

## Invasion of the Green Machines

High gas prices have drivers chasing after hybrids. Is it a fad or a phenom?

By Richard J. Newman

Mike Byrne cares about two shades of green: the kind in the forest and the kind in his wallet. So when the Rice University psychology professor and his wife, Vicky, began shopping for a new family car last fall, they were willing to consider environmental factors--once their financial and practical needs were met.

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The Toyota Highlander SUV hit the sweet spot for the Houston couple, with plenty of space for their two kids and an optional third-row seat for bigger family outings. But gas mileage of barely 20 mpg for the V-6 version they wanted was a drawback. Then they heard that Toyota planned to introduce a gas-electric hybrid version of the Highlander, with the muscle of a V-8, the fuel economy of a compact, and even cleaner tailpipe emissions. So they ordered one from a local dealer, even though it won't arrive until late summer--and will cost about \$4,000 more than a regular Highlander. "It will make me feel better," says Byrne, "about driving a large vehicle in a place with such lousy air quality."

Hybrids, suddenly, are becoming the feel-good phenomenon of the decade. With gasoline prices at \$2.23 per gallon, according to AAA--up 23percent from a year ago--hybrid sales have more than doubled so far this year compared with the same period in 2004. And some industry experts foresee a hybrid in every garage, though others think it could all be one big fad. It's no secret that hybrids like the Toyota Prius, which has both a battery-powered motor and a conventional gas engine--and averages close to 50 mpg--have earned cultlike devotion from a growing niche of conscientious car buyers. Now, a number of automakers, led by Toyota, Honda, and Ford, are betting that a new lineup of hybrids will become America's next must-have vehicles.

A feisty Honda Accord hybrid--the fastest sedan in its lineup--went on sale late last year at a list price of \$30,140. So far the company has sold more than 4,500, and the hybrid accounts for nearly 7 percent of all Accord sales. Last month, Toyota's Lexus division began selling the first luxury hybrid, the RX 400h SUV. Buyers snapped up nearly 1,000 in the first week, with an additional 12,000 on order. Those will join 8,000 hybrid versions of the Ford Escape SUV already on

the road. All told, nearly 25 hybrids from a dozen carmakers are due in showrooms by 2008. Overall, hybrid sales will top 200,000 this year, according to J. D. Power & Associates, and some experts see nothing but open road ahead. Within 20 years, predicts Jim Press, Toyota's top U.S. executive, "virtually everything on the market is going to be a hybrid."

Japan takes the lead. If Press is right, Detroit could be in for an even worse drubbing than the Japanese have administered over the past two decades. Since 1995, General Motors, Ford, and Chrysler have seen their share of the U.S. market fall from 73 percent to about 58 percent, while Toyota, Nissan, and Honda have raised their share from 18 percent to 28 percent. GM and Chrysler will be at least seven years behind Toyota once their first full hybrids debut over the next couple of years. Ford has earned plaudits for the hybrid Escape, introduced last year, but it won't have a hybrid sedan until 2008.

Hybrids, in fact, are a key cog in Toyota's strategy to become the world's biggest and most successful carmaker. In 2003, Toyota surpassed Ford to become the world's second-largest auto manufacturer. And the company's ambition to grab 15 percent of the global auto market sometime after 2010 would put it in a position to overtake GM, which has been No. 1 since 1931. "Ford and GM are going to get smaller," says Mark Oline of Fitch Ratings. "Toyota will get bigger."

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Detroit's sliding fortunes have routinely been blamed on insular thinking and a disconnect with consumer tastes. Yet there's sound logic behind a go-slow approach to hybrids. Higher gas mileage may mean fewer stops at the filling station, but that doesn't mean hybrids necessarily save money. The battery pack, extra motor, and other technology that come with a hybrid typically add \$3,000 to \$4,000 to the base price of the car. Even with gas at more than \$2 per gallon, fuel savings may not pay for the premium. According to a savings calculator on Honda's website, for instance, the Accord hybrid, if driven 12,000 miles per year, would net just \$1,595 in savings over a decade, compared with a regular V-6 Accord. Byrne figures that at the rate he drives, it will take seven years for the mileage savings to offset the higher price of the Highlander hybrid. That's a year longer than the average American keeps a new car, according to R. L. Polk & Co. Other savings come from a \$2,000 federal tax deduction--which President Bush last week proposed raising to \$4,000--and state or local incentives.

Still, to many automotive engineers, that kind of math makes the case against hybrids--not for them. They find it perplexing that consumers would pay extra for a feature that adds little to the driving experience and takes so long to pay for itself. And while hybrids get their best mileage in stop-and-go traffic, where the electric motor is doing a lot of the work, the mileage boost is modest on the highway or in the kind of suburban driving many Americans do. "There are applications where it's great and applications where it's not so great," says Dieter Zetsche, chief executive of the Chrysler Group. Failing to quickly recognize the emotional appeal of the technology, he says, is one reason Chrysler doesn't yet have a full hybrid.

Like sports cars and convertibles, hybrids have become popular for reasons that have little to do with practicality. The only noticeable difference on the road is the golf-cart effect: The gas engine shuts down at stops to save gas, then starts up automatically when you press the accelerator. But hybrids also come with dashboard power meters and other funky instrumentation meant to appeal to tech hounds and make the cars seem cutting edge. When Ramsey Brous of Ithaca, N.Y., bought an Accord hybrid last December, he knew that he'd be paying extra to be an "early adopter" of the technology. That was fine with the 38-year-old bakery owner, who's more interested in helping push the development of hybrids than saving a few bucks. "I'm willing to be a guinea pig to get the car industry to pay attention to mpg," he says. Like many other hybrid fanatics, he religiously tracks his mileage in a notebook he keeps on the console between the front seats. His only complaint, ironically, has been . . . low mileage. Brous's Accord has averaged less than 24 mpg, about 30 percent below advertised figures. He blames the cold--a frequent complaint of hybrid owners in northern climates--and says his mileage has risen along with the temperatures.

While other automakers were dismissing the math, Honda, Toyota, and Ford sensed an appeal beyond dollars and cents. "There's a very emotional component there," says Jon Lancaster, who owns Toyota and Lexus dealerships in Madison, Wis., and sells 20 Priuses per month. With growing concern about U.S. dependence on foreign oil, he says, "it makes you feel like you can do something about it." When Toyota's engineers first began sketching the Prius, part of their goal was to improve the fuel economy of Toyota's overall fleet. But Toyota also hoped that mass-producing one of the world's most efficient cars would buff its image as a high-tech and environmental innovator.

#### Toyota Prius: A revolution becomes routine

Celebrity fare. For that, it has been willing to pay. Most analysts believe that the company has subsidized the Prius, eating some of the cost of the hybrid system instead of passing it on to consumers. Toyota also has gotten some unexpected help. Unsolicited endorsements from celebrities like Leonardo DiCaprio and

surging gas prices have transformed the Prius from an oddball experiment into an object of desire. Toyota sold 50,000 in 2004, after the redesigned second-generation Prius went on sale, and still had waiting lists. This year the company plans to sell 100,000. "They made a good play," says Larry Burns, head of research and development for General Motors. "Toyota did get ahead of the domestics."

The early lead has made Toyota the default option for many hybrid enthusiasts. When Cindy Petzold, who lives outside Madison, decided to buy a hybrid last fall, the Prius seemed like the only choice--even though she'd have to wait four months for it. "Toyota has been at it the longest," says the hospital lab technician, who calls herself a "recycling Nazi." Like many other hybrid owners, she hopes that driving a Prius signals she's doing her part.

The question now is whether the hybrid movement will gain momentum or run out of gas. So far, hybrid buyers have been wealthier and better educated than car shoppers overall. Automakers see that as an opportunity to market hybrid power trains as a premium feature, like a navigation system or leather interior, that well-wheeled consumers are likely to pay extra for. One reason Honda decided to load up the Accord hybrid and price it near the top of its lineup is that regular Accord owners were trading in their midpriced sedans for the less-expensive hybrid version of the Civic. That violated a basic rule of auto salesmanship: Get your existing customers to trade up, not down. It also told Honda that hybrids and their image of social responsibility might be a fresh way to land desirable customers. "We want to attract new, affluent buyers to the Accord," says Dan Bonawitz, Honda's marketing chief.

At some point, however, hybrids need to pay their own freight if they are to become more than a trendy way for drivers and automakers to feel better about themselves. Hybrid manufacturers hope that early adopters will help drive sales volumes high enough for the cost of the new technology to be spread across more vehicles, lowering average prices.

Moon roof. But J. D. Power forecasts that hybrid fever will cool off once the dual-powered vehicles hit about 3 percent of the market, probably around 2011. Pragmatic mainstream buyers may prefer to spend extra money on performance and comfort options instead of a feel-good power train. David Backman of Minneapolis looked at a Prius when he was shopping for a new car last year. But the computer specialist settled instead on a Hyundai Elantra GT. The mileage isn't as good, but he was able to load it up with a moon roof, leather interior, and other goodies, all for \$9,000 less than the Prius. "At 10,000 miles a year," he concludes, "I would never come close to recouping the premium."

GM's Burns sees other limitations of hybrids--under the Prius's hood. When Toyota introduced the second-generation Prius last year, GM joined the mad

dash of consumers rushing out to buy one. But not to drive. Instead, GM engineers disassembled the car at the company's Vehicle Assessment Center in Warren, Mich., and laid the guts of the propulsion system out on a long shelf. One major discovery: The Prius's hybrid power train contains 42 percent more parts than the machinery that moves a similar-size Chevrolet Malibu. That, argues Burns, is too much complexity for the car of the future.

A new kind of gas. Instead of cars with two motors and space-hogging batteries, he says, the automakers who rule the roads in the 21st century need to invent sophisticated but simpler cars that are cheaper to build. That's one reason that GM, like DaimlerChrysler and other automakers, is putting its chips on hydrogen-powered cars.

But the auto giant has a history of misjudging the market. Around the time Toyota was designing the first Prius, GM was rolling out the EV1, a battery-powered electric car that debuted, with much fanfare, in 1996. For less than the cost of a tank of gas, the car's batteries could be recharged at home, overnight, which led GM to tout the oblong two-seater as the car of the future. But progress in battery technology stalled, and the range never eclipsed 150 miles, which severely limited its appeal. Last year, GM decided to cut its losses on the \$1 billion project and retired the last of the 1,000 cars that had been leased to consumers. An EV1 is now headed to the Smithsonian.

Hybrids are a more urgent matter. GM and DaimlerChrysler recently joined forces on a crash R&D program, and both companies plan to introduce their first full hybrids in 2007. GM in particular could leapfrog its rivals by introducing full-hybrid versions of products that are still market heavyweights, like the Chevy Silverado pickup truck and the TrailBlazer SUV. Meanwhile, other automakers that have confidently dismissed hybrids as a fad are suddenly racing to catch up with Toyota and Honda. Cash-rich Nissan has purchased Toyota's technology and is rushing a system to market. Ford subsidiary Mazda plans a hybrid version of the Tribute SUV. Even BMW promises a hybrid announcement later this year. Most drivers may never track their mileage in a notebook, yet there may be no way of escaping cars with a conscience.