Food Service Operators are Discovering the Gold in Grease - By Glenn Hasek

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Last summer, when oil prices were at record highs, thieves were actually stealing yellow grease - used vegetable oil - from storage bins outside of restaurants. Since that time, oil prices have fallen of course but used fryer oil has remained a valuable commodity.

Some is still picked up and ultimately used in fertilizers, as animal feed, or in cosmetics, but waste vegetable oil is beginning to be used as a biofuel in cogeneration systems to generate electricity and useable heat. For quite some time it has been converted into biodiesel to power automobiles or even trains. Hoteliers and restaurateurs around the United States are discovering that there is gold in grease.

At the Disneyland Resort in Anaheim, Calif., cooking oil recycled into biodiesel is used to power its Disneyland Railroad steam trains and Mark Twain riverboat. According to Frank Dela Vara, Disneyland Resort's director of environmental affairs and conservation, this move allows the resort to save approximately 200,000 gallons of petroleum diesel per year.

Four hotels in the Boston area-the Seaport Hotel, Comfort Inn and Suites Boston/Airport, The Lenox Hotel and the Ramada Inn Boston are also using vegetable oil that has been converted into a renewable biodiesel fuel. Approximately once a month, Wachusett Bio-Mass collects the oil from each property. The oil is then taken to its Gardner, Mass., plant where biodiesel is produced during a process called transesterification. The process removes unwanted fat chains from the vegetable oil. When Wachusett Bio-Mass returns to the Seaport Hotel, the hotel's portable diesel caddies that hold 56 gallons of fuel are refilled. The biodiesel is then used to power the Seaport's diesel box truck.

A Biodegradable, Renewable Fuel

The arrangement Wachusett Bio-Mass has with the Boston hotels is a win-win situation. Wachusett Bio-Mass secures the raw material needed for its business. The Seaport is able to buy diesel fuel at a price lower than traditional diesel fuel. The picking up, processing and delivering of the fuel also creates local jobs. From an environmental standpoint, biodiesel contains no petroleum, is biodegradable and nontoxic, is made from renewable resources, and releases up to 50 percent fewer emissions (carbon monoxide and carbon dioxide) into the atmosphere compared to regular diesel fuel.

At the Westmark Baranof Hotel in Juneau, Alaska, the hotel collects used cooking oil from area restaurants and mixes it with regular heating oil to heat the property. Restaurants that don't send their leftover oil to the Baranof must ship it to the lower 48 states, a very expensive alternative. At the Holiday Inn in San Juan, Puerto Rico, the hotel kitchen houses a 250-gallon holding tank for used vegetable oil, which is recovered by a local company and converted into biodiesel. At the Pinehurst Inn in Bayfield, Wis., co-owner Steve Sandstrom says all of the inn's vehicles, including a 1982 Mercedes, run on either biodiesel or filtered vegetable oil. He picks up the oil from four local restaurants.

'I bought a 1982 Mercedes and converted it to run on veggie oil,' Sandstrom says. 'I decided to learn more about the process of making biodiesel. I bought a biodiesel processor and started making my own biodiesel. I sold our gasoline vehicles and now have all-diesel vehicles. As much as we can, we run biodiesel that we make in our own garage. It allows us to demonstrate one more way to be sustainable. It is a great opportunity for tours. A lot of our guests are interested in it. It is a great teaching tool. It is listed in our guest book in each room. It is on our website.'

Locals Pick Up Cooking Oil

At the Inn by the Sea in Cape Elizabeth, Maine, two local men pick up all of the inn's cooking oil and use it in their diesel cars.

'We used to pay to have the oil taken away,' says Rauni Kew, in charge of public relations and green programs at the Inn by the Sea. 'Now it is being recycled and we feel great about the reuse and reduction in waste. The people using the oil are delighted as they are using it as free fuel. This is good for the planet, good for people and good for the bottom line.'

At least two companies-Owl Power Co. and Lifecycle Renewables Inc.-have come up with ways to burn used vegetable oil to generate electricity while using the heat from that process to help heat water. Owl Power Co., Boylston, Mass., is currently testing its Vegawatt system at Finz Seafood, a restaurant in Dedham, Mass. The Vegawatt onsite cogeneration system is fully automated and requires only that the foodservice employee pour the waste oil into the tank. All other operations are handled without any employee intervention. The unit, which is about the size of a refrigerator, is placed outside the building the same way central air-conditioning units often are. It connects through one electrical cable to the electrical system. There is also a hot water feed and return system. Through a heat exchange process, the temperature of the water entering the facility and running to the hot water tank is increased from 50 degrees to 130 degrees. This reduces natural gas costs.

According to Ben Prentice, vice president of sales for Owl Power, a Vegawatt system can produce from 10 to 25 percent of the electricity needed by a restaurant. The system is ideal for facilities with at least three to five deep fryers-ones that generate from 50 to 80 gallons of used fryer oil in a week. Within the Vegawatt, used cooking oil undergoes a four-stage cleaning process. The Vegawatt does not create biodiesel but instead a useable fuel for electricity generation.

Reasonable ROI Time Period

’It will burn any kind of plant-based oil,’ Prentice says. ’The system will pay for itself in two to four years depending on facility size and utility costs.’

Whereas in most instances properties are paid from five cents to 50 cents for a gallon of used vegetable oil, the Vegawatt in a sense raises the value of that oil to from $2.50 to $3.00 a gallon.

Lifecycle Renewables Inc., Marblehead, Mass., is also currently offering cogeneration systems that use an internal combustion engine to generate electricity and usable heat. The vegetable oil exhaust emissions that are produced from the 115-kilowatt and up systems contain zero sulfur oxides and sulfates, major contributors to acid rain. The Whole Foods Market in Everett, Mass., will be using a Lifecycle system later this year. The waste vegetable oil used for frying food from the commissary and kitchen facility, as well as 21 Whole Foods Market stores from across the region, will be used as a biofuel to offset some of the utility costs for the facility.

’Being able to repurpose over 1,200 gallons of cooking oil a week, which was previously considered a waste product, to fuel a system that will reduce our dependency on conventional fossil fuel sources and that will result in less harmful emissions will help us move one step closer to our goal of becoming a ’zero waste’ company,’ said Jeff Turnas, president of Whole Foods Market’s North Atlantic Region.

Rory Gaunt, chief operations officer for Lifecycle Renewables, says one of his company’s systems could easily be used in a larger hotel or by any location with multiple food service operations located close to one another.

’It really clicks when you have someone with a large volume of oil,’ Gaunt says.

This article first appeared on the Green Lodging News website. To sign up to receive the weekly Green Lodging News newsletter, go to www.greenlodgingnews.com. Glenn Hasek can be reached at editor@greenlodgingnews.com.