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UC Davis to give plug-in hybrids a spin

100 families to help it test consumers' reaction to the cars.

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University of California, Davis, researchers are undertaking the first comprehensive consumer study of plug-in hybrid electric vehicles, officials announced Tuesday.

The study, which will provide 10 loaner cars to 100 families for six to eight weeks, is designed to find out how people feel about the rechargeable vehicles.

Dahlia Garas, program manager for the university's new Plug-in Hybrid Electric Vehicle Research Center, said the questions that need to be answered are numerous.

"We want to know how much they will use the car, how much they will charge, how often they will charge, where and when will they charge," said Garas.

The test cars will be loaned to people of different ages and with different lengths of job commutes.

While hybrid vehicles are a common sight on the road, plug-ins are rare. UC Davis estimates there are fewer than 100 in the entire country.

Industry and academic interest in the cars is heating up because plug-in hybrids can reduce greenhouse emissions and save on fuel costs, UC Davis officials said.

UC Davis estimates that plug-ins cost about 2.7 cents per mile when they're running in electric-only mode, compared with 7 cents per mile for a regular hybrid and 10 cents per mile for a gas-only powered car.

Gas-electric hybrids such as the Toyota Prius run noiselessly on batteries only at low speeds. At higher speeds, the gas engine takes over and at highway speeds, the Prius is entirely gas-powered.

General Motors plans to make the Chevrolet Volt, a plug-in hybrid, in time to meet its 2010 production target.

GM says Volt owners who drive less than 40 miles a day won't have to fill up, if they remember to plug in the hybrid for recharging.

Garas said GM could be one of the car companies that might use the data the UC Davis researchers gather from the Northern California plug-in drivers.

"Other things we want to know is, will they just charge at night at home or will they try to find 'opportunity' charges when they go to Costco or when they go to work?" she said.

The consumer program study begins in January and will last for two years. UC Davis' Plug-in Hybrid Electric Vehicle Research Center is funded with \$3 million from the California Energy Commission's Public Interest Energy Research (PIER) program. An additional \$1.8 million will come from the California Air Resources Board.

On Tuesday, the university rolled out the first car to be used in the study at a news conference attended by researchers; James Boyd, vice chair of the California Energy Commission, and representatives from Pacific Gas and Electric and the California State Automobile Association.

The cars will be converted Toyota Prius sedans with a socket in the bumper in which to plug an electrical cord.

The cars are charged from a standard 110-volt electric outlet. They can travel 20 miles on batteries – or get 100 miles per gallon in combined gasoline-electric mode.

So far, gas-electric hybrids have captured a small part of the U.S. market.

Hybrids on the street today are not plugged in. The electricity is generated when energy normally wasted during coasting and braking is converted into electricity, which is stored in a battery until needed by the electric motor.

The plug-in UC Davis Prius models has two batteries instead of one on a normal hybrid – a nickel metal hydride battery and a large lithium battery in the trunk.

At the end of eight weeks of driving the cars, the UC Davis test families will be better informed than anyone else on driving plug-in hybrids, said Tom Turrentine, an anthropologist who directs the UC Davis plug-in hybrid research center.

Turrentine said that's when researchers can ask the test-driving consumers if they would want a plug-in hybrid and how much they would pay.

"They will better informed than anybody," he said.

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