

Rushing From Gas Pumps to Charging Stations? Consider the Consumer

By Allan Vivian

In 2009 the U.S. Congress passed legislation that mandates a corporate average fuel economy standard of 35.5 miles per gallon by the 2016 model year. By September 2011, the Obama administration plans to establish new standards that will apply to the 2017 through 2025 model years. These standards will likely increase the pressure on manufacturers to design, build, and market more fuel-efficient vehicles during the remainder of this decade and beyond.

Among automobile manufacturers, the transition to more fuel-efficient and environmentally friendly vehicles has been going on for quite some time, but this phenomenon is accelerating in 2011. January 2011 marks the first time that an executive from a major automotive manufacturer has publicly thrown down the gauntlet to his peers and declared, "Let's remember, the destination for all of us is zero emissions." By implication, he may also be saying, the ultimate goal is a world where gas pumps will be replaced by charging stations.

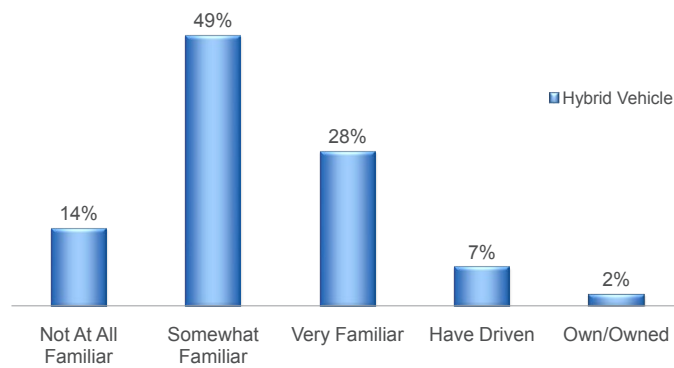
No one expects this transformation to occur any time soon. However, judging from the products on display at the 2011 Detroit Auto show, automotive manufacturers are stepping up their efforts and will soon be offering a bevy of alternative powertrain vehicles to the U.S. consumer. The Nissan Leaf and Chevrolet Volt were introduced late in 2010. The Leaf is a true electric vehicle, with a range of approximately 100 miles between charges, and the Chevrolet Volt is a plug-in hybrid, with a more limited battery range, but with an on-board gasoline-powered engine that recharges the battery while the vehicle is on the road, extending its range to approximately 300 miles.



Many more alternative powertrain vehicles are now in the pipeline, including new body-style variations of the leading hybrid vehicle, the Toyota Prius. Hybrid vehicles differ from plug-in hybrid, because they retain a gasoline engine that powers the vehicle alongside a battery. The gasoline engine kicks in only when needed, and this results in much higher fuel economy than a conventional gasoline engine. Toyota plans to bring 12 new or redesigned alternative-fuel vehicles to market by the end of 2012.

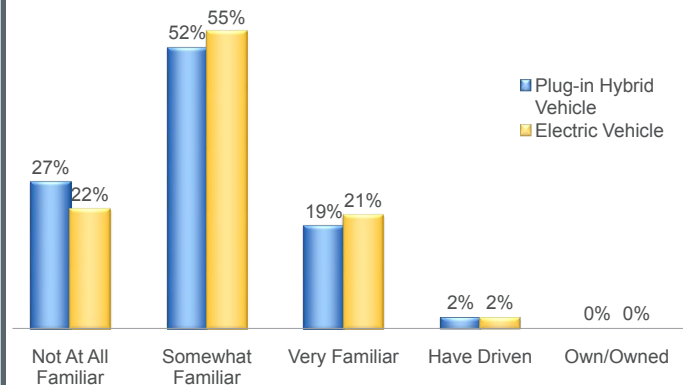
The U.S. consumer is now, and will continue, in the foreseeable future to be, presented with many new and exciting models that possess alternatives to the standard gasoline engine. We will soon see how the public responds to the Leaf and Volt, but consumer reception given to hybrid vehicles to date, has been less than enthusiastic. For the past three years, hybrid sales have actually been in decline. It has been predicted, though, that this will turn around in 2011, based on an improving economy, higher gas prices (fuel prices now tipping the \$3.00 per gallon mark in some parts of the country and predicted to go as high as \$5.00 per gallon) and the proliferation of exciting new hybrid models.

Auto Technology Familiarity Hybrid



Question: Automobile manufacturers are developing alternatives to the standard gasoline engine. How familiar are you with the following types of automobile technology?

Auto Technology Familiarity Plug-In Hybrid/Electric



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Of course, any sustainable shift away from gasoline-powered vehicles to alternative drivetrain vehicles must be accompanied by a shift in consumer acceptance. The first indicator of acceptance is likely to be a significant increase in consumer familiarity with these vehicles. U.S. consumers are unlikely to purchase a big-ticket item like a new vehicle equipped with an engine with that they have little or no experience with or prior knowledge. Hybrid vehicles have been on the market in the U.S. since 1999 when Honda introduced the Insight. Toyota followed a year later with the Prius. But, despite its availability for over a decade, hybrid familiarity among consumers remains surprisingly low. The overwhelming majority of consumers still lack firsthand knowledge of anything but the standard gasoline engine-powered vehicle.

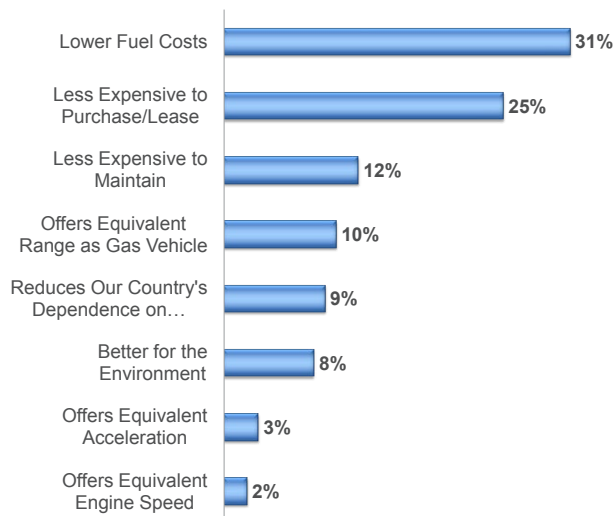
As the [Auto Technology Familiarity—Hybrid](#) chart above shows, less than one in ten (9%) of those currently in the market to buy a new vehicle have actually driven or owned a hybrid. Approximately two-thirds of U.S. new vehicle intenders today say that they are only somewhat familiar or not at all familiar with them (63%). In order for the transformation to charging stations to take place, we would expect this statistic to be one of the first things to change.

More recently developed products, like the plug-in hybrid and the electric vehicle just now coming to market, are even further back on the consumer familiarity curve. More than three quarters of consumers currently in the market to buy a new vehicle are not at all or only somewhat familiar with them. See [Auto Technology Familiarity—Plug-in Hybrid/Electric](#) chart above.

While the 2009 law was no doubt designed with two goals in mind: first, to reduce our nation's dependence upon foreign oil, and second to reduce pollution caused from tailpipe emissions—policies that benefit the collective good of the country—U.S. consumer priorities are inextricably tied to their own wallets. Clearly, the way to consumer hearts and minds is going to follow a very different path than federal mandates. Federal legislation alone is unlikely to affect the needed change in consumer behavior and could ultimately only waste the heavy investment now being made by manufacturers.

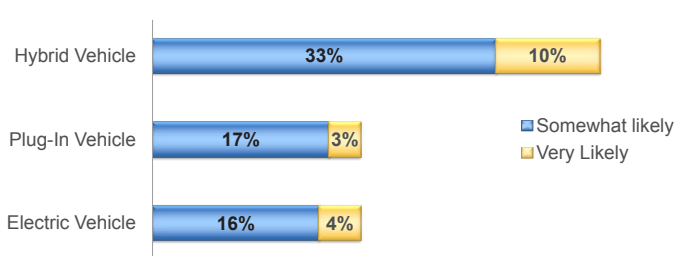
For the transition to take root among consumers, two factors are critical. The first is that they must feel these alternatives provide them with an attractive opportunity to reduce or eliminate their expenditures on gasoline. This is the most influential consideration for consumers. Certainly, if gas prices remain high or go higher, this will have a significant impact on consumer interest in these new vehicles. The second factor is likely to be the tougher of the two for manufacturers to achieve. The price of the vehicle needs to be lower than, or at least competitive with, gasoline-powered vehicles. Consumers must be convinced by the MSRP on the Monroney sticker in the window of that shiny new vehicle that it will cost them no more, and preferably less, to purchase or lease a vehicle with alternative drivetrain technology than one that is gas powered. Other considerations such as maintenance cost and range are also important to consumers, but if the first two factors are not addressed, the others won't really matter. See [Most Influential Vehicle Characteristic](#) chart on page 3.

Most Influential Vehicle Characteristic



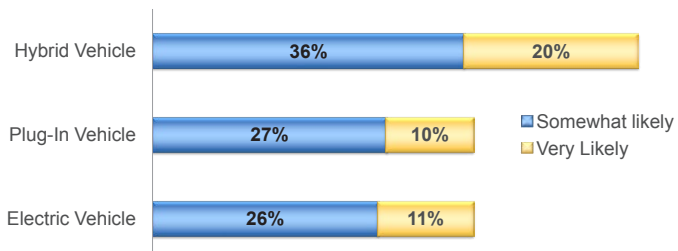
Question: If you were to consider purchasing a vehicle that had an alternative system of propulsion, like a hybrid or electric vehicle, or one that runs on a different fuel like diesel or hydrogen, which one of the following considerations would be most influential to you?

Purchase Likelihood—Next Purchase



Question: How likely are you to purchase a vehicle equipped with the following powertrain or fuel types for your next vehicle?

Purchase Likelihood—Next 10 Years



Question: How likely are you to purchase a vehicle equipped with the following powertrain or fuel types in the next 10 years?

So what are the near-term prospects for vehicles that provide alternatives to the gasoline-powered engine? At the current market price of vehicles and gasoline, about four in 10 (43%) of those who plan to purchase a new vehicle in the next two years said they would be at least somewhat likely to consider a hybrid. Approximately one in ten said they would be very likely to buy a hybrid (10%). Purchase consideration of Plug-in hybrids and electric vehicles is significantly lower, but approximately one in five (20%) are at least somewhat likely to buy. (See [Purchase Likelihood—Next Purchase](#) chart above.)

Are prospects brighter in the long term? Consumers show signs of recognition that change is coming. More than half of those currently in the market for a new vehicle anticipate that within the next 10 years they will be likely to consider a Hybrid (56%). Approximately one-third of those currently in the market for a new vehicle said they would be likely to consider a plug-in hybrid or an electric vehicle within the next 10 years. (See [Purchase Likelihood—Next 10 Years](#) chart above.)

Are some consumers more likely than others to move away from their gas dependency? The answer to this question is that some U.S. consumers do appear to be more likely to consider hybrids than others. Manufacturers anticipate that younger people, as well as those who are more environmentally conscious, will be among the first buyers of the Leaf and Volt. Our data suggest that new

vehicle buyers among minority groups are also more likely to be early buyers of these and other alternative drivetrain vehicles than their Caucasian counterparts (based on percentages of each group, not total number of buyers).

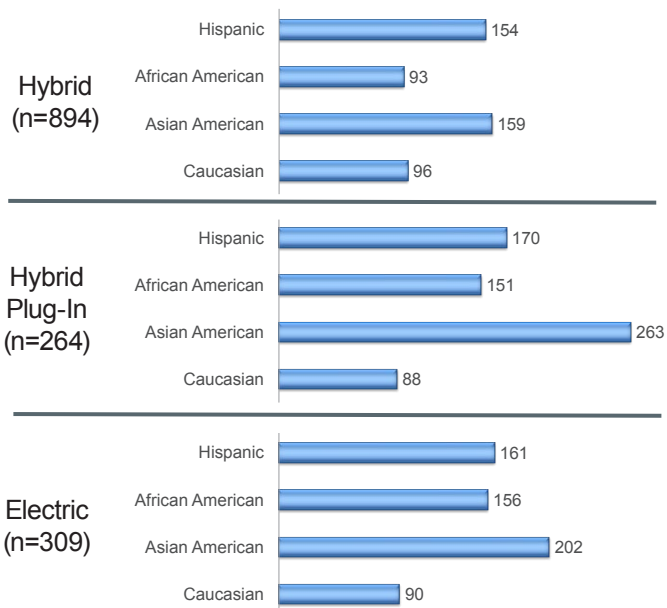
The charts on the next page show that Caucasians index below 100 on being very likely to buy hybrids, plug-in hybrids, and electric vehicles, indicating that the transition among this group will be fairly slow. However, among Asian-American, Hispanic and African-American consumers, the scenario is very different. Consideration index figures are far higher among all three of these groups compared to Caucasians (except for African-Americans level of consideration for a hybrid vehicle which is comparable to Caucasians). Among these four groups, Asian American consumers show the most promising levels of consideration. The implication is that one potentially effective marketing approach may be to begin by targeting minority buyers (as well as younger and environmentally conscious buyers). Youth and minority groups have often served as trendsetters in the arena of American culture involving music, entertainment, communication, and technology. This could potentially be one way to gain the traction needed.

In summary, great strides are now being made by manufacturers to bring more fuel-efficient and environmentally friendly vehicles to market. Current

Purchase Likelihood Index By Ethnicity

(Indexed by incidence of ethnic group within the population of 2 year intenders)

Very Likely To Purchase (Within 2 Years)



An index of 100 is average, scores above 100 indicate an above average likelihood to buy, while scores below 100 indicate a lower than average likelihood to buy an alternative drivetrain vehicle.

policies of the federal government appear to be ensuring that manufacturers will continue to aggressively develop these vehicles over the next two decades in order to meet national standards of fuel economy. As a result, the challenge of successfully marketing these products to consumers now looms ahead for automotive manufacturers.

Currently, few of those consumers who intend to purchase a new vehicle over the next two years have any serious level of familiarity with the technology that will be an integral part of this new wave of vehicles. However, consumers

want a way to reduce what they have to spend on fuel for their vehicles, and they are looking for vehicles that deliver this benefit without costing more to purchase or lease initially.

It is clear that a great deal of consumer education will have to take place over the coming years in order to affect sustainable change of behavior. It appears also that new vehicle intenders among the minority ethnic groups show a greater likelihood to consider these new vehicles than do Caucasians. Targeting youth, environmental groups, Asian Americans, African Americans, and Hispanics may be a good way to begin the process of engaging the U.S. consumer and affecting a change that may eventually lead to a transformation from gas pumps to charging stations.

Source: The data presented in this article are from Decision Analyst's New Vehicle Brand Barometer Syndicated Study conducted between December 2010 and January 2011. Sample sizes, except where otherwise indicated, are over 8,000 near term new vehicle purchase considerers (within the next two years).

Footnote: The author acknowledges that there are other major initiatives being explored in the automotive industry, primarily involving alternative fuel types like diesel, hydrogen, and biofuels that are not touched upon in this article. This was omitted because the plug-in hybrid and the electric vehicle are, as of the introduction of the Chevrolet Volt and Nissan Leaf, now commercially viable and appear to be the preferred alternative approaches among OEM's currently.

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Decision Analyst is a global marketing research and analytical consulting firm. The company specializes in advertising testing, strategy research, new products research, and advanced modeling for marketing-decision optimization.



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