

## OriginOil Working With DOE Lab To Commercialize Algae-To-Oil

In a major deal for the tiny startup, OriginOil Inc. announced Tuesday an agreement with the Energy Department's Idaho National Laboratory to develop a joint research program aimed at commercializing the company's algae-based biofuel.

Los-Angeles-based OriginOil, on a mission to produce a high-yield, cost-competitive replacement for petroleum, has retained the DOE lab, in a fee contract, to develop a multi-phase research program designed to validate and commercialize the company's algae-based technology using the lab's top-tier engineering resources.

OriginOil is among several small companies scrambling to scale up techniques for producing biofuel from algae.

Production methods for algae-based biofuel are not nearly as far advanced as some cellulosic ethanol technologies, but algae is particularly intriguing because it

can produce far more biofuel per cultivated acre than other feedstocks, such as corn or switchgrass.

In addition, algae can be grown with wastewater or seawater, thus conserving fresh water resources, and its biofuel output can be increased if it is grown in a system with additional carbon dioxide captured from power plants and other industrial emitters of the greenhouse gas.

OriginOil says the cooperative agreement with the Idaho lab represents its first such partnership and could lead to exclusive licensing deals should new inventions arise from the project.

For its part, the Idaho lab, which is the Energy Department's lead research facility for nuclear power and also conducts a wide range of homeland security work for the government, says OriginOil's mission comports with its mandate to pursue national energy independence initiatives.

"Our primary challenge is cost-effective and scalable industrial processes and our partnership with OriginOil will help us find solutions to this challenge in the promising area of algae-to-oil technology," said Thomas Ulrich, advisory scientist for the Idaho National Laboratory's biofuels and renewable energy department in a statement.

The initial phase of the research program will focus on the collaborative development of a mass and energy balance model for photobioreactor-based algae systems. OriginOil says its major challenges to date have been creating a calm, fluid environment for algae growth, cost-effectively and evenly distributing light within the algae culture, and cracking algae organisms' tough cell wall to extract oil without overly expending energy.

OriginOil says it expects to use this model in the optimization of its algae-to-oil technology in the coming months. Subsequent phases will focus on validating OriginOil's processes and piloting specific commercial applications.

## States Challenge FERC Approval Of LNG Project... (Cont. from p. 1)

their citizens,

"Time and again, FERC has overstepped its boundaries and given premature approval to projects like Bradwood Landing without considering states' rights in the process," Department of Ecology Director Jay Manning said in a February 12 press release. "Our action today continues our jurisdictional battle to preserve the state's role in deciding whether a project can be constructed and operated within our borders."

Kroger, who filed suit January 26, Friday asked FERC to stay the effectiveness of its Bradwood Landing action pending a decision by the courts—a request that may fall on newly receptive ears at the commission.

While FERC last month refused to reconsider its conditional approval of Bradwood Landing, the Obama administration has since named Commissioner Jon Wellinghoff as acting FERC chairman. Wellinghoff dissented from approval of Bradwood Landing, saying the commission failed to adequately consider alternatives to the liquefied natural gas (LNG) terminal located on the Columbia River.

Oregon officials have repeatedly expressed anger about FERC's handling of NorthernStar Natural Gas Inc.'s Bradwood Landing, a proposed LNG terminal and associated 36-mile pipeline to be located on the Columbia River in Clatsop County, Ore., near Astoria. In particular, state officials say FERC's conditional approval improperly short-circuits the state's review of the facility.

In its January 15 decision denying the state's request for rehearing on Bradwood Landing, FERC said its conditional approval order "does not impact any substantive determinations that need to be made by states."

If upheld by the courts, the challenges by Oregon and Washington could have far-reaching effects because every LNG termi-

nal that FERC has approved to date has come with conditions designed to promote safety and mitigate environmental concerns and preceded issuance of all state and local permits.

However, Oregon's lawsuit contends that FERC acted improperly in granting approval of Bradwood Landing prior to the issuance of air and water quality permits and coastal consistency determinations required under the Natural Gas Act. The petition also asks the court to determine if FERC erred in issuing a license before commencing consultation with the Commerce Department's National Oceanic and Atmospheric Administration's fisheries division, as required by the Endangered Species Act. And it alleges violations of environmental review requirements under the National Environmental Policy Act.

Should it receive all remaining necessary permits, Bradwood Landing would be the first U.S. West Coast LNG import terminal.

Bradwood Landing spokesman Charles Deister says he does not expect the petition to delay the project's current timeline, adding that "we expect these kinds of challenges.

"We're still in discussions with Oregon and Washington state authorities on air and water permits and coastal consistency with Oregon.... We expect to receive those in the next six to eight months," said Deister last week.

However, officials with Kroger's office pointed to a recent decision by state officials in Oregon to overturn the Clatsop County Board of Commissioners' approval of NorthernStar's consolidated land use application as a portent of things to come.

"From our perspective, the ruling confirms one of our general positions—that FERC should not have approved this project prior to NorthernStar getting local permits approved," said Tony Green, spokesman for Oregon's newly elected attorney general, referring to the Oregon's Land Use Board of Appeals' January 27 ruling.