

Algae research proposed for area

By Chuck Stinnett (Contact)
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The city's Station Two power plant near Sebree could become the latest site for research into whether algae could hold some hope for capturing and recycling carbon dioxide emissions.

The Henderson Utility Commission earlier this week gave conditional approval to allowing University of Kentucky researchers to set up a small photobioreactor at Station Two.

Algae are fast-growing organisms that can double in volume in just 24 hours, but require large amounts of carbon dioxide to do so, according to the UK Center for Applied Energy Research.

Algae that are fed carbon dioxide from a power plant's flue gases could be converted into biodiesel fuel, while their proteins and carbohydrates "are excellent for animal feed," according to a UK pamphlet on the proposed project.

"It's essentially recycling carbon dioxide," using some portion of a power plant's emissions, said Mark Crocker, associate director for biofuels and environmental catalysis at the university's energy research center.

Station Two releases more than 2.6 million tons of carbon dioxide into the atmosphere each year, according to UK. Carbon dioxide is a greenhouse gas blamed for global warming. Increasing attention is being paid to reducing or capturing the gas emissions.

"I don't think anybody who's well-informed could argue that we don't have a carbon problem in this country, in this world," said Gary Quick, general manager of Henderson Municipal Power and Light, who owns Station Two.

The idea of using algae to capture carbon dioxide was developed at the Massachusetts Institute of Technology and has been tested at an Arizona Public Service Co. power plant.

UK is interested because Kentucky is the nation's third-leading coal producing state and also is home to numerous coal-fired power plants.

Hendersonian John Dunaway, who has taken an interest both in the algae research as well as energy development in western Kentucky, has been advocating for the research to take place at HMP&L's plant.

That caught the attention of UK, which wants to know more about the use of algae to reduce environmental impacts of burning coal, according to Crocker.

"There's relatively little published data in the (public scientific) literature about the use of algae in carbon dioxide capture," he said. "It's still in its infancy."

The reactor technology "is not very far advanced," Crocker said.

Further, most of the research has involved algae being exposed to cleaner flue gas from power plants that burn natural gas. "There is disagreement about the tolerance of algae to sulfur dioxide," which is emitted by coal-fired power plants.

And little is known about algae farming in Kentucky's climate.

Crocker said the UK pilot project would require only about a 10-by-30-foot area at Station Two, possibly less.

However, UK representatives would need to have access to the site, which lies within the Big Rivers Electric Corp. power plant complex near Sebree. And Station Two itself is leased to and operated by Western Kentucky Energy Corp.

"They need to be a party to this," Quick said, adding that the Henderson Utility Commission's approval of the project is conditioned in part on Big Rivers and WKE's support.

Big Rivers President and CEO Mike Core said he hasn't received any information about the proposal yet.

"Certainly we would need to know more details," he said Wednesday. "But we're always willing to talk to folks about different kinds of things."

UK also asked HMP&L to contribute \$25,000 toward the estimated \$250,000 cost of the project.

The utility commission hasn't agreed to provide \$25,000 in cash. Instead, "We'll see if there are grant opportunities we could take the lead on to help them," Quick said.