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100-M.P.G. Cars: It's a Start

Imagine if we could develop a passenger car that averaged more than 100 miles per gallon — or, if used only for short trips, 1,000 miles per gallon. What if it could cost the equivalent of only 75 cents a gallon to operate and needed to go to a filling station only every other month?

Surprise — we have all that technology today! We even have a handful of demonstration vehicles to prove it. All we lack is bold political and corporate leadership to put this technology in play immediately.

These vehicles underscore that if President Bush is serious about curbing our addiction to oil, there's plenty more that he could do — right now. There's no need for vague, long-term initiatives that are welcome but smack of procrastination.

The cars I'm talking about are known as "plug-in hybrids." They are similar to hybrids like the Toyota Prius, but they have bigger batteries and at night would be plugged into a standard 120-volt outlet to charge the batteries.

They can be built to have a 30- to 50-mile range before the gasoline engine needs to be used at all. So for someone who commutes 15 miles each way to work and rarely takes long drives, a plug-in hybrid usually functions as an electric vehicle and relies on gas only on rare occasions.

"If you used it only locally, you would go to a gas station only a couple of times a year," said Felix Kramer, founder of CalCars.org, a non-

Kicking the oil habit, one driveway at a time.

profit in Palo Alto, Calif., that converted a regular Prius to a plug-in hybrid. "This can be done right now. That's why people are so excited."

Estimates of gas mileage with a plug-in tend to be 100 miles per gallon and up, but these estimates depend on how the vehicle is used. People who only putter around their neighborhood could go thousands of miles on a gallon of gas — and a supply of household current.

Eventually, instead, maybe we'll be driving hydrogen fuel cell vehicles. A few years ago, I drove a General Motors hydrogen prototype on an Arizona test track, and it was capable of speeds of up to 100 miles per hour, handled well, was whisper-quiet and emitted only water vapor for exhaust. On the other hand, it also cost \$5 million to make.

In contrast, plug-in hybrids are economically and technically feasible today. While the batteries still aren't perfect, supporters say that plug-in hybrids can be mass-produced today for only about \$3,000 more than a conventional hybrid (which already costs \$3,000 more than a regular auto). Skeptics say that the additional cost might be greater, up to \$15,000 more than a regular gas car — but even that might find a market among car buyers seeking the Hot New Thing.

The higher sticker price is compensated for by lower operating costs, with power from the electrical grid. Indeed, if it recharged at night when rates drop, a plug-in hybrid could be run for the equivalent of 75 cents a gallon or less.

Another advantage is that plug-ins fit easily into the existing infrastructure, unlike cars fueled by hydrogen. At least at home, the infrastructure is as simple as an extension cord.

"None of this requires a Manhattan Project," notes James Woolsey, the former C.I.A. director, an ardent fan of plug-in hybrids to achieve greater energy autonomy and stop subsidizing extremism and dictatorships in the Middle East. Now, he says, government incentives are needed so that auto companies take the financial risk of producing plug-in hybrids.

Mr. Woolsey has a vision that starts with plug-in hybrids averaging, say, 125 miles per gallon. Then he would like to see them made of lightweight carbon (like Formula One racers), which would save enough weight to double mileage — taking the vehicle up to 250 miles per gallon.

Then make that plug-in a flex-fuel vehicle that burns E85 (which is 85 percent ethanol and only 15 percent petroleum), and it will go four times as far for each gallon of petroleum. That's 1,000 miles per gallon with existing (albeit not always very economical) technology.

Will everything work so smoothly? No, of course not. But even if only one-fifth of this dream were achievable, the result would still be 200 m.p.g. cars — and more energy security and less global warming.

The Bush administration is backing the technologies that go into plug-in hybrids, but languorously. Instead, the U.S. should promise to order 50,000 fleet vehicles of the first viable plug-in hybrid — that would be just the stimulus the carmakers need.

Mr. Bush was forthright in acknowledging America's oil addiction, but he sometimes sounded like an addict who declares he's going to quit "tomorrow." Let's start now. □



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