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## [Biotech company to open in Leander](#)

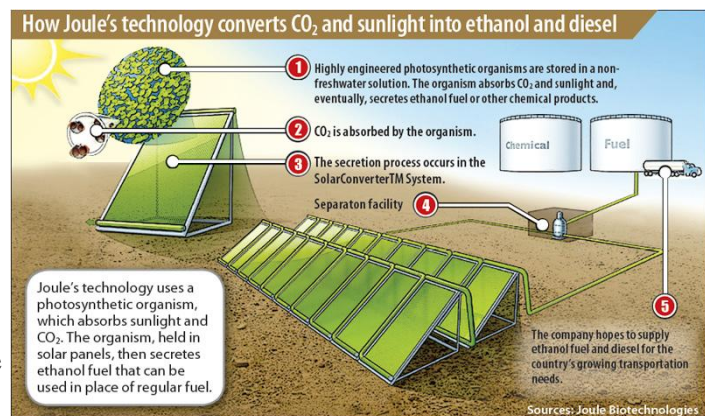
By Melissa Mixon Friday, 22 January 2010

### **Facility to be temporary and pilot scale**

**A biotech firm based in Cambridge, Mass., has picked Leander as the site for its first testing facility—a move that could put Leander on the map for cities producing alternative energy solutions.**

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Joule Biotechnologies has been in negotiations with the city for several months about opening a pilot-scale plant in Leander, which would allow the company to take its technology out of the laboratory and test it for commercial scale use. If successful in Leander, the company estimates that it could eventually produce 25,000 gallons of ethanol and 15,000 gallons of diesel per acre per year at a price that would be competitive with oil. In simpler terms: It has the potential to meet the nation's growing diesel needs with a land area that, in size, is 10 percent of Texas.



Similar biotech companies have tried mass-producing biofuel without success because of the high upfront costs of development and their reliance on land, fresh water and food crops. But, because Joule plans to produce fuel in a new and relatively unknown method, the company is piquing the interest of others in its field, meaning all eyes could be on Leander, too.

“It will bring attention from around the country that Leander is progressive and willing to work with companies that are environmentally sensitive and doing things to change the world in a

positive manner,” Leander City Manager Biff Johnson said. “They’ll look at our city and see the landing zone we’ve created for emerging technology.”

## **How it works**

The technology got its start in a Cambridge laboratory in 2007, when Joule was founded by Flagship Ventures, a venture capital firm that finances companies in the fields of life science, information technology and communications.

Joule now employs 37 people and, thanks to its technology, known as helioculture, is at the forefront of the race to develop and produce biofuels that will help reduce oil dependence.

When Joule went public with its technology last summer, it generated headlines from major media outlets across the country with one hailing it as a way to replace “all fossil fuels.”

The technology works like this: A converter that is similar to a solar panel captures sunlight and the greenhouse gas carbon dioxide, which is considered a large factor in climate change. Once inside the converter, a genetically engineered organism, created by Joule, absorbs the light and gas and secretes ethanol fuel and other petroleum-derived chemicals that can be used in place of gasoline.

Joule CEO Bill Sims would not say what kind of organism is used, due to the competitive nature of the industry, but he said it is one that naturally uses sunlight to convert CO<sub>2</sub> into organic compounds.

Sims said the company produces 6,000 gallons of ethanol per acre, per year, which puts the company at 25 percent of their full-scale goal.

In Leander, Joule engineers hope to test the technology and increase production.

“Leander was selected mainly for its high solar insolation and logistically convenient location,” Sims said.

The company plans to open facilities on roughly 5 acres of land near Leander’s sewage treatment plant off of FM 2243, said Kirk Clennan, Leander’s director of economic development. The facilities will open the first of this year and could employ up to 10 people, Clennan said.

Johnson met with Joule representatives in late December to begin negotiations on a one-year lease agreement that is extendable by Joule for up to five additional one-year terms.

Following the first year, or once the lease is up, Sims said the company could have plants based in multiple locations. In addition to Leander, these areas would ideally have high solar insolation, such as in the southwestern U.S.

Under the terms, the company will only have to pay the city \$1 per year to lease the land—something, Johnson said, that is telling of how the city is willing to work with and promote companies in the emerging technologies field.

Clennan said the company will still have to pay property taxes, and that the city was willing to charge Joule so little on the land because the likelihood of leasing it to anyone else is “highly remote,” given its proximity to the city’s wastewater treatment plant.

For Joule, however, the location is ideal because it offers access to untreated water and CO<sub>2</sub>, Clennan said.

“This just was a good fit and we felt like it is an incredibly interesting alternative energy technology,” he said.

## What it means for Leander

**Leander’s city council has made attracting companies in the emerging technologies field a part of its policy over the past two years.**

The initiative started as talk during council retreats and meetings, but Johnson and his staff have since been directed by the council to encourage companies in that field to come to Leander.

Leander Mayor John Cowman said the city moved quickly in securing Joule’s temporary move to the city because it is a step toward bringing more emerging technology to the city.

The council’s enthusiasm was apparent in council meetings, when members were quick to approve the project and celebrated it in their closing comments.

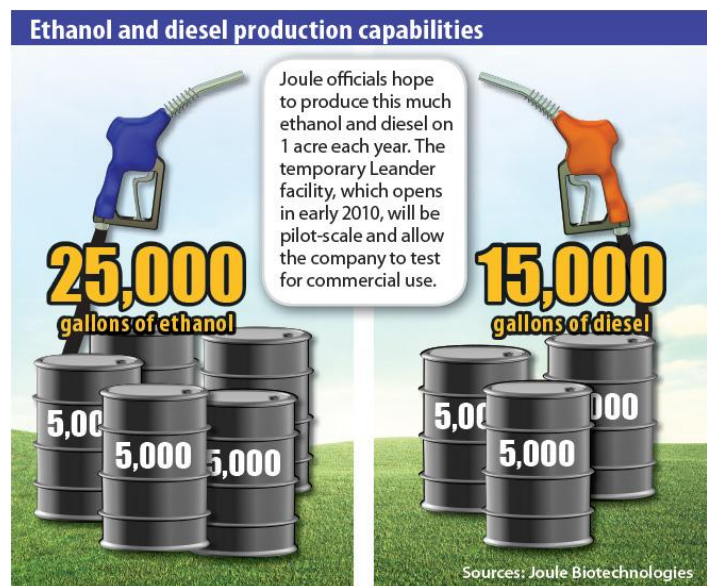
“It may be the beginning of something big, but it’s in its infancy,” Cowman said.

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## Safety of the organisms

Because Joule has not disclosed what the organism is, Leander officials had several questions as to how they react in nature and what would happen if they were accidentally released from their designated area.

Kirk Clennan, Leander’s director of economic development, said the



organisms can only live in a small temperature range that, if changed, they cannot survive.

Joule CEO Bill Sims said his company is working to ensure that activities at the Leander pilot facility comply with federal, state and local workplace and environmental health and safety requirements.

### **Ethanol: What is it?**

Ethanol is a grain alcohol that is clean burning and, when mixed with unleaded gasoline, is commonly used as fuel for vehicles.

Ethanol is produced from crops, such as corn, and because it can be produced domestically and with renewable sources, it helps reduce dependency on foreign energy.

According to the U.S. Environmental Protection Agency, ethanol blends could reduce the country's carbon monoxide emissions in vehicles by roughly 10 to 30 percent, depending on the technology.

Currently, about 70 percent of U.S. gasoline contains some ethanol.

**Courtesy of JB Goodwin**