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## Four months without a gas fill-up and driving every day

(Tue, Jun 03 08) - Contributed by MOORE, RUSSELL J.

By RUSSELL J. MOORE

Over the last three months, a time when few conversations occurred without touching on the subject of high gas prices, James Eaves was cruising around Quebec, Canada on a daily basis without once refueling his Toyota Prius.

It was only last week, when he drove from Quebec to Modular Energy Devices, located on Altieri Way in Warwick that he actually needed to re-fill his tank.

There he visited Stephen Eaves, his older brother who runs the company. Even then, he was getting extremely efficient gas mileage.

"We just got 148 miles per gallon yesterday," said James Eaves.

An average car gets about 25 milers per gallon of gas.

The younger Eaves is a full-time academic at Universite Laval in Quebec, where he teaches and studies the usage and implementation of lithium ion-based batteries.

At Moldular Energy Devices that's what his brother and fellow engineers are doing - creating batteries that, up to a certain distance, power cars completely. James Eaves has done research for the company.

The technology impressed Congressman James Langevin (D-RI), who toured Modular Energy Devices on Thursday, along with two other small energy firms located in Cranston.

"We need to invest in alternative energy sources like this if we're ever going to reduce our dependence on foreign oil," said Langevin.

"This is the way to do it."

The Prius that the younger Eaves drives contains about eight lithium-based batteries stored in the trunk. As long as the car travels less than 40 miles per day, the batteries power the Prius without using any gas. After 40 miles, the car reverts to a normal hybrid using a combination of battery and gas power.

The concept—a car powered by batteries alone, and therefore not a hybrid at all—is every conservationist's dream, said James Eaves.

The current lead acid-based batteries used in hybrids like the Prius are cheaper to purchase, but less powerful and don't last as long.

Though lithium batteries are expensive, James Eaves believes the prices would drop fairly quickly as they became more popular due to the competitiveness of the market.

The batteries also need to be recharged on a fairly

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regular basis, but the price of using electricity would be far cheaper than the price of oil, the Eaves brothers say.

Modular Energy Devices opened its doors in 2002 using the state's Slater Fund as the seed money to get the operations going.

"We're really thankful to the state. They believed in us and got us going, but don't worry I'm sure we've paid them back in taxes," said Stephen Eaves.

The company recently reimbursed the seed money to the state.

Modular Energy Devices later hooked up with Enersys, the largest industrial battery maker in the world, which now funds the operation.

The company has about 10 employees, and is working to make the technology prevalent in automobiles throughout the world.

The ultimate hope, said Farshid Bakhtyari, the company's Vice President of Engineering, is to sell the technology to a company like General Motors that would then use it in their cars.

By the end of this year, Modular Energy Devices hopes to have about 40-50 cars using the lithium-based batteries for sale to the general public.

"It's a lot easier to show a company like General Motors this type of technology in actual cars rather than call them and say we've got this inside our offices," said Bakhtyari.

The Eaves brothers readily admit that they're racing against many competitors to develop this technology first. Toyota is reportedly working on a battery that will allow some of its cars to get close to 100 miles per gallon.

The race however, is one they say they're winning.

"Eventually, a Toyota or a Nissan will dominate this market. But what we're demonstrating here is that this market is viable now and the technology is available," said James Eaves.

"Innovations always came from small companies first and we believe we've got the best battery in the whole world."