

The State of Electric Vehicle Markets, 2017: Growth Faces an Attention Gap

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Issue

Ambitious global goals to improve energy efficiency and reduce greenhouse gas emissions are motivating a shift to electric vehicles (EVs), which include battery-electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs), and fuel cell electric vehicles. In 2018, the governor of California called for five million EVs to be on California’s roads by 2030. The International Energy Agency projects a global increase in EVs from 2 million today to 280 million by 2040. Creating sustained market growth to meet such goals presents numerous challenges to all EV stakeholders, including governments, the automobile industry, electricity suppliers, non-governmental organizations, and consumers.

Key Research Findings

This project summarizes the latest in a series of recurring surveys of consumers regarding their awareness and consideration of EVs. Two surveys of the population of car-owning households in California were conducted in February and June of 2017; sample sizes were 1,681 and 1,706, respectively. Several survey questions have been repeated over multiple years in similar samples, allowing comparison to earlier results.

Only a small core of consumers is considering an EV for purchase. The primary measure of interest is the extent to which respondents had already considered an EV for their household at the time of their questionnaire. Most car-owning households—nearly four out of five—had given little to no consideration to any type of EV. In both surveys, fewer than 8% had actively shopped for or had already acquired

an EV. Further, people who had actively shopped for an EV had generally decided not to acquire one at that time.

Awareness and understanding of EVs does not appear to be increasing. Repeated questions between the 2014 and 2017 surveys show a lack of discernible change (Figure 1). Allowing for the distinction between PHEVs and BEVs in 2017, no more households appear to be paying attention to EVs than were in 2014. This result extends to essentially all other measures of awareness, vehicle name recognition, incentive awareness, and EV driving experience.

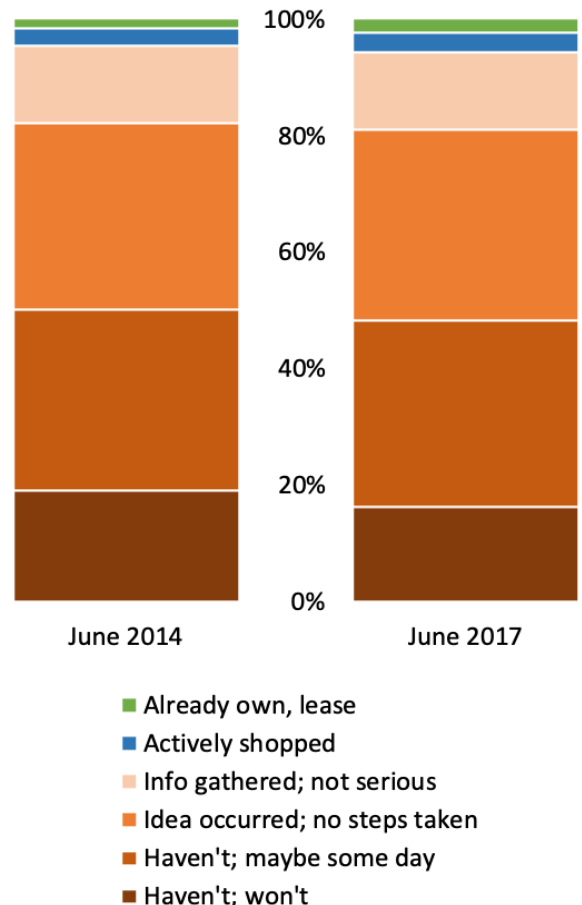


Figure 1. Car-owners' consideration of electric vehicles to date, 2014–2017

Expanding EV markets depends on closing the attention gap. There seems very little prospect to grow the market very far, very fast unless the vast majority of car-owning households in California—who are not paying attention—can be engaged in the transition to EVs. A high percentage of households can't give a reason why they would buy an EV. To be motivated to act they must first be able to imagine why they would consider an EV. It is necessary to increase peoples' awareness and knowledge of EVs, provide them with a basis to create informed assessments, and thus prompt them to consider EVs for their households.

Socioeconomic measures are of little use to segment the EV market; context and attitudes are better. Socioeconomic and demographic measures—age, sex, education, and household income—are not powerful descriptors of consideration of EVs. Measures of context, such as whether a household had a home parking location with reliable access to electricity, were more strongly related to EV consideration. Creating this access regardless of building type or whether the occupants rent or own may allow households who have not considered EVs to do so. Unsurprisingly, attitudes toward public health and the environment were important. People who believed substituting electricity for gasoline, “in the region where I live,” was better for human health and the environment were more likely to have considered an EV.

Not all households are equally open to new automotive technology like EVs. The February 2017 survey tested households' propensity to search for information about and buy “new” automotive technology. Those willing to explore unfamiliar technology were more likely to have considered an EV.

Those who think about the future tend to prefer EVs. The 2017 surveys also assessed whether people rate their present actions to be influenced more by immediate or farther future consequences. Respondents who are more motivated by farther future consequences were more likely to have considered an EV.

Gender matters. In both surveys consideration of EVs was generally low among female and male respondents, but the messages, media, and mechanisms for encouraging greater consideration may differ by gender. Further research should be designed to more specifically address the role of gender in EV consideration, purchase, and use. Gender differences in EV markets are discussed further in a separate NCST-funded analysis of data from a late-2014 sample of new car buyers in California.ⁱ

Further Reading

This policy brief is drawn from “State of the Plug-In Electric Vehicle Market: Report I” and “State of the Plug-in Electric Vehicle Market: Report II,” research reports from the National Center for Sustainable Transportation, prepared by Kenneth S. Kurani of the University of California, Davis. To download the reports, visit: <https://ncst.ucdavis.edu/project/state-of-the-plug-in-electric-vehicle-market-report-1/> and <https://ncst.ucdavis.edu/project/state-of-the-plug-in-electric-vehicle-market-report-2/>

ⁱ <https://ncst.ucdavis.edu/project/are-we-hardwiring-gender-differences-into-the-plug-in-electric-vehicle-market/>

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