, Carbon Capture and Storage Association, Clean Coal Task Group, Engineering Employers Federation, Tata Steel, Coalpro, TUC and individual trade unions



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## ***RWE seeks alliance to create biomass from CO<sub>2</sub>***

RWE Power is set to expand a multi-million Euro project designed to turn carbon dioxide into biomass, marking a major step forward for its 'clean coal' programme.

Together with biotechnology company BRAIN, RWE this week announced it had reached a major milestone in a project that aims to find micro-organisms that can eat up CO<sub>2</sub> and create bio-materials. After examining more than 3,000 micro-organisms during the last two years, researchers from BRAIN have now identified 29 which could grow in flue gases from coal plants by directly 'feeding' on CO<sub>2</sub>.

## ***Scientific breakthrough on a carbon dioxide super-scrubber lauded***

Using cheap, readily available materials, a team of chemists has developed a new compound for drawing carbon dioxide out of the atmosphere. The compound holds the potential to drive down the cost of capturing carbon, although it's too early to say by how much, the scientists say.

The results "add to the list of possible materials that can absorb CO<sub>2</sub> from the air, and it potentially could be quite a good one," says Klaus Lackner, who heads the department of earth and environmental engineering at Columbia University in New York and was not part of the team formulating the material.

Capturing carbon represents one approach to combating human-triggered global warming, which most climate scientists attribute in some degree to increases in atmospheric carbon dioxide from industrial activity as well as to carbon dioxide released through land-use changes.

Aside from the relatively low cost of the materials needed to make the new CO<sub>2</sub> sponge, the compound can absorb significant amounts of CO<sub>2</sub>. It can endure several cycles of absorbing and releasing the gas for sequestration or recycling. And the energy needed to release the gas is low compared with many current materials.

## ***Clean Energy Innovation Roundup (1-6-2012)***

Here are some of the top clean energy innovation-related news stories, analysis, and commentary from the last week (and some from the holiday break):

Emerging innovations key to driving down cost of clean energy in 2012 and beyond. McKinsey Quarterly (reg. req.) provides its top 5 clean tech innovations to watch in 2012 including next-gen utility-scale storage, advanced ICT-enabled power conversion systems, new energy efficient air conditioning and window technologies, \$2/gallon algae-based fuels, and significantly cheaper CCS.

And efforts to make these breakthroughs a reality are already in development. The Carbon Capture Simulation Initiative – a national lab/university/industry partnership - are developing state-of-the-art simulation and modeling tools to accelerate the development of cheaper carbon capture technologies. A USC-led research group has developed a breakthrough absorbent technology that is more efficient at stripping carbon from coal smokestacks and could play a role in sucking CO<sub>2</sub> out of the atmosphere. The Pennsylvania-based EOS Energy Storage is starting manufacturing on a utility-scale zinc-air rechargeable battery that has three times more capacity than a lithium equivalent and is much cheaper to produce. And a publically supported New Jersey solar start-up, Natcore, is implementing an innovative, new manufacturing process that will make solar cells more efficient at less cost.

## ***Shell Strikes Coalbed Natural Gas Recovery R&D Deal With Luca Tech***

A subsidiary of Royal Dutch Shell PLC is working with a privately held company to figure out how to extract natural gas from depleted coal seams, according to a regulatory filing.

Luca Technologies Inc. and Shell International Exploration and Production Inc. entered the first phase of a research and development collaboration on Dec. 16, according to an amended prospectus for Luca's planned initial public offering. Luca said the arrangement may become a multi-year program.

"Shell will provide both personnel and financial support," Luca said.

The companies couldn't immediately be reached for comment.



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## ***Scientific breakthrough: Remove CO<sub>2</sub> from pollution and atmosphere for alternate fuel***

An improved method of removing carbon dioxide (CO<sub>2</sub>) cheaply from industrial smoketacks and even scrubbing the air has been discovered which may help in stabilising climate and reducing carbon emissions. Resolving the huge problem of climate change and global warming is going to take significant action on many levels. This new technology, if it can be rapidly developed and commercialised, may prove extremely useful in reducing carbon emissions and ultimately helping our society to become carbon negative. But the scientists have gone a further step and propose turning the captured carbon dioxide into an alternate stable fuel called renewable methanol to assist in resolving the peak oil petroleum resource depletion problem.

## ***CCS legal and policy - Jan / Feb 2012***

*2011 has seen its fair share of CCS related legislative activity and the amount of legislation, regulation and policy that must be considered by CCS developers continues to rise. This edition's column looks at some of this and highlights a few of the issues which continue to vex and perplex as we enter 2012.*

### **International**

Starting at the international level, recent developments in Durban at the 17<sup>th</sup> Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC) have the potential to affect CCS projects everywhere. The inclusion of CCS projects in the UN's Clean Development Mechanism (CDM) is a breakthrough that has been a long-time coming. The CDM allows authorised CO<sub>2</sub> emissions reduction projects in developing countries to earn Certified Emission Reductions (CERs) in proportion to the CO<sub>2</sub> emissions that the project avoids.

## ***EU-GCC Clean Energy Network to host second annual conference at World Future Energy Summit 2012***

The EU-GCC Clean Energy Network, which aims to advance the common interest between the EU and the GCC regions for strategic cooperation, announced it will host its second annual conference concurrently with the World Future Energy Summit (WFES) 2012 in Abu Dhabi.

Organized under the patronage of His Highness Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, WFES 2012 will be held from 16-19 January 2012 at the Abu Dhabi National Exhibition Centre (ADNEC).