

conc. man. 12.14.03

These trucks run on vegetable oil

► In New Hampshire, environmentally-friendly biodiesel is available at a single gas station in West Chesterfield – for now.

By **ERIKA COHEN**
The Keene Sentinel

Bryan Shaw stood beside the gasoline pump one recent morning filling the diesel tank of his three-quarter ton Dodge pickup – with a vegetable oil-based fuel.

Called biodiesel, the fuel can be made from vegetable oils or animal fats and can be used in any diesel engine. It is renew-

able, cleaner burning and less polluting than conventional diesel fuel.

Shaw, of Westminster West, Vt., was filling up at Fleming Oil's Shell on Route 9 in West Chesterfield, the first retail outlet in New Hampshire to sell the fuel according to Rebecca Ohler, an air quality engineer with the state Department of Environmental Services.

While this was his first time at a gas station, Shaw has been using biodiesel

 **Equipment operators report fewer headaches at the end of the day – the fumes don't smell bad."**

– *Bud Winsor,*
Keene State College

B20 is petroleum diesel blended with 20 percent vegetable oil; B100 is 100 percent vegetable oil.

since July, buying 55-gallon drums of biodiesel from Global E Industries, Ltd., of Cavendish, Vt., the same company now providing the fuel to Fleming's.

Shaw said the truck "runs like a gem" on biodiesel.

The tank at Fleming Oil's Shell is filled with B20, one of two forms of biodiesel.

David Bonta of Global E Industries said biodiesel is not only environmentally friendly, but the renewable fuel also reduced America's need for foreign oil.

Green fuel

According to an October 2002 study by the U.S. Environmental Protection Agency, biodiesel emits less carbon monoxide and sulfate, and fewer hydrocarbons and soot particles than petroleum-based diesel.

But biodiesel isn't environmentally perfect. According to the environmental agency's study, the B20 biodiesel emits about 2 percent more smog-causing nitrogen oxide than regular diesel, and B100

■ See **BIODIESEL** – Page F-3

■ **BIODIESEL** *Continued from Page F-1*

emits about 10 percent more.

Ohler said that since the fuel is not currently used widely, she does not see any significant increases from these emissions.

Biodiesel provides the overall benefit of reducing carbon dioxide emissions and other climate-changing gas emissions, Ohler said. While nitrogen oxide is a greenhouse gas — one that helps create the greenhouse effect believed to cause global warming — it is not a primary one.

While both diesel and biodiesel emit carbon dioxide, the carbon from conventional diesel would have remained buried deep underground if it hadn't been pumped out of the earth for use as a fuel. The result, after it is burned, is a net increase of carbon dioxide in the earth's atmosphere.

Biodiesel, Ohler said, keeps carbon dioxide in balance. The growing plants used to make biodiesel absorb carbon dioxide from the atmosphere as they grow, then emit it again when burned in the form of biodiesel.

She said biodiesel also reduces toxic pollutants — approximately 40 different toxic compounds — that are emitted with diesel exhaust. "The health impacts from diesel exhaust are pretty significant and a little more pronounced than people had realized," she said.

"The (toxic particles) are very small and tend to cling to the soot," Ohler said. "Since the particles are so very, very, very small they can

easily be inhaled into the lungs, where they accumulate and can cause health problems."

While biodiesel has a growing following, it has not gotten as much attention as other environmentally friendly motor-vehicle technologies, such as hybrid vehicles and fuel cell-powered cars.

Popular in Keene

Still, people owning or operating diesel vehicles are beginning to pay attention, and Keene seems to be ahead of the curve.

The city of Keene powers its fleet of 58 diesel vehicles with biodiesel, and Keene State College is using the fuel for about 10 of its diesel vehicles.

Comments from people at both places are positive.

At Keene State, biodiesel is used in front-end loaders, lawn mowers and plows on campus. Bud Winsor, assistant director of the physical plant and grounds at Keene State, said that after two years of biodiesel, his employees never want to return to conventional diesel.

"Equipment operators report fewer headaches at the end of the

day — the fumes don't smell bad — it was a great move," Winsor said. "The only down side is availability. Sometimes we run out and have to wait for more or get it from Keene."

Winsor said the vehicles also benefit from the cleaner-burning fuel.

He said the biodiesel seems to have a lubricating quality, causing the engines to run cleaner and have less soot buildup.

While biodiesel has a growing following, it has not gotten as much attention as other environmentally friendly motor-vehicle technologies.

His fleet uses 100 percent biodiesel from April to October and switched to B20, the blended version, during the colder months. Despite some reports of the fuel gelling in cold, Winsor has had no problems.

The fuel, he said, costs the college about 20

cents per gallon more than traditional diesel.

And it is in demand. Winsor said people have actually called him asking if they can buy the renewable fuel from the college, but he cannot sell it.

Biodiesel has been equally successful in Keene, which started powering its fleet of 58 diesel vehicles with biodiesel a year ago.

Stephen Russell, the fleet superintendent for Keene's vehicles, said the transition was seamless and

successful.

"I think a lot of people don't even know we are burning it and it's cleaning the air," Russell said.

"You pull a truck into my shop now and you don't even know it's diesel."

Russell said traditional diesel is very dry and produces a lot of soot that builds up in engines.

Like Winsor, he said biodiesel actually lubricates the engine and could end up extending the life of the city's fleet.

Russell said the benefits far outweigh the additional cost, about 20 to 30 cents per gallon or \$8,000 to \$9,000 a year.

Outside Keene, interest in biodiesel also is growing, Ohler said.

She knows of numerous farmers who are making small batches of their own biodiesel from waste oil to run farm equipment, and many current projects are exploring production of biodiesel from local farms.

She said the University of New Hampshire is hoping to fund a feasibility study to look at what New Hampshire could gain from growing crops — like canola — to make biodiesel.

In the past six months, Ohler has received calls from residents around the state asking where they can get biodiesel.

She said residents have expressed "phenomenal interest" in the renewable fuel.