



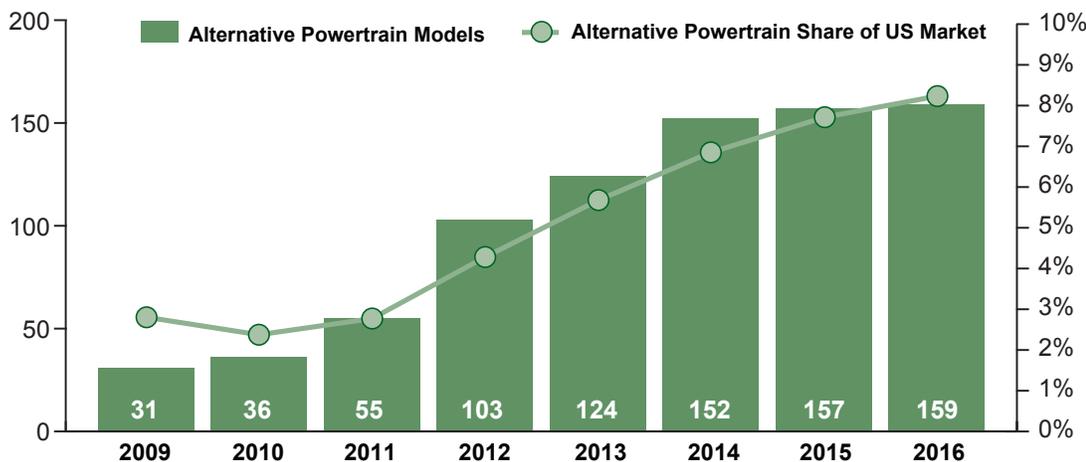
Why Go Green?

While the alternative powertrain vehicle market is small, compared with the traditional gasoline-powered vehicle market, OEMs are placing much of their attention on this portion of the market. This management discussion focuses on the most important aspects of this market and provides information and insight based on J.D. Power and Associates' extensive resources and data, and includes perspective based on forecast information and opinions from the company's experts in this market. In addition to the opinions of consumers who responded to the survey for this inaugural *Green Automotive Study*, J.D. Power leveraged information gathered from its *Power Information Network® (PIN)* business unit and J.D. Power Automotive Forecasting, as well as social media information from the Consumer Insights and Strategy (CIS) group, which gathers unfiltered consumer insight from millions of online consumers.

The number of models that include alternative powertrains is rapidly rising. In 2009, the US market included 31 alternative powertrain car and truck choices (not including diesel engine vehicles). In 2011, that number has grown to 55 models and is expected to top 100 models in 2012 and to reach 159 models by 2016. However, the outlook for sales of alternative powertrain vehicles in 2016 is expected to represent only approximately 8% of the overall US vehicle market, or nearly 1.4 million units of a 16.7-million-unit market.

Of the projected 159 alternative powertrain models in 2016, Toyota is expected to produce 25, accounting for one-third of this market or about 465,000 units.

Alternative Powertrain Models and Market Share



Source: J.D. Power and Associates 2011 US Green Automotive StudySM

Of the projected 159 alternative powertrain models in 2016, Toyota is expected to produce 25, accounting for one-third of this market or about 465,000 units. Notably, the remainder—two-thirds of the total, or slightly less than 1 million units—will include the other 134 models. In

Continued

contrast, the expectation for the traditional vehicle market is 15.3 million units, which will include approximately 290 models. Looking at the alternative powertrain market through this lens, the payout seems hardly worth the effort.

So why are OEMs placing so much of their attention on such a small portion of the market? There are multiple answers to this question, such as:

- Easing consumer frustration with rising fuel prices in an era when driving times and distances are on the rise
- Improving their brand's environmental footprint and nurturing a "green" brand reputation
- Contributing to the reduction of US dependency on foreign fuel sources
- Addressing government mandates for fleet-wide fuel economy standards

OEMs are also banking on a groundswell of advocacy, should technological advances lead to alternative powertrains that better align with consumer expectations and wallets. The key for OEMs is for one of the technologies they offer to be the one most embraced by the masses, legislators, and ancillary industries and interest groups. While OEMs are touting and lobbying for their choice as the right one, there continues to be a great deal of confusion from the consumer perspective. Consumers are somewhat apprehensive to make the leap to an alternative powertrain vehicle for a variety of reason, including:

- Fuel availability and the fueling process
- Maintenance costs and reliability
- Performance trade-offs
- Disbelief that the benefits in economy and emissions are worth the personal investment

In many instances, even when consumers can get comfortable with the above issues, the price premium of alternative powertrain vehicles, which can range from \$1,500 to upwards of \$25,000, is prohibitive.

Economic conditions, rising fuel prices, and green consumer sentiment will all play a big part in defining the alternative powertrain vehicle market of tomorrow. Given the ongoing dialog regarding environmental responsibility and creating fuel independence, combined with consumers' recollections of the financial strains and burdens experienced during the economic downturn of 2008-2009, the potential to "supercharge" the alternative powertrain market is there. The greatest challenge will be enabling consumers to get comfortable with both the financial and lifestyle investment in order to make the leap from traditional vehicles to alternative powertrain vehicles.

The linchpin in this equation is agreement as an industry and as a society regarding what the right choice is. In order to increase the alternative powertrain vehicle market from an 8% share to one far more significant, government, OEMs, and the supporting industries need to agree on the direction to be taken in the future and build the structure and resources necessary to gain consumer confidence and support. Without that support, there will continue to be many choices of varying solutions vying for a relatively small portion of US vehicle sales.

This report is derived from the *J.D. Power and Associates 2011 US Green Automotive Study*,SM which is the most comprehensive study of the US green automotive market, examining and exploring a spectrum of issues regarding alternative energy vehicles, including design, production, and marketing.

For more information about our products and services, please contact:

Mike VanNieuwkuyk
Executive Director,
Global Automotive Research
(248) 312-4254
Mike.VanNieuwkuyk@jdp.com

© 2011 by J.D. Power and Associates, The McGraw-Hill Companies, Inc. All Rights Reserved.

The information contained herein has been obtained by J.D. Power and Associates from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, J.D. Power and Associates does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omissions or for the results obtained from use of such information.

This material is the property of J.D. Power and Associates or is licensed to J.D. Power and Associates. This material may only be reproduced, transmitted, excerpted, distributed or commingled with other information, with the express written permission of J.D. Power and Associates. The user of this material shall not edit, modify, or alter any portion. Requests for use may be submitted to information@jdp.com. Any material quoted from this publication must be attributed to "2011 US Green Automotive Study, Why Go Green?," published by J.D. Power and Associates, © 2011 by J.D. Power and Associates, The McGraw-Hill Companies, Inc. All Rights Reserved. Advertising claims cannot be based on information published in this special report.