



Energy Co2 : Transportation

Hybrid Vehicles: Going the Distance

One of the important fronts of the clean energy revolution will be the search for stable, sustainable, and eco-friendly sources of energy to fill our transportation needs. While biofuels and hydrogen fuel cells are slated as long-term alternatives to fossil fuels, they still need some time - perhaps decades - to mature as technologies.



Taxis are a fixture on the crowded roads of New York City, but more of the city's transport needs could be met by hybrid vehicles in the coming years.

Since their release onto the global market during the late 1990s, "hybrids" have become increasingly recognized as a way to cut gas usage and carbon emissions. By combining conventional petroleum/diesel engines with electronic generators, hybrid electric vehicles (or HEVs) are more fuel-efficient than conventional vehicles, and currently have the potential to get between 40 and 70 miles per gallon of petroleum.

Deal breakers

Fuel-efficiency is indeed a deal breaker for many hybrid buyers, even those who do not normally let environmental concerns (such as global warming) influence their buying decisions. If consumers believe the claim that hybrids can save them thousands of dollars at the gas pump over a 10-year period, then it is simply a question of economics.

"Hybrids clearly cut fuel consumption, particularly in city traffic," says Christoph Lauterwasser, automobile expert at the Allianz Center for Technology in Germany. "The real potential for fuel efficiency depends on the category of hybrid."

The "category of hybrid" is dependent on the extent to which the electric components supplement the power supplied by the combustion engine. A "micro-hybrid," for example, relies heavily on conventional engines, but utilizes electric components to a limited extent to achieve better fuel efficiency. On the other hand, a "full-hybrid," such as the best-selling Toyota Prius, can run entirely on either petroleum or electricity, but usually an efficient combination of both.

Looking at the sparse current usage of hybrid vehicles around the world may lead one to dismiss hybrid technology as an insignificant step in cutting greenhouse gas emissions. Experts, however, are confident that more and more hybrids will be sold in the coming years.

"With only a few hundred thousand vehicles, the proportion of hybrid vehicles in the global market is still quite small," says Lauterwasser. "But market estimates suggest that by 2015, hybrids could account for up to 2 percent of all cars in Europe, 6 percent in the United States and up to 8 percent in Japan - rapid growth from a modest starting point."

Some governments are seeking to make these growth projections a reality by offering a number of incentives to hybrid buyers. Federal and local government in the United States have begun to offer significant tax credits for hybrid buyers, as well as various other perks, such as discounted parking or exemption from smog inspections.

Beyond dollars and cents

But even beyond these dollars-and-cents incentives, some consumers and businessmen are making the switch to hybrids for other reasons. Just ask Roo Rogers, co-founder of OZOcar, a luxury car service in New York City that relies completely on hybrid vehicles.

"Our customers tend to be high net-worth individuals, including celebrities, bankers and entertainment executives," says Rogers. "Perhaps most importantly they are the unconverted - they start out as customers who are not inclined towards environmental issues."

As an alternative to taxis, limousines, and traditional car services, OZOcar gives New Yorkers the option of riding across town in hybrid cars equipped with a laptop computer, wireless internet, and satellite radio.

From the perspective of sustainability and climate protection, OZOcar's fleet of around 85 cars are 70-percent more fuel-efficient and emit 90-percent less CO2 than the thousands of yellow taxis that currently dominate the crowded streets of New York City.

OZOcar is just an example of the many environmentally conscious initiatives that Rogers believes "could have an enormous impact not only on the city's health, but the country as a whole."

"Environmentally friendly transportation is the future," says Rogers. "It is unavoidable."

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