Charlie Anderson runs this Ford pickup on waste vegetable oil he collects from restaurants. Founder and co-owner of Greasel Conversions, he sells kits to convert nearly any diesel engine to operate on free fuel.

The Grease Guys

Greasel Conversions shows the world how to drive for free

by Bob McEowen

You don't have to read the giant letters emblazoned on the side of Charlie Anderson's 1994 Ford F-350 pickup to know there's something, well, fishy about this vehicle. Actually, sometimes the truck's exhaust smells like fish. Other times it smells like chicken, french fries or even popcorn.

As the big red letters on the truck's doors proclaim, "This truck runs on waste vegetable oil" — specifically, leftover fryer grease collected from restaurants and strained to remove food debris.

Charlie is the founder and, now, co-owner of Greasel Conversions, which develops and sells kits to allow nearly any diesel engine to burn straight vegetable oil. While the idea sounds implausible, it's been done before.

"The concept of running a diesel on vegetable oil is as old as the diesel engine itself," Charlie says, explaining that Rudolph Diesel demonstrated his engine at the 1900 world's fair on peanut oil.

Although Diesel envisioned his engine burning fuels farmers could grow, after his death manufacturers soon adopted an oily petroleum fuel known hereafter as diesel. The world soon forgot that Diesel's engine would run on anything else.

Regular diesel fuel has one important advantage over vegetable oil. It is thinner and runnier — technically, it has a lower viscosity — so it flows better. But plant-based fuels, either leftover grease from a restaurant or commercially produced biodiesel, lubricate better and pollute less than diesel fuel.

Plus, used cooking oil is free.

"Restaurants usually have to pay to get rid of it so they're more than happy to have us haul it off," the Howell-Oregon Electric Cooperative member says.

Charlie began experimenting with alternative fuels after moving to Missouri from Alaska in 1999. After briefly attempting to make his own biodiesel, a vegetable oil-based fuel with viscosity similar to regular diesel, Charlie set about to convert an old diesel Toyota pickup to use straight vegetable oil.

SVO, as straight vegetable oil is known among alternative fuel users, must be heated before it will flow and burn properly in a diesel engine. Charlie's approach was to use two fuel systems — one for diesel, the other for vegetable oil. His vehicle starts on diesel fuel and as it runs warm coolant flows from the engine's radiator to a heat exchanger in the SVO tank. Once the engine is warm a flip of a switch shuts off the diesel flow and the engine begins drawing fuel from an auxiliary tank filled with used cooking grease.

"After about a week I emerged from my shop with this ugly-looking thing under the hood of my Toyota. I grabbed two gallons of new canola oil and dumped it in there," Charlie says. "I flipped the switch and waited for it to blow up. It just kept running, kept running, kept running."

In 2001 Charlie put together a basic conversion kit using a 6-gallon boat fuel tank and began selling it on the Internet. It wasn't long before he attracted the attention of Perry Pillard, a software developer living in Dallas. Perry bought a kit and installed it on his own diesel vehicle.

The two tinkerers kept in touch as Perry worked to improve his conversion. In time Perry began to help Charlie with his Web site and the two worked on some kit installations together at a gathering of alternative fuel enthusiasts.

In 2002 Perry made a decision that shocked his wife and friends. He quit a good job in the computer industry, bought half of Greasel Conversions and moved his family to Missouri.

Although both men share a devotion to their product and its potential, they approach it from a different perspective. "I did this because I'm inherently cheap and I love to tinker," Charlie says.

Perry, on the other hand is a true believer.

"I wouldn't be here if it was just a couple of shade tree mechanics trying to hammer out a buck on a passing fad," he says. "The real passion I have here is the research and development of alternative fuel systems. I'd like to make a difference and I feel we're doing it here, one vehicle at a time."

Perry and Charlie say vegetable oil emissions are about 60 percent cleaner than diesel, a claim that mirrors those made by the biodiesel industry. In addition, they say plant-based fuels lubricate better, could reduce our dependence on foreign oil-producing countries and give farmers a boost.

"It's better for the environment. It's a domestic product. It's better for our economy. It's better for the engine," Perry says. "It just really pushes the whole recycling theme."

The Greasel concept has begun to take hold in foreign countries, where diesel cars are more common. Charlie, who learned Japanese as a foreign exchange student and Mormon missionary, has convinced several city governments in Japan to burn waste vegetable oil. Greasel is also working on a pilot project with a large hotel's fleet in Puerto Rico.

Closer to home, the National Biodiesel Board opposes the use of straight vegetable oil in diesel engines. "We're sympathetic to their motivations but we're concerned about promoting a product that people could have problems with," says Joe Jobe, executive director of the organization, based in Jefferson City.

Specifically, the board, which promotes commercially produced biodiesel, says straight vegetable oil can foul fuel injectors and damage engine valves.

"Nothing could be further from the truth," Charlie says. "I've researched running straight vegetable oil in everything from my Polaris diesel four-wheeler to a big 18-wheeler Mack truck. We have never had any problem."

Greasel sells an extensive line of SVO conversion kits. An economy kit with a plastic 6-gallon fuel tank and a reusable filter costs about $500. Greasel's custom-built "Nomad" kit with a 140-gallon pickup bed-mounted fuel tank, automatic fuel switching and an on-board transfer system for gathering oil costs upwards of $3,000.

In the three years Greasel has been selling and installing conversion kits Charlie says they've seen their customers change. Initially he saw a lot of "long-haired hippies" and "tree-hugging environmentalists" driving school buses and old Mercedes diesels. Today, the company's customers are just as likely to be suburbanites driving a trendy turbo diesel Volkswagen or a fancy new pickup or SUV.

The company has even converted one 18-wheel road tractor. Ray Hudson, an over-the-road trucker from Casey, Ill., bought a Greasel kit to burn waste vegetable oil in his 1999 Mack truck.

"I carry 270 gallons of vegetable oil. I can do about 1,600 miles on grease and then I have to come home on diesel," says Hudson, who has driven 100,000 miles — half of them on grease — since installing the conversion.

The fact that a professional driver would risk his livelihood on old kitchen grease is a testament to their system, Charlie says. "This isn't a hippy with a beat-up Volkswagen Rabbit. This is a Mack truck running full time."

Charlie and Perry hope to attract more commercial and industrial users as well as expand their market beyond the do-it-yourselfer. To that end they've concentrated on conveniences, such as automatic tank switching and easier methods of collecting waste oil.

"We don't want this to be a tinkerer's hobby," Perry says. "We want it to be a turn-key solution so anybody out there can do it."

As improbable as collecting used oil from a restaurant to run a vehicle may sound, the Greasel guys really do see their product as one solution to America's insatiable desire for energy.

"There are all these alternative fuel ideas that are going to take 10 or 15 years before anything is remotely ready," Perry says. "But we can't ignore the immediate possibility of running a cleaner, cheaper and better lubricative fuel right now."

Indeed, despite the inconvenience of gathering fuel, the expense of converting a vehicle and the complexity of operating a veggie oil vehicle, Charlie says for those willing to make the effort, Greasel's product offers the promise of free fuel as well as a lessened impact on the environment.

"People like to point out the negatives," Charlie says. "Yeah, it's not perfect. The internal combustion engine is not perfect but by golly we're doing it with existing equipment and it's working."

For more information call (417) 261-9908 or log onto www.greasel.com.