

CCS Alliance Update — March 21, 2011

1. New Senate Bill to Reinstate Advanced Energy Manufacturing Tax Credit

- ◆ Senator Sherrod Brown (D-OH) has introduced a new bill that would reinstate the Advanced Energy Manufacturing Tax Credit program (known as the 48C program). The program was originally funded by the American Recovery and Reinvestment Act of 2009 but became oversubscribed, with many eligible projects remaining in the pipeline after initial funds ran out. The new bill would reinstate the tax credit, which provides a 30 percent investment tax credit for manufacturing equipment for renewable energy or energy conservation projects that reduce greenhouse gas emissions, including carbon capture and storage (“CCS”) technology. Senator Brown’s bill, S. 591, is cosponsored by four other senators and has been assigned to the Senate Finance Committee.

2. New Scrubber Could Convert CO₂ for Multiple Uses

- ◆ A new emissions scrubbing technology could be used to trap CO₂ and recycle the gas into other useful products such as paper, windows, or even food for shrimp and other farmed sea creatures. The scrubbing technology, developed by American company Skyonic Corp., traps CO₂ and uses the gas to make sodium and calcium bicarbonates. These materials can be used as a base to grow algae that shrimp consume, or can be used to produce paper and glass. Skyonic believes that revenue generated from selling these products can offset the cost of retrofitting existing and constructing new power plants with the scrubbers. Skyonic has proposed to build a system that would be retrofitted to a British power plant. Skyonic’s technology costs approximately \$23 per ton of CO₂ captured and recycled, compared to cost estimates of \$135 per ton for underground storage of the gas, according to climate change analyst Meg Brown of Citigroup.

3. U.K. Company Uses CO₂ From Landfill Emissions to Make Construction Materials

- ◆ A team of scientists in the United Kingdom are developing a process that burns landfill-generated methane, captures the CO₂ emissions, and recycles the captured gas into construction materials. The researchers are founders of Carbon8 Systems Ltd., and have commercialized “accelerated carbonation” technology that treats industrial wastes and contaminated soils. The technology uses methane emitted by decomposing waste as a fuel for a specially designed boiler, which then generates a CO₂ stream that is used to treat the ash generated by waste incineration. When combined with the ash, the CO₂ forms aggregate materials that can be used for construction. The process is a low-cost option for recycling CO₂ and takes only minutes to complete. Carbon8 has worked with major commercial organizations such as Shell and BP to further develop the accelerated



carbonization technology. It has recently licensed the technology for treating incinerator ashes in the U.K. and is working to secure funding for its first commercial plant. The company also is exploring project opportunities in the U.S. and Canada.

4. Scottish Sandstone Formation Has CO₂ Storage Potential

- ♦ A large sandstone formation under the North Sea off the coast of Scotland has the potential to store a minimum of 15 years' worth of CO₂ emissions from Scotland's power stations, according to a recent industry-sponsored study. The study, backed by the Scottish CCS Consortium, states that the Captain Sandstone formation could potentially store up to 100 years' worth of emissions. Three Scottish firms that helped fund the study are also competing for U.K. and European funding to complete CCS demonstration projects.

5. Global Increase in CCS Projects for 2010

- ♦ A new study by the Global CCS Institute states that the number of global CCS projects rose by 10 percent in 2010, in large part due to financial assistance from the U.S. government and other industrialized nations. The 2009 stimulus package, coupled with similar economic recovery efforts of other nations, helped to boost the number of active and planned projects in 2010 to 234, a net increase of 21 new initiatives for the previous year. The study also found that significant progress was made in 2010 on legal and regulatory frameworks, including issues such as pore-space ownership.

6. E.U. Releases Low-Carbon "Road Map;" Assumes Major Success with CCS

- ♦ The European Union ("E.U.") has released its "road map" for moving to a low-carbon economy. The road map calls for spending of \$375 billion (US) a year to cut greenhouse gas emissions by at least 80 percent by 2050. The road map envisions E.U. power generation as almost completely de-carbonized by 2050, achieving emissions reductions of 93 to 99 percent. This assumes widespread adoption and use of CCS technology after 2030. In the wake of the recent tsunami and subsequent damage to Japan's nuclear power facilities, E.U. Climate Commissioner Connie Hedegaard said that the emissions targets in the road map may need to be amended if member states downsize their nuclear power generation in reaction to the disaster.