

GOING GLOBAL

Hybrid growth is a worldwide phenomenon, but for different reasons

The fact that Toyota Motor Corporation sells 23 Toyota and Lexus hybrid models around the world demonstrates that this technology has found nearly universal acceptance, but the factors driving that demand vary greatly from region to region.

NORTH AMERICA

In North America, Toyota and Lexus currently offer a total of 11 hybrid models, plus the Prius plug-in. Sales of hybrids have grown from 10 percent to nearly 16 percent of Toyota's sales mix in the U.S., and Toyota has a more than 60 percent share of the U.S. hybrid market.

When the original Prius was launched, fuel economy and emission regulations did not drive sales. Rather, it was the vehicle's unique technology and recognition of its positive impact on the environment. The pricing, unique design and advanced technology of the second generation Prius, along with spiking gas prices, drove sales to over 180,000 units and established hybrids as a viable alternative to conventional gasoline-powered vehicles.

Also lifting Prius sales were improved performance and, especially in California, access to carpool lanes. Future hybrid sales are likely to be driven by ever-higher Corporate Average Fuel Economy standards, which are slated to reach 54.5 mpg by 2026, and stricter emissions regulations adopted by California and 11 other states. As a result, hybrid growth in the U.S. has been pulled by customer demand and will be pushed by future regulation.

EUROPE

Unlike North America, which had gasoline prices below \$2 per gallon when the first generation Prius was introduced, Europe has traditionally taxed gasoline at much higher levels, while giving a break to diesel fuel. This has lead to a market in which small, diesel-powered cars with manual transmissions dominate. It was into this environment that the first generation Prius was introduced in 2000, but remarkably 5,000 were sold.

In Europe, Toyota and Lexus offer a slightly different mix of the 11 U.S. hybrid models, and more than 600,000 have been sold to date.

At Lexus, hybrid technology differentiates the brand from other luxury makes. Since introducing the RX 400h in 2005, hybrids have been expanded across the lineup and in all markets outside of Russia. Currently, 92 percent of all Lexus models sold in Europe have a hybrid powertrain.

Sales of hybrids are expected to grow as other manufacturers offer the technology as a result of tightening CO_2 standards, which ratchet down from 130 grams per kilometer in 2015 to 95 gp/km in 2020. Also, under Euro VI emission standards, particulate and NO_x requirements for diesels will become more stringent, requiring more expensive after-treatment and thus leveling the price differential between that technology and hybrids.

Another factor that will fuel future hybrid sales in Europe is growing urbanization. By 2030, it is estimated that 75 percent of Europeans will be living in urban areas. As a result of traffic congestion, it is expected that drivers who traditionally favored manual transmissions for fuel efficiency will transition to automatic-equipped cars, especially hybrids that can deliver the same or better fuel economy than manual diesels.

JAPAN/ASIA

While the Japanese and Asian markets have yet to implement fuel economy regulations similar to CAFE in the United States, some governments have offered incentives to buyers of green cars. In Japan, subsidies have been offered for as much as \$5,700, helping to fuel a boom in hybrid sales.

As a share of new vehicle purchases, hybrids accounted for only 1 percent in 2000, growing to 20 percent by 2009, and now, even with incentives of only \$1,500 per car, hybrids account for 2 out of every 5 cars sold, or 40 percent of total light-vehicle sales.

With 17 models sold in Japan, the largest and most diverse hybrid lineup in the world, Toyota accounts for 80 percent of hybrid sales in Japan and 45 percent of the total market.

However, government incentives are not the only drivers of hybrid sales in Japan. With their high fuel economy and roomy packages, hybrids offer a great solution to dealing with high fuel prices and traffic congestion.

CONCLUSION

Customers in Europe, North America and Asia have had different reasons for initially embracing hybrid technology. But the need to increase fuel economy, regulate greenhouse gasses, reduce overall emissions and provide personal transportation in congested urban areas are converging on a global scale. This ensures that hybrid technology will remain a mainstream answer to these difficult challenges in the years ahead.