

August 28, 2014

FuelCell Energy's Cost Effective and Efficient Carbon Capture Progresses Under U.S. Department of Energy Program

DANBURY, Conn., Aug. 28, 2014 (GLOBE NEWSWIRE) -- [FuelCell Energy, Inc.](http://www.fuelcellenergy.com) (Nasdaq:FCEL), a global leader in the design, manufacture, operation and service of ultra-clean, efficient and reliable fuel cell power plants, announced the progression into stage three of a carbon capture development project supported by a previously announced award from the U.S. Department of Energy Office of Fossil Energy's Carbon Capture Program (DOE), and implemented by the National Energy Technology Laboratory. The project focuses on using Direct FuelCell® (DFC®) technology to efficiently and cost effectively separate carbon dioxide (CO₂) from the emissions of coal-fired power plants. After achieving the project design and financial goals established for phases one and two, FuelCell Energy has received \$1.2 million to continue into phase three of the project including the validation of the CO₂ capture process using a DFC fuel cell stack.

"This project is making measurable progress for providing an efficient and cost effective carbon concentration and capture solution for coal-fired power plants, which has compelling market applicability," said Chip Bottone, Chief Executive Officer at FuelCell Energy. "This next phase of the project advances the solution to demonstrate a commercial fuel cell stack, which is a significant step towards commercialization."

Analysis already undertaken illustrates that the DFC CO₂ capture systems have advantages over existing commercial technologies, due to their ability to capture CO₂ from fossil based power plants while also producing additional power. The results have indicated that the DFC carbon capture plants have the potential of meeting the DOE's carbon capture cost goal of \$40/ton for commercial applications.

The project began in late 2011 and consists of system design, cost analysis, and long-term testing of a Direct FuelCell® (DFC®) stack. Funding for the project is awarded in stages as certain progress milestones are reached. The final \$1.2 million DOE award of the total \$3 million project is now authorized to further advance the carbon capture system. This funding authorization follows favorable results achieved from the technology and economic analysis conducted in the prior stages of research and development. This third stage includes validation of the DFC technology capabilities by using a fuel cell stack to separate 90% of CO₂ from a simulated coal gas plant exhaust. This test will be the final stage of the validation for the technology before field trials using a DFC power plant.

FuelCell Energy's DFC technology separates and concentrates CO₂ as a side reaction during the power generation process. In this application of the technology, the exhaust of a coal fired plant is directed to the air intake of a DFC power plant, which separates and concentrates the CO₂ in the exhaust for commercial use or sequestration. Another side reaction that occurs when the fuel cell is used in this application is the destruction of 60 to 70 percent of smog-producing nitrogen oxide (NO_x) emissions in coal plant streams as the exhaust passes through the fuel cell. This reduces the cost of NO_x removal equipment for coal-fired power plant operators while benefiting the environment. Since DFC power plants produce power efficiently and with virtually zero emissions, the net result is a very attractive solution to prevent the release of green-house gases by coal-fired power plants while simultaneously increasing the net efficiency and power output of the plant. Additional benefits include reduction of the operating cost related to removal of NO_x and reduction in water usage as existing carbon capture technologies are water intensive.

About FuelCell Energy

Direct FuelCell® power plants are generating ultra-clean, efficient and reliable power at more than 50 locations worldwide. With more than 300 megawatts of power generation capacity installed or in backlog, FuelCell Energy is a global leader in providing ultra-clean baseload distributed generation to utilities, industrial operations, universities, municipal water treatment facilities, government installations and other customers around the world. The Company's power plants have generated more than 2.7 billion kilowatt hours of ultra-clean power using a variety of fuels including renewable biogas from wastewater treatment and food processing, as well as clean natural gas. For more information, please visit www.fuelcellenergy.com

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