EXECUTIVE SUMMARY:
Electric Vehicle Consumer Survey
Consumer Attitudes, Preferences, and Price Sensitivity for Plug-in Electric Vehicles and EV Charging Stations

NOTE: This document is a free excerpt of a larger report. If you are interested in purchasing the full report, please contact Pike Research at sales@pikeresearch.com.

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Section 1
EXECUTIVE SUMMARY

1.1 Introduction and Overview

Two automakers, Chevrolet and Nissan, ended 2010 with the launch of their first highway-capable plug-in electric vehicles (PEVs) for the mass market. These vehicles, which became commercially available in December 2010, enable drivers to reduce both transportation fuel expenses and greenhouse gas (GHG) emissions.

Other auto manufacturers are electrifying their fleets with new models. For example, Toyota plans to launch the PEV Prius in January 2012, and additional manufacturers have plans to launch plug-in electric models in the near future. In fact, nearly three dozen plug-in electric models are expected to be introduced by 2012. Although 2011 shipments in North America will be limited to less than 20,000, Pike Research anticipates the category will grow swiftly, with a CAGR of 58.2% between 2011 and 2017 in the region.

To assess consumer demand, preferences, and price sensitivity for PEVs and electric vehicle (EV) charging infrastructure, Pike Research conducted a web-based survey of 1,051 U.S. consumers in the fall of 2011 using a nationally representative and demographically balanced sample. The key findings of this survey are summarized in the following sections.

1.1.1 Interest in Electric Vehicles

- Pike Research’s survey found that only a fraction of consumers currently own a hybrid electric vehicle (HEV). Out of the 1,051 respondents interviewed, only 4% currently own or lease a hybrid.

- Nearly three-fourths of respondents (74%) drive 40 miles or less to work daily and therefore would be well served by a plug-in hybrid electric vehicle (PHEV) with a 40-mile range. Survey participants stated that they drive an average of 22.2 miles to work per day. Nearly all plug-in vehicles have been developed to exceed consumers’ daily driving distance by providing a minimum of 30 miles of all-electric range under optimal conditions. The exception is the Toyota Prius Plug-in Hybrid Vehicle, which has an electric range of 15 miles.

- 81% of respondents stated that improved fuel efficiency would be an important factor when purchasing their next vehicle. This preference should serve as a good foundation for consumer EV demand and should partially offset demand inhibitors such as price sensitivity.

- Fundamental interest in PEVs was strong among our survey participants, with 40% stating that they would be “extremely” or “very” interested in a plug-in hybrid or all-electric vehicle with a range of 40 to 100 miles and an electricity cost equivalent of $0.75 per gallon.
Electric Vehicle Consumer Survey

Chart 1.1 Consumer Interest in Electric Vehicles

- Levels of interest in EVs were not dramatically different between demographic segments such as age, gender, income, and level of education, suggesting that these vehicles should have solid mass-market appeal. That said, consumers under age 30 are somewhat more likely to demonstrate interest in PEVs, as are people with higher levels of education.

- Pike Research’s price sensitivity analysis, utilizing the Van Westendorp Price Sensitivity Meter methodology, indicates that for a traditional internal combustion engine (ICE) vehicle that would ordinarily cost $20,000, the optimal price point of a comparable PEV would be $23,750 – a significant price premium. While this indicates an understanding among consumers that PEVs will be priced at a premium, the amount is significantly less than automakers’ intended prices. We believe that this gap between actual pricing and consumer willingness to pay will be a significant inhibitor of demand for PEVs.

- Our results indicated that one size does not fit all when it comes to consumer PEV preferences. When asked to choose between five different PHEV and EV range/price options, respondents did not state a clear preference for any one configuration. Of the choices offered, the electric-only model with a 100-mile range had the greatest number of respondents showing interest with 24%. It is notable that another 25% of respondents stated that they would not purchase any of the options provided.

- When asked which vehicle brands they would consider for an EV, panelists were most likely to choose Toyota (51%) and Ford (46%), two automakers that did not have PEVs on the market at the time of the survey. Chevrolet (42%) and Nissan (33%), the two manufacturers that launched models in North America in 2010, ranked fourth and fifth, respectively.

(Source: Pike Research)
1.1.2 Vehicle Charging Infrastructure

- A vast majority of survey respondents (80%) indicated that they would be “extremely” or “very” interested in upgrading to a residential “fast-charging” EV charging unit that would utilize the same amount of electricity but reduce charging times from 8 to 12 hours to 2 to 4 hours.

- However, Pike Research’s survey results indicate that pricing is once again an issue with fast-charging equipment. Although our analysis suggests that the first generation of residential fast-charging equipment will cost between $500 and $800, only 28% of panelists stated that they would be willing to pay $500 or more for this capability. The average price consumers were willing to pay was $408.

- PEV intenders in our survey expressed strong interest in workplace, private, and public charging stations. The most popular choices for charging stations were the workplace (74%) and roadside charging stations (82%).
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SCOPE OF STUDY

Pike Research has prepared this report to provide participants involved in the automotive market with a study of consumer demand for electric vehicles (EVs) and their associated charging infrastructure. One of the major objectives of the report is to impartially assess levels of consumer interest in EVs and electrical charging. Pike Research also examines consumer willingness to pay for these products and provides an evaluation of key attitudes and behaviors that are relevant to this market.

Great care was taken in constructing a survey questionnaire that would yield the most accurate and unbiased results possible. However, it should be noted that consumers often have difficulty providing survey responses that will accurately predict their purchase behavior for products that have not yet been introduced in the market.

SURVEY METHODOLOGY

Pike Research conducted a web-based survey of 1,051 U.S. consumers in the fall of 2011 using a structured online questionnaire. The survey invitation was sent to a nationally representative and demographically balanced sample of consumers who are members of a large online panel. Respondents were offered a chance to win prizes in exchange for their participation. Price sensitivity analysis was conducted using the Van Westendorp Price Sensitivity Meter methodology. The margin of error for these survey results is +/- 3% with a 95% confidence interval.