

-
- 8) Based on the gallons from question 6, how many tons of gas does Ron save each year? [Note: gasoline has a density = 0.67 g/mL]
- 9) How much money did it take Ron to turn his car into a plug-in hybrid? Considering his saved gallons of gas from question 6 and your estimated price of gas (see question 1) how many years will it take Ron to earn back the money he spent turning his hybrid into an experimental plug-in hybrid?
- 10) Considering his saved gallon of gas from question 6 and the size of the average car's gas tank (see question 1) how many fewer trips to the gas station will Ron make each year compared to the average driver of a non-hybrid car?

11) Considering how many fewer trips to the gas station (see question 10) and how long it takes to fill up a tank (see question 1) how many hours will Ron save each year pumping gas compared to the average driver of a non-hybrid car?

Experimental Hybrid Car Gets 80 Mpg

By Tim Molloy, Associated Press

[This article was edited for length and clarity]

CORTE MADERA, Calif. (AP) -- Politicians and automakers say a car that can both reduce greenhouse gases and free America from its reliance on foreign oil is years or even decades away. Ron Gremban says such a car is parked in his garage.

It looks like a typical Toyota Prius hybrid, but in the trunk sits an 80-miles-per-gallon secret -- a stack of 18 brick-sized batteries that boosts the car's high mileage with an extra electrical charge so it can burn even less fuel. Gremban, an electrical engineer and committed environmentalist, spent several months and \$3,000 tinkering with his car.

Like all hybrids, his Prius increases fuel efficiency by harnessing small amounts of electricity generated during braking and coasting. The extra batteries let him store extra power by plugging the car into a wall outlet at his home in this San Francisco suburb -- all for about a quarter.

"The value of plug-in hybrids is they can dramatically reduce gasoline usage for the first few miles every day," Gremban said. "The average for people's usage of a car is somewhere around 35 miles per day. During that kind of driving, the plug-in hybrid can make a dramatic difference."

Even after the car runs out of power from the batteries and switches to the standard hybrid mode, it gets the typical Prius fuel efficiency of around 45 mpg. As long as Gremban doesn't drive too far in a day, he says, he gets 80 mpg.

Backers of plug-in hybrids acknowledge that the electricity to boost their cars generally comes from fossil fuels that create greenhouse gases, but they say that process still produces far less pollution than oil. They also note that electricity could be generated cleanly from solar power. They have support not only from environmentalists but also from conservative foreign policy hawks who insist Americans fuel terrorism through their gas guzzling.