

# Miles to Go

## Why automakers don't sell a car that gets 50mpg.

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So gas just hit another miserable milestone. Unleaded regular is averaging a record \$3.30 a gallon and seems likely to blast past \$4 by Memorial Day. Wouldn't it be great if you could drive a car that gets 50 miles per gallon? Well, you can. Just hop on a plane and fly to Europe, where all new cars average 43mpg, or Japan, where the average hits 50mpg. Here in the United States, we're stuck at 25mpg in our considerably larger and more powerful cars, trucks and SUVs. So why can't we do better? Here's the dirty little secret: we can. "If you want better fuel economy, it's just a question of when auto companies want to do it and when consumers decide they want to buy it," says Don Hillebrand, a former Chrysler engineer who is now director of transportation research for Argonne National Labs. "Auto companies can deliver it within a year."

A 50mpg car would certainly put a tiger in the tank of the moribund U.S. auto industry. But don't get your checkbook out quite yet. The reality is that you won't see a car on a showroom floor in America with 50mpg on the window sticker for at least three years and maybe longer. Sure, all auto companies are focusing on jacking up fuel economy, especially since Congress just mandated that all new autos sold by 2020 must average 35mpg. The new mileage mantra also is motivated by the fact that car sales are weak, partially because of panic at the pump. But putting out a 50mpg car any time soon is daunting even to the maker of America's mileage champ, the 48mpg Toyota Prius. "We're close enough to spit at that now," says Bill Reinert, Toyota's national manager of advanced technologies. "It's not an incredible stretch, but it's an incredible stretch to do it on a mass-market basis."

It might seem ludicrous to you that there isn't a mass market right here and now for a 50mpg car. For crying out loud, we've entered the age of the \$128 fill-up. (The cost of topping off a Chevy Suburban). But here's the problem: to get to 50mpg in the near future, consumers would have to trade off at least one of three very important things—cost, drive quality or safety. That's because the quickest way to make a car more fuel-efficient is to make it smaller, lighter and equip it with some high-tech (a.k.a. costly) propulsion system like a plug-in gas-electric system.

Consider the exercise Ford just went through. It ran a computer simulation on what would happen to the mileage of a Ford Focus small car if you built it entirely out of lightweight aluminum. Losing the steel allowed the Focus to drop 1,000 pounds—30 percent of its body weight. That enabled Ford to outfit it with a tiny one-liter engine, half the size of its old engine, but far more fuel efficient because of new technology. Best of all, the small motor goes just as fast as the big one because the car is so much lighter. The result: fuel economy on this fabulous Focus went from 35mpg to 50mpg. What's stopping Ford from moving this car from pixels to pavement? The cost of an all-aluminum car could top \$50,000—not a sum the typical economy-car buyer is willing to pay. "What's going to be the cost acceptance for this much improvement in fuel economy?" asks Dan Kapp, director of Ford's advanced engines and transmissions. "We don't know yet."

Still, all the major automakers are putting their cars on a crash diet. Ford wants to drop 250 to 750 pounds in all its models by 2012. Toyota and Nissan want to cut the fat by 10 to 15 percent. But this slim-fast campaign is running into the drive for more safety features in automobiles. Back in the 1980s, the Honda CRX-HF and the Geo Metro each got more than 50mpg, but they didn't have airbags or steel beams in their doors to protect occupants in a crash. These days, cars are equipped with six air bags, steel safety cages and electronic stability control to prevent spinouts. That makes cars much safer—but a lot fatter. "We are working in two directions," says Toyota's Reinert. "One is to make cars as safe as possible, and that generally makes them heavier. And the other is to make cars as fuel efficient as possible."

Downsizing also has its drawbacks. For starters, U.S. highway statistics show the smallest cars have death rates 2.5 times higher than the biggest. What's more, wimpy engines often (under) power small cars and that's a drawback many Americans won't abide. I recently drove the diminutive Smart car for a week. While it's certainly cute, its puny 70-horsepower engine and slow-shifting transmissions made me feel like Fred Flintstone could outrun me. That might be enough power for twisty Old World roads, but here in America, we have a need for speed. "Going zero to 60 in 15 seconds doesn't fit the average American consumers idea of mobility today," says Reinert. "That's too doggy."

Another quick way to improve fuel economy—and chase away customers—is to strip out stuff that makes the ride comfortable. For example, engineers could remove the soundproofing material that keeps road and engine noise out of the cockpit. Back in the '90s, when Detroit was fond of noting that gasoline was cheaper than bottled water, Hillebrand worked on the popular Chrysler minivan. They were having problems making the cabin quiet, so they sacrificed mileage to add sound insulation. "We just sprayed penny a pound asphalt into it to quiet it down because that was what the customer wanted," recalls Hillebrand. "Another mile per gallon would not make Car and Driver headlines. But having no wind noise did."

These days, though, more mpg makes news. And GM has certainly been getting plenty of mileage out of the Chevy Volt plug-in electric car it hopes to have on the market by 2010. On Thursday, they took reporters inside their Volt lab for another in a series of updates--unusual for a work in progress. And next week, GM will conduct a global online discussion with journalists to address the question: "Why don't automakers produce a 100mpg car?"

So when I called to ask why there are no 50mpg cars, Volt chief engineer Frank Weber practically scoffed at me. "Fifty miles per gallon is not the target," he said in his German accent. "We are working in the three-digit range." All hype aside, analysts say GM just might be the first to achieve 50mpg with the Volt, which Weber assured me will get well over 100mpg. Crackling with confidence, he "guaranteed" the car's advanced lithium-ion battery is ready for the road. Many automakers are racing to develop lithium-ion batteries (like those used in laptops), which juice up faster and go farther on a charge. But only GM is claiming to have cracked the code. Weber also said there is "no doubt" the Volt will deliver on GM's promise of driving for the first 40 miles on pure electric power. After that, a tiny engine kicks in, but only to recharge the battery, not to turn the wheels like conventional hybrids. "Our goal," says Weber, "is to avoid the usage of gasoline completely."

Wouldn't that be nice? But at what price? Analysts predict the Volt will top \$30,000, and consumers might have to pay an additional \$100 to \$200 a month to lease that advanced, but unproven, battery pack. Weber dismissed battery leasing as "an old idea," but declined to divulge pricing on the Volt so far from its launch. Any new technology like this, though, comes with a hefty premium, which takes years to pay off in savings at the gas pump. So taking the high-tech road to high mileage comes down to a question of pay now or pay later. (In the case of some high-priced hybrids, like the late and not-so-great Honda Accord hybrid, the payoff never came.)

In the end, what I found most fascinating about raising this 50mpg question is just how nervous it made Honda and Toyota. Honda wouldn't even speak to me about it. Perhaps that's because Honda has a Prius competitor in the works that it has promised will have better mileage when it hits the road next year. Let's see, what's better than 48mpg? And Toyota is in the midst of creating an entire lineup of Prius models, which will include a wagon, a family car and a tiny urban runabout beginning in 2010. So if you take the Prius power plant and put it into a Smart-size car, what do you get? Toyota isn't saying, but there could be a hint in Reinert's assessment of Mercedes's mighty mite. "The Smart is incredibly attractively packaged," he says. "It could be the iPhone version 1 of cars." Version 2.0 could roll into a Toyota showroom in a few years—with a window sticker well above 50mpg. And not a moment too soon.

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