



## Press Release

### **J.D. Power and Associates Reports: To Increase Electric Vehicle (EV) Sales, Automakers Must Address Economic Challenges, Not Just Tout Environmental Advantages**

Lower Fuel Bills and Special Rates from Utility Companies  
Are among Ways Electric Vehicles Owners May Save Money

**WESTLAKE VILLAGE, Calif.: 8 November 2012** — Electric vehicles (EVs) will remain a very small part of the U.S. market unless automakers can lower prices and demonstrate the economic benefits to consumers, according to the J.D. Power and Associates 2012 Electric Vehicle Ownership Experience Study<sup>SM</sup> released today.

The inaugural study explores the EV shopping and consideration experience as well as the ownership experience, and provides an analysis of the needs and expectations of current and future EV owners.

Current EV owners most often cite environmental friendliness as the most important benefit of owning an EV. Nearly one-half (44%) of these owners indicate the top benefit of their vehicle is lower emissions, compared with emissions from gasoline- or diesel-powered vehicles.

However, consumers considering an EV for their next vehicle primarily want to lower their fuel costs. While 11 percent of consumers would consider an EV for its environmental benefits, 45 percent want to reap the economic benefits of fuel savings. For example, current EV owners report an average monthly increase in their utility bill of just \$18 to recharge their vehicle's battery—which is significantly less than the \$147 that they would typically pay for gasoline during the same period of time.

“Current EV owners focus on the emotional benefits of owning an electric vehicle—which are having a positive effect on the environment—but the way for manufacturers to take EVs to the masses and increase sales is to address the economic equation,” said Neal Oddes, senior director of the green practice at J.D. Power and Associates. “There still is a disconnect between the reality of the cost of an EV and the cost savings that consumers want to achieve.”

Compared with sales prices for a similar gasoline-powered vehicle, the study finds that owners of all-electric vehicles (AEV) pay a premium of \$10,000, on average, for their vehicle, while plug-in hybrid electric vehicle (PHEV) owners pay a \$16,000 premium, on average. Based on annual fuel savings, it would take an average of 6.5 years for AEV owners to recoup the \$10,000 premium they paid at the point of purchase, while the payoff point for PHEV ownership is 11 years.

“The payback period is longer than most consumers keep their vehicle,” said Oddes. “The bottom line is that the price has to come down, which requires a technological quantum leap to reduce the battery price. There also needs to be an improvement in the infrastructure, or the number of charging stations outside of the home. Until those two concerns are addressed, EV sales will remain flat.”

The study finds that virtually all EV owners charge their vehicle at home. One-third of EV owners elect to use a standard 120-volt outlet to charge their vehicle rather than install a special home-charging station, which can

recharge an electric vehicle in half the time that it takes when using a standard 120-volt household outlet, and provides greater ability to leverage lower off-peak electricity rates.

EV owners who elect to have a 240-volt charging station placed in their home pay an average of \$1,500 for equipment, installation and inspection, plus a monthly amount for the electricity used. However, the study finds that 43 percent of owners received their charging station for free. Among those who do pay, the cost of the charging station, installation and inspection are recouped through fuel savings in the first year of ownership.

“Some utility companies offer lower rates when EV owners charge their vehicle at home overnight,” said Oddes. “The availability of special electric rates for EVs varies by utility company and region. For instance, most California utilities offer EV discount plans, but few utilities in other states currently do the same.”

The study finds that 31 percent of EV owners are either on a time-of-day plan through their utility company that offers lower-priced charging during off-peak hours (entire household on same meter); have a special EV plan with a separate meter; or pay a flat fee per month to charge their EV (no separate meter required).

“Electric utility companies have an opportunity to focus more on EVs, as the utilities are not currently being thought of by consumers as part of the EV equation,” said Jeff Conklin, senior director of the energy practice at J.D. Power and Associates. “The study shows that consumers perceive their electric company more favorably when it provides special rates for EV charging.”

The study finds that nearly one-half (43%) of EV owners indicate they also charge their vehicle away from home. Whether at work or in public places, such as shopping malls and airports, when they charge their vehicle away from home, 85 percent of the time EV owners don’t have to pay for the service.

“Most utility companies’ websites have a calculator that demonstrates the potential savings on electric vehicle fuel to help identify how much may be saved by charging an EV rather than using gasoline,” said Conklin. “More work needs to be done to let consumers know where charging stations are located in their area to alleviate some of the concerns they have about where an EV can be charged away from home.”

Oddes notes that as battery technology improves, manufacturers are able to produce more affordable EVs, which should also lower the current price premiums. Lowering the cost of ownership may help increase market share—electric vehicles currently account for less than 1 percent of new-vehicle sales in the United States, according to LMC Automotive—but there are also other hurdles to overcome.

“There still is anxiety among consumers about the cost and lifespan of EV batteries, the infrastructure needed to charge EVs and the vehicle’s driving range,” said Oddes. “Automakers need to continue to address these issues and educate consumers about the benefits of EV technologies in order to gain momentum in the marketplace.”

Driving range and the availability of charging stations are the top concerns among consumers considering an EV. The study finds 12 percent of EV intenders are concerned about the driving range. However, current EV owners indicate an average daily commute of 34 miles—which is well within the range of a fully charged EV.

The size of the vehicle is the second-most-frequently cited reason for rejecting an EV. Consumers considering an EV look more frequently for a midsize sedan than any other size vehicle. Currently, most of the EVs being produced are in the small vehicle segments, which should change as new midsize models enter the market in 2013. In addition to price and vehicle size, concerns with reliability of EVs rounds out the top three rejection reasons.

The payoff for automakers is that once they get consumers to buy an EV, they tend to retain them as customers. Overall, 82.5percent of owners indicate they “definitely will” or “probably will” buy another EV from the same brand. The average retention among owners of all vehicle types is 49.8 percent.

The following tips may be helpful to consumers when considering an electric vehicle:

- Drivers with predictable, unwavering daily driving requirements are the best candidates for all-electric vehicles. If your driving requirements are variable, consider a plug-in hybrid electric vehicle that provides pure electric driving for shorter distances, but can handle a longer trip without recharging, if necessary, by utilizing the gasoline-powered back-up engine.
- Be sure to investigate potential federal or state tax incentives associated with an electric vehicle purchase. These incentives may vary, depending on the make and model selected. Also, ask your local utility company about special EV battery-charging programs and special rate programs that may be available.
- Topography affects electric vehicle range. If you live in a mountainous region, your driving range will be somewhat variable, as the vehicle consumes charge going uphill and then captures energy while coasting downhill.
- The U.S. Department of Energy offers maps that show the locations of charging stations through the country at <http://www.afdc.energy.gov/locator/stations/>

The 2012 Electric Vehicle Ownership Experience Study is based on online responses from more than 7,600 vehicle owners and panelists who either currently own an EV, are considering an EV for their next vehicle purchase, or shopped for an EV but ultimately decided not to purchase one. The study was fielded in October 2012.

#### **About J.D. Power and Associates**

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