



BY KRISTI EATON

## It sounds surprising, but ordering that delicious, greasy batch of french fries can actually help you power your vehicle.

Hundreds of restaurants across the state are handing over their leftover vegetable oil to several local companies who then turn it into biodiesel through a process called transesterification, where the vegetable oil is mixed with alcohol. Derived from vegetable oil, soybeans, corn or other crops, biodiesel has become popular in the last few years, as people search for alternative fuel sources. It can be used as a pure oil, or mixed with petroleum in varying levels. It can be operated in any diesel engine, with minimal to no engine modification required. According to The National Biodiesel Board, sales for the alternative fuel have grown tremendously in the last decade. In 1999, 500,000 gallons of biodiesel were sold in the United States. By 2004, the number had increased to 25 million, and in 2008, the number of gallons sold reached 700 million.

### New Market

Rick Katt and Mark Hinkle, founders of Green Dining Network in Phoenix, realized there was an untouched market in the Valley and statewide for converting vegetable oil to renewable energy. The two created Green Dining Network, with Marv McCarthy as president of the company.

“Rick and Mark really saw this market and renewable fuel markets as a great opportunity, because it’s a good business and all the oil was going to waste,” McCarthy said. “They got the idea, ‘Hey, we could really make a difference here in the state by keeping it for renewable fuel production.’”

The Green Dining Network provides a free service to any interested restaurant. They deliver collection tubs to restaurants, which fill them with their leftover oils, and collect the tubs every two or four weeks. Green Dining Network makes its money by filtering the oil and selling it to biodiesel manufacturers.

“Since February of this year, business at Green Dining Network really began picking up,” McCarthy said. “The company now has about 500 clients in the greater Phoenix area and about 100 more in and around Tucson.”

One of Green Dining Network’s clients, Brenda Lambrecht, owner of Armadillo Grill in Phoenix, was looking for ways her restaurant could become more environmentally conscious when she heard about companies turning oil into biodiesel.

“We were in a management meeting and talking about different ways to go a little bit more green,” Lambrecht said. “We’ve been having a hard time finding people to take our trash, and [the

biodiesel process] was one of the things we heard about. We go through quite a bit of oil, and [Green Dining Network] takes it and turns it into biodiesel.”

“It’s a win-win,” Lambrecht said, because it helped turn something her restaurant used into a positive product. “We used to pay people to pick up our oil, but it wasn’t turned into biodiesel. Now, it’s cost-effective and helping the environment.” Once Green Dining Network has the oil, they will filter out the impurities—bits of fries, potato chips and paper towel pieces that have been left behind in the grease.

“The first thing we do is filter it,” McCarthy said. “We put it through a really rough filtration process to get the big chunks out of it, and we’ll pull out the larger materials.”

Depending on who they are selling the vegetable waste to, Green Dining Network may filter it once more. Once the oil has been filtered, they will sell it to one of several companies that turn it into biodiesel.

One such company, Gilbert-based AZ BioDiesel, was started about six years ago, after founder Dan Rees learned his son was making biodiesel in his garage.

“His suggestion was to make our own biodiesel and make deliveries,” Rees said of his son. At that time, they were making about 350 gallons of biodiesel a week. Soon after, biodiesel’s popularity caught on, and the company was formed. Today, the company’s plant in Gilbert produces 250,000 gallons of biodiesel a year. AZ BioDiesel will soon open a new plant that will make 10 million gallons of biodiesel a year.

AZ BioDiesel purchases oil from local collection companies, like Green Dining Network, at market price and sells the fuel locally after they convert it to biodiesel. “People want to be environmentally conscious, but just are afraid about money,” Rees said when asked about biodiesel’s growing popularity.

According to Rees, biodiesel has been commonly used in Europe since the 1990s. “Our country is way behind in advanced fuel technology,” Rees said. “Really, it’s just spreading here from Europe.”

AZ BioDiesel is currently selling biodiesel fuel for approximately \$2.69 per gallon. Biodiesel differs from ethanol, another biofuel, because it is mainly extracted from vegetable oil and fat, while ethanol is distilled from plants. Biodiesel is believed to be more efficient and environmentally friendly than ethanol.

With biodiesel’s popularity steadily growing, many companies are incorporating the fuel in their everyday practices. For example, Stellar Adventures, an off-road adventure touring company in Scottsdale, has been powering its vehicles with biodiesel since August 2008.

### Collecting

According to McCarthy, most ordinary citizens don’t use enough oil for companies to collect, although his company is in the process of setting up collection centers. However, there is one time each year when it is worth it to collect from citizens – Thanksgiving. As more people deep-fry their Thanksgiving turkeys, many people find themselves with leftover oil waste. In Tucson, the Tucson Clean Cities Coalition partnered with Greecycle and AZ BioDiesel partnered with the Town of Gilbert to collect oil a few weeks after Thanksgiving. Gilbert town officials found the drive to be very successful, and now other cities like Avondale and Queen Creek are interested in having collection sites.

SOURCES  
azbiodiesel.com, greecycle.com, greendiningnet.com