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## **Idea of veggie oil burns bright**

Pioneering company opens biofuel station in Wisconsin town

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BLAIR, Wis. -- Even in the fringe world of alternative fuels, vegetable oil has mostly remained on the margins, the domain of a few do-it-yourselfers who have rigged their diesels to run on old fryer fat, making the rounds of local burger joints to fill their tanks.

But the veggie power movement is about to stick one greasy toe into the mainstream, as a company in this western Wisconsin town prepares to open what its owners believe is the first recycling and filling station for waste vegetable oil in the Midwest, and one of just a couple in the nation.

"The problem with vegetable oil is not the technology, it's the infrastructure," said Coulee Region Bio-Fuels co-owner Taavi McMahan, a lawyer who also is president of a biofuels cooperative in Madison. "We've been encouraging people to convert to vegetable oil, and when they've asked about fuel availability, we've said, well, get ready to go Dumpster-diving."

Not on U.S. radar

While clean-burning vegetable oil is widely used as a fuel in Germany, it has only recently begun to catch on in the United States. It is not among the eight power sources the U.S. government tracks through its Alternative Fuels Data Center, which provides information on biodiesel, electricity, ethanol, hydrogen, methanol, natural gas, propane and an obscure blend of fuels called P-series.

"I don't know of anyone [in federal government] who is doing anything on vegetable oil," said Roxanne Dempsey, a senior project manager for the Energy Department, who noted that alternative fuels account for less than 1 percent of the nation's energy use.

The lack of data makes it difficult to judge vegetable oil against other types of alternative fuels for efficiency and other economic benefits. But McMahan, who also supports ethanol and biodiesel, says grease rises to the top in a comparison because it requires almost no heat processing or energy-adding ingredients.

"I'm relatively convinced that vegetable oil is the most efficient use" of crop resources, he said.

Engines must be modified with special tanks because veggie oil has to be preheated before it will combust, especially in winter. A diesel car or truck can be converted with kits that cost \$2,000 to \$4,500 at the Madison co-op, McMahan said.

INO8, a company based in nearby La Crosse, helped develop the Blair facility to boost its line of vegetable-oil-burning water heaters and boilers.

"Most of the attention has been focused on the automobile sector, but we see huge potential in stationary uses" including in restaurants and greenhouses, said INOV8's Matt Fisher. "Up until this recycling center opened up, there wasn't any easy access to this type of fuel. This expands our market base."

McMahan said the oil center opened this month to wholesale customers. It's located about 30 miles north of La Crosse in a town of about 1,200 and shares a white cinder-block building with a do-it-yourself carwash. It looks like anything but the home base of a green revolution.

Naturally, the water for the carwash, owned by one of McMahon's partners, is heated in an INOV8 veggie oil burner -- "the state's only vegetable-oil-heated carwash," McMahon said with pride.

Inside are a half-dozen surplus milk tanks that can filter 5,000 gallons of waste vegetable oil per day. For now he's getting most of the oil -- 3,000 gallons a week -- from a Kettle Foods potato chip plant in Beloit, but plans to step up his efforts to procure more from restaurants and possibly other sources as he ramps up production.

"America's obesity problem is our lifeblood here," he said.

A cheap alternative

The idea is to keep the pumps flowing as much as possible with recycled oil, but McMahon said selling unused product -- straight vegetable oil in greaser vernacular -- is a future possibility. Recycled oil for non-transportation uses such as farm implements should sell for \$1.50 to \$1.75 a gallon depending on the grade, while road fuel will add about 50 cents a gallon for taxes, he said.

His ultimate goal is to create a loop: get farmers to grow canola and soybeans and press their own oil, which Coulee Region Bio-Fuels would distribute to restaurants, then collect the old grease, filter it and sell it back to farmers -- cheap -- to use in their tractors and trucks.

However, the business model is a work in progress. McMahon, who with his two partners invested \$45,000 in the project, hopes the fuel availability persuades more drivers to convert their vehicles but cheerfully admits that he has done no real market research.

"We may be way ahead of ourselves," he said.

Fisher, though, sees the model of local waste oil recycling as sound business and an important advance in energy usage.

Biofuels are not without controversy. Some critics say using food crops as fuel already has driven up prices, hurting the poor, and that wealthy countries could decide they need the energy and cut back on food aid to places that cannot grow enough of their own.

Moreover, waste vegetable oil is not dumped in the ground now; it's used in cosmetics and pet food. Recycling and burning it "is an alternative, not a solution," McMahon said. "It's a chance to help the rural economy by keeping things local. I just think it's important for people to have choices."

About 100 miles northwest of Blair in Barron, dairy farmer Bob Schauf invested \$100,000 in a machine that presses oil from seeds and a building to house it, with the idea of making federally subsidized biodiesel. Then he found out that to get the grant he had to have every batch of fuel tested to make sure it meets specifications, which he said would cost \$1,200 per test and wipe out the savings.

Added to that, making biodiesel would mean bringing methane and lye, two dangerous substances, onto his farm.

"Hazardous waste and the cost of testing turned me off to biodiesel," Schauf said. "But I was a little panicky because I had spent all this money."

Then McMahon showed up and told him he didn't need to do anything but grow, press and fill up. He's already mixing his oil with 80 percent regular diesel and says it's working well.

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'Straight,' no chaser

Vegetable oil can be burned in just about any diesel-powered vehicle: cars, trucks or tractors.

Unlike biodiesel, it needs no processing, but waste vegetable oil may need to be filtered.

It can be mixed with regular diesel fuel or run "straight," which requires adding a system to preheat the oil before the combustion stage.

Conversion kits are widely available on the Internet for \$1,000 and up, though extra parts and installation can cost hundreds or thousands more. Prairie Fire Bio-Fuels Cooperative in Madison offers kits installed for \$2,200 to \$4,500.

Vegetable oil also can be used in hot water heaters and boilers specially designed for that use. Some heaters will automatically switch from oil to other fuels such as natural gas if the oil runs low.

Many restaurants will provide used fryer oil for free, but some users say it's becoming more valuable as a commodity, so that could change.

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