

Here Come the Low-Mileage Hybrids

Written by David Morris

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The September introduction by Ford of a hybrid SUV marks the end of the beginning of the long-evolving saga of the hybrid electric vehicle. After more than two decades of public and private initiatives, the hybrid is in the marketplace. And how. Since 2000 the demand for hybrids has grown by a remarkable 88 percent per year. Every American, German, and Japanese car company will introduce at least one hybrid model in the next two years.

The demand for hybrids exceeds supply. Toyota has a several-month backlog of orders for its Prius and recently raised its price by several hundred dollars.

To date, incentives have been used to enable the auto industry to move the hybrid from research and development to commercialization. The federal tax deduction for hybrids is structured to disappear as car companies begin selling hybrids at a profit. The deduction drops from \$2,000 in 2003 to \$500 in 2006, and then to zero. Early in 2004 Toyota announced it was making a profit on sales of the Prius.

Now we need to design incentives that encourage certain kinds of hybrids. Government incentives today rarely distinguish among hybrids. To qualify for most federal and state incentives, including tax incentives, priority for purchasing for government fleets, free parking, and access to high-occupancy-vehicle (HOV) freeway lanes, a vehicle simply must be equipped with both an engine and electric motors for propulsion. Period.

Equating a hybrid with a high-efficiency car was sufficient so long as a hybrid was a high-efficiency car. The hybrid Honda Civic and Toyota Prius met this standard. The Japanese companies transformed modestly efficient vehicles into outstandingly efficient ones.

But the introduction of the Ford Escape ushers in the era of low-mileage hybrids. The hybrid Escape's overall fuel economy is better than other vehicles in its class but is still only half that of the Prius or Civic. Chevrolet's new hybrid trucks, the Sierra and Silverado, might get little more than 20 miles per gallon.

The mileage situation is, if anything, even worse than this because the new hybrids don't get

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significantly better mileage on the highway. A hybrid can shut off its engine when idling and can use its battery and electric motor to accelerate. Thus it achieves markedly better mileage in stop-and-go city driving than on the open highway. That's where the fuel economy comes from. For example, the Prius achieves 60 miles per gallon in city driving and 51 miles per gallon on the highway. On the open road a hybrid Escape gets mileage no better than that of several other vehicles in its class, such as Toyota's RAV4. And yet one suspects that hybrid SUVs and pickup trucks will primarily be used outside of cities.

This creates a fascinating challenge for Ford's advertising agency. Nine out of 10 ads for SUVs or trucks show vehicles bouncing along a tortuous mountain trail, charging through the mud, or speeding through magnificent desert vistas. Will Ford's ads depict its new hybrid in situations where its technology truly shines (i.e., in congested city traffic)? Or will it tout the fact that its hybrid has the equivalent of 255 horsepower under the hood compared to only 240 for the regular Escape, even though when it uses this horsepower its overall environmental impact is no different from that of the regular Escape? Sadly, to ask the question is to answer it.

As we enter the era of low-mileage hybrids, governments need to redesign their incentives to channel engineering know-how in technological directions that achieve social and environmental goals. One way to accomplish this is to require qualifying hybrids to be high-efficiency cars.

Some states and cities already do. Some, such as Arizona and Georgia, require the qualifying hybrid to achieve a fuel economy much better than the average of its vehicle class. Some require an absolute minimum mileage. Connecticut calls for 40 miles per gallon. San Jose, California, allows free parking for hybrids that get at least 35 miles per gallon.

Efficiency standards weren't controversial so long as all hybrids met them. But the introduction of low-mileage hybrids has changed the political situation. Recently California passed a bill to allow hybrids the right to use HOV lanes on freeways, but only if they get at least 45 miles per gallon. Both the CEO of Ford and the head of the United Automobile Workers vigorously and publicly complained that only the Prius and Toyota Insight, imported Japanese cars, would qualify.

There is another largely overlooked area in which hybrid incentives should now be focused: the development of plug-in hybrids.

The crowning achievement of hybrids is that for the first time in 80 years they create a new automotive technological platform. They allow a car to run on electricity as well as engine fuel. Current hybrid electric vehicles do not actually run very far on electricity. Their battery capacity is relatively small, and only their engines can charge the batteries. The next hybrids should allow the electricity grid to charge the batteries. People should be able to recharge their batteries overnight while at home or in the commuters' parking lot while at work. A plug-in hybrid could run primarily on electricity. When a car runs on electricity, it can achieve a fuel efficiency of nearly 150 miles per gallon and eliminate exhaust emissions.

As a matter of historical record, when it comes to plug-in hybrids, Toyota was the principal

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opponent. In the late 1990s it successfully fought California's initial requirement that hybrid batteries be rechargeable from the grid. Indeed, the Prius advertising tag line is "You don't have to plug it in." You don't have to plug in a plug-in hybrid either. But you can, and by so doing, you can have a dramatic impact on the nation's environment and our dependence on imported oil.

Hats off to the public and private sectors for successfully midwifing the hybrid electric vehicle from the drawing boards to the showrooms. The hybrid has become a bestseller. Now we need to move beyond incentives that simply reward car manufacturers for equipping their cars with propulsion motors. We need to design and introduce policies that use the hybrid technology as the launching point for dramatic fuel savings and the creation of a dual-fueled transportation system that relies on electricity as well as engine fuel.

Wait times for currently available hybrids – such as the Toyota Prius and Honda models – average two to three months. Local dealers will start taking orders for the Ford Escape SUV hybrid in two to three months, and Lexus dealers will start taking orders for the manufacturer's hybrid SUV on April 15. New hybrid models are expected later this year.

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