

# FILL 'ER UP, BUT HOLD THE FRIES

Chelmsford man avoids pump blues, putting his car on vegetable oil diet

By REBECCA LIPCHITZ  
Sun Staff

**C**HELMSFORD — Have driven behind an old blue Volkswagen Jetta and suddenly craved french fries? It might be the vegetable oil Virginio Mendonça uses for fuel.

***“I have to get the shrimp tails and tortilla chips out of it first.”***

*Virginio Mendonça, on need to filter used vegetable oil before filling up*

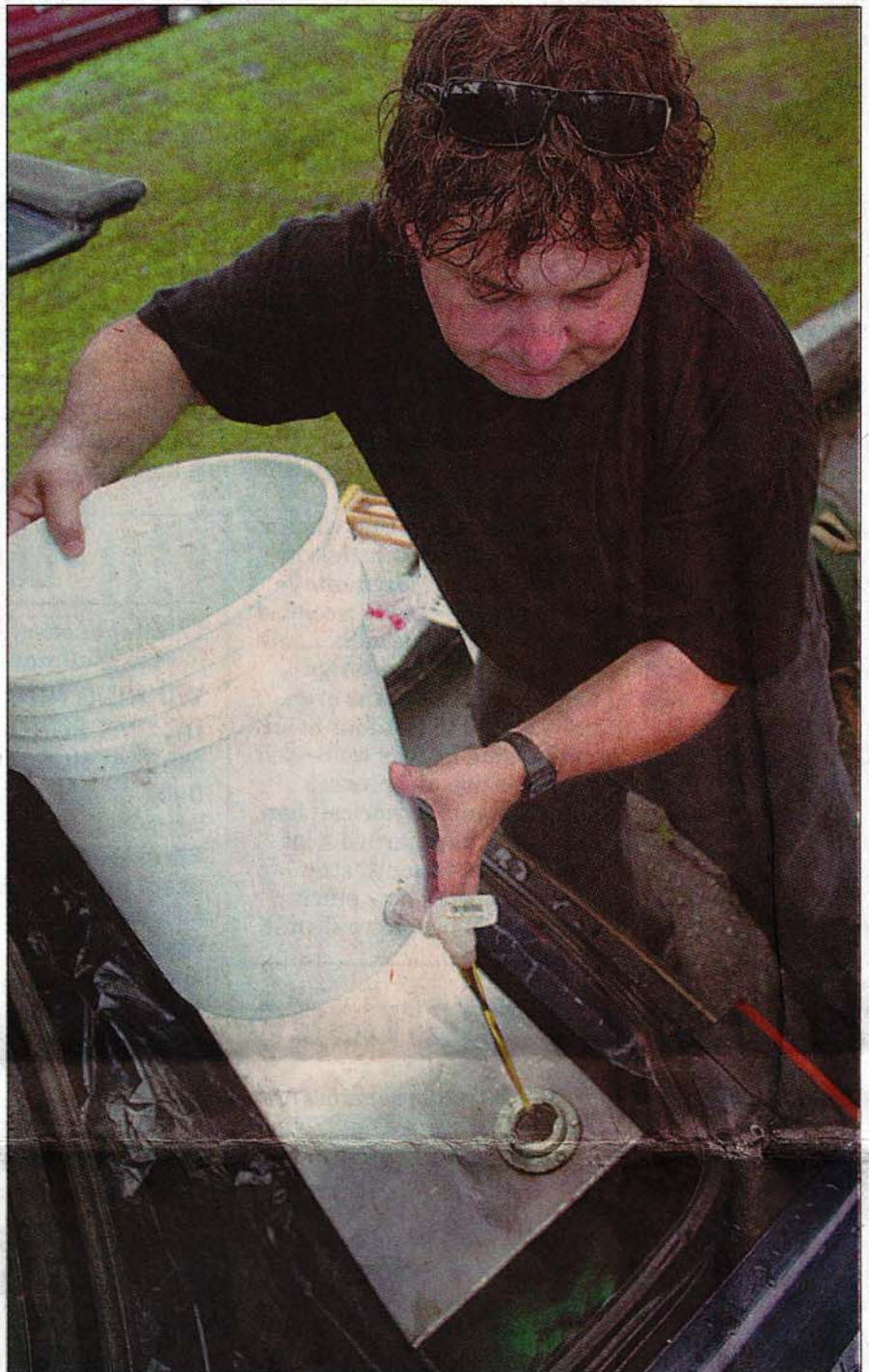
“I kind of want some right now,” he said, squatting down behind his car as it idled in his Chelmsford driveway, thinking of fries.

A former mechanic, Mendonça, 44, converted a 1986 Jetta

that would have been scrap metal into a reliable vehicle that runs on vegetable oil.

He’s been studying renewable energy for 15 years, inspired in part by Joshua Tickell, who wrote *From Fryer to the Fuel Tank*, and drove a camper around the country to demonstrate how bio-diesel fuel works.

He met Tickell at a renewable energy conference six years ago. He later met UMass Amherst graduate Justin Carver, who founded Florence, Mass.-based



**GREASING THE MACHINE:** Virginio Mendonça of Chelmsford fills the tank of his 1986 Volkswagen Jetta with used vegetable oil, which he gets from local restaurants, usually for free. The tank is in the trunk of the car, which used to run on diesel fuel.

SUN / JAMIE LYN GIAMBRONE

Greasecar, a company that makes fuel-line conversion kits.

“I didn’t want to reinvent the wheel, but at one point I realized that if I don’t do this, it would be silly,” he said.

Mendonça ordered a Greasecar conversion kit for \$795. His back-

ground as an auto mechanic helped, but it took him a year and a half to modify the kit to fit the Jetta.

So far, so good. The car has been running for six months with no problems. He gets 44 miles to the

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# Driver steers clear of gas stations, fills tank at his local restaurant

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gallon of vegetable fuel, or about 400 miles per tank.

The longest trip he has taken was four hours each way. And though he might want to consider a cholesterol check at the next state inspection, the car's been running trouble-free.

Because diesel engines are powered by compression, and not sparks that ignite gasoline, they can also run on vegetable oil or bio-diesel fuels. A diesel

engine can be converted to run on vegetable oil with the installation of a second tank, or run directly from its gas tank on bio-diesel fuel, a fuel made from vegetable oil processed with lye and ethanol.

Bio-diesel fuel can be made for about 80 cents a gallon, but it is a chemical process. Few companies manufacture it. It sells for about \$2.70 per gallon, and can be used in a diesel tank without modification.

Used vegetable oil is more

accessible. It's available from restaurants in 5-gallon jugs, usually for free, since it costs proprietors at least \$1 per jug to dispose of it.

To use it as fuel, Mendonça lets it settle for a week and then filters it through a paper-like filter bag bought through auto parts suppliers. "I have to get the shrimp tails and tortilla chips out of it first."

The car runs just like it would if it were running on diesel fuel. "Sounds like squirrels running around with nuts."

He chose the junk car to experiment with in case the system failed, but now that it's proven itself, he is considering installing it in a different, newer car. He also has plans to install such a system in his camper and "travel the country almost for free."

Mendonça isn't alone in his enthusiasm.

Daryl Beck, an artist who grew up in Harvard and settled in Greenfield, works as a mechanic to support his family and his career in fine art. Since November, he has worked exclusively installing Greasecar kits into customer's cars — about one per week — for a fee starting at \$750.

Most customers drive Volkswagens or Mercedes, and they come from all over the Eastern United States. The demand is so great that he has more

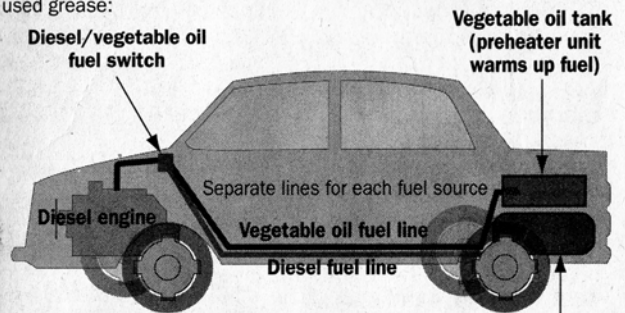


**BURNS OIL, AND THAT'S JUST FINE:** Virgínio Mendonça with his 1986 Volkswagen Jetta, a diesel model that he modified to run on used vegetable oil. The car gets 44 miles per gallon and has been running for six months with no problems.

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## Environmentally friendly greasemobile

Standard diesel engines can be modified to run on used, filtered vegetable oil, the type used for deep-frying foods at most restaurants. With the following modifications a standard diesel engine can run on used grease:



### How it works

Diesel fuel is used to start and power down the car (so the vegetable oil doesn't coagulate and clog the fuel line). Once the car is running, a switch is flipped and pre-heated vegetable oil replaces the diesel fuel. Fuel economy for the 1986 four-cylinder Volkswagen Jetta is in the 44-mpg range. Before the car is shut off for the night the car switches again to diesel fuel for about a minute to flush the vegetable oil out of the fuel line.

requests than he can fulfill.

The conversion will save on the cost of fuel, he said, but most of his customers don't have to worry about that. Many do it for environmental reasons, he said, adding that their lifestyles run the gamut from airline pilots to military personnel to outdoor tour guides.

Mendonça is excited about renewable energy, but added that he's not a "tree-hugger." He supports this by noting that in his battle with skin cancer a few years ago, he skipped the herbal treatments for western medicine.

What motivated him to convert this car is partly political — a desire to be free

of the country's dependency on foreign oil.

On Friday, U.S. light crude for September delivery dropped 84 cents to settle at \$47.86 on the New York Mercantile Exchange, retreating from Thursday's record closing price of \$48.70. Crude futures have soared more than 50 percent in the past year, although when adjusted for inflation, oil is still roughly \$9 less per barrel than it was leading up to the first Gulf War.

Mendonça grew up in the Azores mountains in Portugal, living without electricity and heating homes and cooking with wood. He came to the United States in 1969.

His parents worked in Lowell factories such as Pellon.

"America had a drive, a spirit of invention," he said, but added that the government's quickness to impose regulations on inventors or would-be business owners have dampened that spirit.

"Somewhere we lost that drive to invent neat things," he said.

For more information on running cars on vegetable oil, visit conversion kit company Greasecar at [www.greasecar.com](http://www.greasecar.com), the non-profit organization site for [journeytoforever.org](http://journeytoforever.org), or the New England Sustainable Energy Association at [www.nesea.org](http://www.nesea.org).