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Sunday, August 12, 2007

Hyping hybrids

Cars using biofuel also coming into their own

GREEN MATTERS - PART SIX OF NINE

By Mary Jo Hill and Mark E. Ellis TELEGRAM & GAZETTE STAFF

William J. Bolch III of Spencer uses biodiesel fuel to heat his house, power trucks and farm tractors and, this summer, win a road rally.

In his 1994 Dodge 2500 three-quarter-ton pickup, Mr. Bolch took first place in the 78-mile Green Grand Prix Road Rally using 100 percent biodiesel fuel.

The July 6 event around Seneca Lake in Central New York drew 36 vehicles, each with a driver and a navigator. Everything from hybrids to a wood chip-powered SUV to a car fueled with an auxiliary hydrogen supply took to the course. Competitors were given specific directions, speeds and times to meet during the rally, and Mr. Bolch came the closest



At a cornfield behind his Spencer home, William J. Bolch III holds a jar of biodiesel as he leans against his '94 Dodge pickup truck, which is powered by the alternative fuel. The truck placed first in the Green Grand Prix. (Photos / ALEX WITKOWICZ)

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“They don’t realize that you really do get the mileage. I get 51 miles to the gallon.

ROBERT E. GILLESPIE,
RALLY ORGANIZER

COMING NEXT WEEK

Recognizing the need to reduce pollution and save money by cutting energy costs, the state has set guidelines affecting such local institutions as UMass Memorial Health Care Inc.

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and the new Worcester courthouse.

HOW ARE YOU GOING GREEN? Let us know by sending an e-mail to Mark E. Ellis at mellis@telegram.com or by clicking on the Green Matters link on the www.telegram.com home page. Include your full name and town in all e-mails. Your story may appear in the Sept. 2 Sunday Telegram.

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Chip Beam's wood-chip-powered Isuzu Trooper gets the green flag from Judy Phillips, mayor of Watkins Glen, N.Y., at the Green Grand Prix.

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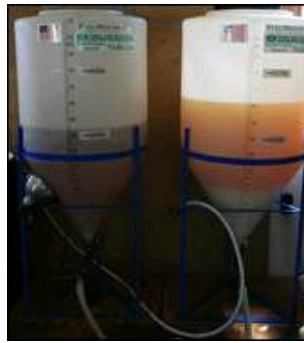


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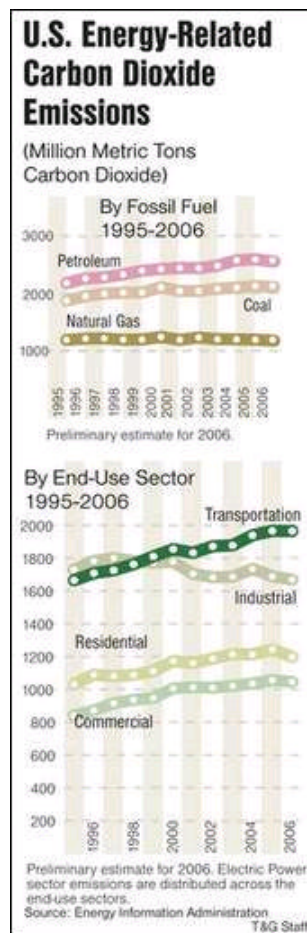
This unfinished biodiesel was made from cooking oil.

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Two 55-gallon tanks, which produce up to 40 gallons of biodiesel in six hours, sit inside Mr. Bolch's garage.

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to the perfect time.

Another Central Massachusetts resident, Craig Van Batenburg of Worcester, entered the race for the third time in a hybrid car, but he failed to finish. Like a number of other drivers, he and his family got lost and decided to return to the starting line and do volunteer work, he said.

This was the third annual Green Grand Prix, which is hosted by The International Motor Racing Research Center in Watkins Glen, N.Y. Other sponsors are the Glen Region of the Sports Car Club of America and the Seneca Lake Pure Waters Association.

"This is the only road rally in the United States that's for hybrid cars and alternative-fueled vehicles," said Robert E. Gillespie, rally organizer and a member of the Sports Car Club of America. "There are so many people on the road with these alternative vehicles that they deserve a sporting event just as much as anybody else."

The rally, which is run in compliance with Sports Car Club of America regulations, is held to "promote awareness of hybrid cars and alternative-fueled vehicles and to promote the reduction of greenhouse gases from vehicles, and also to promote energy independence," Mr. Gillespie said.

Proceeds from the event are donated to the Seneca Lake Pure Waters Association.

According to the U.S. Environmental Protection Agency, driving is the most polluting activity of most adults in the United States. Cars and trucks emit several types of pollutants into the atmosphere, including hydrocarbons, nitrogen oxides, carbon monoxide and carbon dioxide. Driving a hybrid vehicle or an alternative-fueled vehicle can reduce those contaminants.

According to the EPA, pollutants from gasoline and diesel fuel affect the environment and people's health in different ways. Hydrocarbons react with nitrogen oxides and sunlight to form ground-level ozone, a major component of smog. Ozone irritates the eyes and damages the lungs and is especially dangerous to people with respiratory ailments.

Nitrogen oxides also mix in sunlight with non-methane organic compounds, which are also emitted by automobiles, to form smog.

Carbon monoxide, which results from incomplete fuel combustion, reduces the flow of oxygen in people's bloodstreams and is particularly dangerous to those with heart disease.

Carbon dioxide does not directly impair human health, according to the EPA, but it is a



Green Cars
20 least polluting 2005 vehicles

Vehicle	Air pollution score*	Greenhouse gas score*	MPG city	MPG highway
Ford Escape Hybrid auto 2400	9.5	8	24	30
Mercury Mariner Hybrid auto 2400	9.5	8	24	30
Nissan Xterra Hybrid auto 2400	9.5	8	24	30
Ford Escape Hybrid auto 4800	9.5	8	24	27
Mercury Mariner Hybrid auto 4800	9.5	8	24	27
Nissan Xterra Hybrid auto 4800	9.5	8	24	27
Saturn ION Hybrid auto 4800	9.5	8	25	27
Subaru Outback Waggon auto 4800	9.5	8	25	28
Subaru Forester Hybrid auto 4800	9.5	8	25	27
Subaru Legacy Hybrid auto 4800	9.5	8	25	27
Subaru Forester auto 4800	9.5	8	25	26
Subaru Outback Waggon auto 4800	9.5	8	25	26
Mercury Sable auto 4800	9.5	8	25	26
Ford Taurus auto 2400	9.5	8	18	25
Mercury Sable auto 4800	9.5	8	17	24
Ford Escape auto 4800	9.5	8	17	24
Subaru Legacy auto 2400	9.5	7	22	28
Subaru Legacy auto 4800	9.5	7	21	28
Subaru Forester auto 2400	9.5	7	18	25
Subaru Forester auto 4800	9.5	7	18	25
Subaru Legacy auto 4800	9.5	7	22	25

*Driving in three cities for 10, with '10 being the least polluting.
Source: EPA, 2005.

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Green tips: How to 'drive green'

- Drive sensibly**
Aggressive driving, such as speeding, rapid acceleration and quick braking, can lower gas mileage by as much as 33% at highway speeds and 5% around town. Changing driving habits can save 15¢ to \$1.00 per gallon.
- Observe the speed limit**
In most vehicles, gas mileage increases rapidly at speeds above 60 mph. As a general rule, each 5 mph over 60 mph is like paying an extra 20¢ per gallon of gas. A typical savings by observing the speed limit is 23¢ to 34¢ per gallon.
- Avoid excess idling**
An idling engine gets 0 miles per gallon. And the longer the engine, the more gas wasted.
- Remove excess weight**
An extra 100 pounds for a vehicle can reduce miles per gallon by up to 2%. Save 2¢ to 6¢ a gallon by removing heavy, unnecessary objects from your vehicle.
- Use cruise control**
In most cars, maintaining a constant highway speed by using cruise control saves gas.
- Use overdrive gears**
When it's in overdrive, a car's engine speed goes down, saving gas and reducing engine wear.

Source: U.S. Department of Energy. 1 Gallon Fuel

 [Enlarge photo](#)



greenhouse gas that traps the Earth's heat in the atmosphere and contributes to global warming.

Vehicle emissions also include particulate matter, which can lodge inside lungs and deposit on buildings, as well as formaldehyde, which is a lung irritant and a carcinogen, the EPA says.

Concern about these pollutants, as well as the rising cost of gasoline, have led to the growing popularity of hybrid and alternative-fueled vehicles.

Hybrid cars and trucks that have been entered in the Green Grand Prix have included models by Toyota, Lexus, Honda, General Motors and Ford, according to Mr. Gillespie, who drives a hybrid Toyota Prius. He said some people have misconceptions about hybrid cars.

"They don't realize that you really do get the mileage," he said. "I get 51 miles to the gallon."

The secret, he said, is not to drive a hybrid slowly, but rather to drive it smoothly. Drivers should accelerate smoothly and anticipate stops by slowing down, in order to improve the gas mileage.

Besides the increased use of hybrids, high gas prices and growing concern about air pollution have also resulted in more experimentation with alternative fuels. The alternative fuel vehicles in the grand prix this year included, besides Mr. Bolch's biodiesel vehicle and the wood-chip SUV, an electric car and a compressed natural gas-powered car.

"It grows every year," Mr. Gillespie said of the number of race entries.

The wood-powered SUV, an Isuzu Trooper entered by Chip Beam of Alfred Station, N.Y., operated on a system developed after World War II when gas was in short supply. A fire in a drum in the back of the modified SUV burns wood chips and charcoal. The smoke from the fire is pumped through a conventional engine, where hydrocarbons in the smoke are burned to fuel the vehicle, according to Mr. Gillespie.

The Van Batenburg family of Worcester has been part of the race since its beginning, Mr. Van Batenburg said Friday. "I entered the first year they did it and I think I placed eighth out of 25 cars."

A former motorcycle racer, he said he finds the road rally format confusing. Driving his 2004 Toyota Prius this year with his wife and son as passengers, he dropped out of the race early because of the cryptic directions. "I got so lost, and I was with my family, so I said, 'Let's just go back to the starting line and see what we can do to volunteer.'"

Mr. Van Batenburg, who runs the Automotive Career Development Center of Worcester and has six hybrid cars, expects things to be different next year, however. He has made an agreement with Mr. Gillespie to start a second race in which vehicles will be tested for the best fuel economy. "He said as long as I run it, I could do it," Mr. Van Batenburg said. "It's easy and fun to do. I'll go out a couple days early and get a course together."

That race, he added, could be significant in what he sees as a battle between hybrids and biodiesels over which is better for the environment. "There's certainly competition between biodiesels and hybrids as to which will be the wave of the future," he said.

Mr. Van Batenburg has also served as a speaker each year for the educational programs that the sponsors offer on race day. The programs include a panel discussion on hybrid and alternative fuel vehicles, displays and demonstrations.

According to Mr. Gillespie, this is the first time a biodiesel vehicle has won the rally. He said Mr. Bolch's truck probably won "because his navigator was able to understand the directions." The event is like a game, he explained. Motorists are given directions to drive at certain speeds and to make specific turns, and sometimes the information is cryptic.

Mr. Bolch said he is at the opposite end of the spectrum from some alternative-fuel vehicle owners because he doesn't run his truck for high gas mileage. He can produce biodiesel for 70 cents a gallon, he said.

While it saves him money to use biodiesel, it also reduces pollution, he said. Biodiesel is a vegetable oil-based fuel that runs in unmodified diesel engines. It can be blended with regular diesel fuel or can be used alone in diesel-powered vehicles, according to Mr. Bolch's Web site, www.newenglandbiodiesel.net.

Mr. Bolch said he has no problem getting vegetable oil to process into biodiesel. Restaurants call him all the time to take their used oil. He said the road rally gave him some advertising for the business he owns, New England Biodiesel Equipment and Supplies. Another reason he participated was simply that it was fun.

"A lot of fun," he said. "A lot of very nice people."

And he also got a look at the new Saturn Vue hybrid and a Lexus hybrid, he added.

But for Mr. Bolch, seeing the hybrid vehicles didn't change his mind about biodiesel. He said he's still a fan of alternative fuels, and he noted that there's already an infrastructure in place at 50,000 truck stops where diesel is sold. If biodiesel were added to those facilities, he said, motorists could save money and cut pollution.



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