Growth Rates of Emission-Fed Algae Show Viability of New Biomass Crop

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Results Are Catalyst for Replication at Coal Plant

PHOENIX--(BUSINESS WIRE)--Arizona Public Service Company (APS) and its partner GreenFuel Technologies will attempt to replicate their success of creating biofuels from algae grown using carbon dioxide (CO2) emissions from a power plant. This time, however, instead of using CO2 from a natural gas power plant, they will use emissions from a coal-burning power plant.

The move comes after the companies, this summer, were able to successfully grow algae at APS' Redhawk natural gas power plant at levels 37 times higher than corn and 140 times higher than soybeans--the two primary crops used for biofuel.

"At this productivity level, GreenFuel's system is ahead of other biomass production methods," said Professor Otto Pulz, president of the European Society of Microalgal Biotechnology and head of the IGV Institute's Biotechnology Department in Germany.

The growth rate -- an average productivity of 98 grams/meter sq./day (ash free, dry weight basis) and reaching a high peak value of 174 grams/meter sq./day -- surpassed previous lab growth rates and exceeded all expectations going into the project. The results provide evidence of the financial viability of using the emissions of a power plant to grow algae for the exclusive purpose of creating biofuels.

The project is now moving to APS' Four Corners Generation station, a coal power plant located in Farmington, N.M.

"It is now time to see if we can replicate this success at Four Corners," said Ray Hobbs, manager of the APS Future Fuels Program. "This project addresses two important issues in the U.S. today -- reducing greenhouse gas emissions at power plants and producing more domestic sources of alternative fuels for automobiles and power plants."

GreenFuel's Emissions-to-Biofuels(TM) technology uses safe, naturally occurring algae to recycle CO2 from the stack gases of power plants and other commercial sources of continuous CO2 emissions. At the Redhawk Power Plant, specially designed pipes captured and transported the CO2 emissions from the stack to specialized containers holding algae. In the presence of sunlight, the algae consumed CO2.

Once enough algae is grown, it is harvested, and its starches are turned into ethanol, its lipids into biodiesel and its protein into high-grade food for livestock.

While feeding CO2 from a power plant to algae is not new, turning the algae grown at a power plant into biodiesel and ethanol was ground-breaking when first accomplished in the fall of 2006 by APS and GreenFuel. The project marked the first time ever that algae grown on-site by direct connection to a commercial power plant had been successfully converted to transportation-grade biofuels. Once this was accomplished, the companies set out to prove the process' financial viability by expanding the project. It was during this ramp-up that the companies achieved the high growth rates.

Moving to a coal plant is the next progression in this evolving technology. The Department of Energy's National Energy Technology Laboratory (NETL) has been providing technical assistance throughout the process.

About Arizona Public Service Company

APS, Arizona's largest and longest-serving electricity utility, serves more than 1 million customers in 11 of the state's 15 counties. With headquarters in Phoenix, APS is the largest subsidiary of Pinnacle West Capital Corp. (NYSE: PNW - News).

About GreenFuel Technologies Corporation

With more than a dozen pending patents, GreenFuel Technologies Corporation is the leading developer of systems for recycling rich CO2 streams from power and/or manufacturing plant flue gases to produce biofuels and feed. Founded in 2001, the privately held company is headquartered in Cambridge, Massachusetts. For more information, visit www.greenfuelonline.com.

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