

# A Survey of Electric Vehicle Awareness & Preferences in Vermont

Research Conducted by The MSR Group

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## **Executive Summary**

With support from the John Merck Foundation, Drive Electric Vermont worked with The MSR Group to conduct a statistically valid survey of Vermonters to determine attitudes and knowledge of plug-in electric vehicles (EVs). The survey results revealed that most Vermonters are aware of EVs. Over a quarter of respondents report that they are likely to consider a plug-in vehicle for their next vehicle purchase. The most commonly cited barriers to EV purchase included vehicle cost and vehicle range. Barriers specific to particular demographics were identified, as well as those groups most likely to purchase an EV.

These results are informing Drive Electric Vermont's marketing plan and public education efforts, ensuring that our messaging responds to the interests and concerns of Vermonters across varying demographics.

## Survey Purpose

Drive Electric Vermont (<http://driveelectricvt.org/>) is a statewide coalition of policy makers, industry leaders and citizens dedicated to promoting awareness and adoption of electric transportation in Vermont. It is led by VEIC's Transportation Efficiency team. Drive Electric Vermont is the "go to" plug-in electric vehicle resource for Vermont consumers.

Drive Electric Vermont commissioned a consumer survey to establish baseline attitude, awareness, and preference metrics for electric vehicles, defined as all-electric and plug-in hybrid vehicles, via quantitative research to inform targeting and messaging of marketing programs.

While Vermont is expected to be a national leader in the adoption of electric vehicles, moving further and faster is imperative to fully benefit from the transition to a clean energy economy. The data obtained from this survey provides tools to refine messaging and means of communicating with key Vermont actors and market sectors about EVs, enabling more efficient use of marketing resources by identifying the most receptive markets and what messages will most resonate with them.

## Project Objectives

Through this research, we sought to better understand:

1. Motivators and barriers related to the purchase of EVs;
2. Level of awareness/knowledge surrounding EVs and their benefits – and where consumers seek out information about EVs;
3. Attitudes surrounding EVs;
4. Likelihood to purchase an EV in the future; and
5. Awareness of Drive Electric Vermont.

## Survey Design

We conducted an online survey through the MSR Group, a nationally recognized market research firm, between April 3 and April 13, 2014. Online surveys are considerably less expensive to administer than phone and mail surveys and generally yield a higher response rate, allowing us to achieve a larger sample size. In this survey, qualified respondents were those who are residents of the state of Vermont and age 18 or above. A total of 495 respondents completed the survey. Survey response data were weighted by age and gender to match the proportions reported by the 2010 U.S Census.. At a 95% confidence level, the margin of error associated with our results is  $\pm 4.4\%$ .

For this project, we utilized Qualtrics to procure the panel of respondents. In order to insure high-quality responses to the survey, Qualtrics included a question (Q32) that acted as an “attention filter”. If respondents answered the attention-filter question incorrectly, then the respondent’s answers were flagged, and Qualtrics did not charge for that respondent. After all of the data was collected, The MSR Group conducted a quality check of all the responses – including those that had incorrectly answered the attention filter question – and determined which responses needed to be removed from the data set. Other reasons for deleting an entry include respondents who have “straightlined” (i.e. chosen the same option, such as the first choice, throughout the survey), answered with jibberish in open-ended questions, or completed the survey in a time that was far below the average overall response time.

## Survey Results

The appendix includes detailed information on survey responses. Key findings included:

- Vehicle cost was the #1 cited barrier to EV purchase, followed by limited vehicle range and lack of public charging stations.
- Among respondents 35 and over and those whose household income is \$50,000 or greater annually, vehicle range was the #1 barrier to EV purchase.
- Nearly three-quarters of respondents noted that performance of the vehicle in snow and on dirt roads was ‘very important’ to their purchase decision.
- Over 90% of respondents claimed to be aware of all-electric and plug-in hybrid electric vehicles and over a third of respondents reported to be interested in learning more about them.
- Approximately a quarter of respondents reported that they were likely to purchase an all-electric vehicle and approximately a third reported to be interested in purchasing a plug-in hybrid electric vehicle.
- Likelihood to purchase an all-electric vehicle or plug-in hybrid electric vehicle is highest among those who identify as techies, innovators, oil concerned, environmentally concerned, air quality concerned, active lifestyle, alternative transportation seekers, as well as those who own or are likely to purchase a Solar PV system.

## Future Work

Drive Electric Vermont marketing efforts should be tailored to the demographic and psychographic groups identified through this survey, in particular:

- For households with an annual income greater than \$50,000, the messaging should address the range of all-electric and plug-in hybrid

electric vehicles, as well as the growing network of public charging stations in Vermont and New England.

- For Vermonters under 35 and those with a household income less than \$50,000, marketing should highlight affordable lease options available for EV models, and long-term fuel savings achieved through EV use.
- For all Vermonters, future marketing should address the high level of performance of EVs in winter and rural driving conditions.

In addition, the survey results indicate potential areas of partnership for future efforts, including collaboration with solar companies, and with entities in the athletic and outdoors industries, such as outdoor gear and apparel businesses, resorts and other Vermont destinations for active living enthusiasts.

The Drive Electric Vermont marketing plan will be informed by this work in developing future programs to promote transformation of the car buying market with higher shares of electric vehicle purchases. In addition, the survey has provided critical information on attitudes and awareness of electric vehicles to representatives of state government, the electric utility industry and non-governmental organizations with an interest in energy efficiency programs.

# **Appendix**

## **Key Survey Questions and Responses**



# Electric Vehicle Awareness, Preference & Usage Study

June 17, 2014

## Study Objectives

Drive Electric Vermont conducted primary quantitative research to establish baseline attitude, awareness, and preference metrics for electric vehicles among residents of Vermont. The specific objectives of this research are to better understand the following:

- Barriers and motivators related to the purchase of electric vehicles
- Level of awareness of electric as an alternative fuel source for vehicles, as well as awareness of electric vehicle types
- Level of knowledge surrounding electric vehicles
- Where consumers seek out information about electric vehicles
- The likelihood to consider purchasing electric vehicles
- Awareness of Drive Electric Vermont

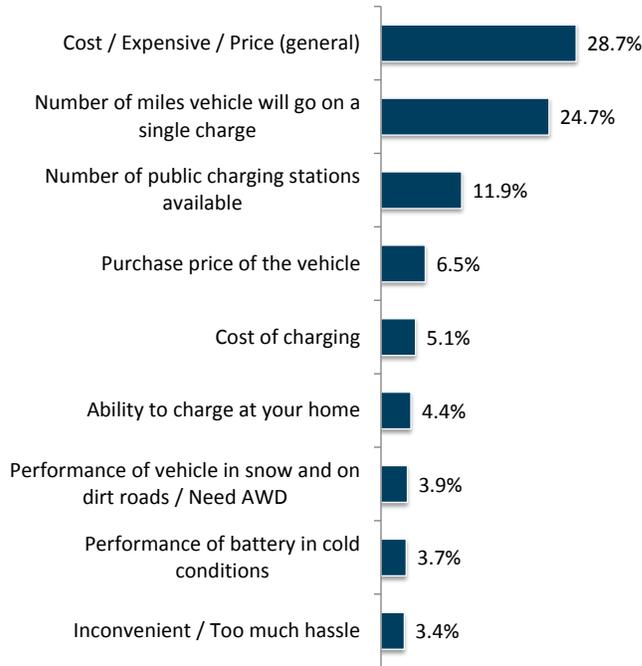
## Study Methodology

- An online survey was conducted between April 3 and April 13, 2014 with survey panel participants.
- Qualified respondents were residents of the state of Vermont and age 18 or above.
- A total of 495 respondents completed the survey.
- The error margin associated with a sample of 495 respondents is +/- 4.4% at the 95% confidence level.
- Survey response data were weighted by age/gender segment to match the proportions reported by the U.S. Census Bureau (2010 Census).

## Barriers & Motivators

# Barriers to Considering an Electric Vehicle

Q29. What is the primary reason you might not consider one of these vehicles for your next vehicle purchase or lease? (combined mention) (n=495)



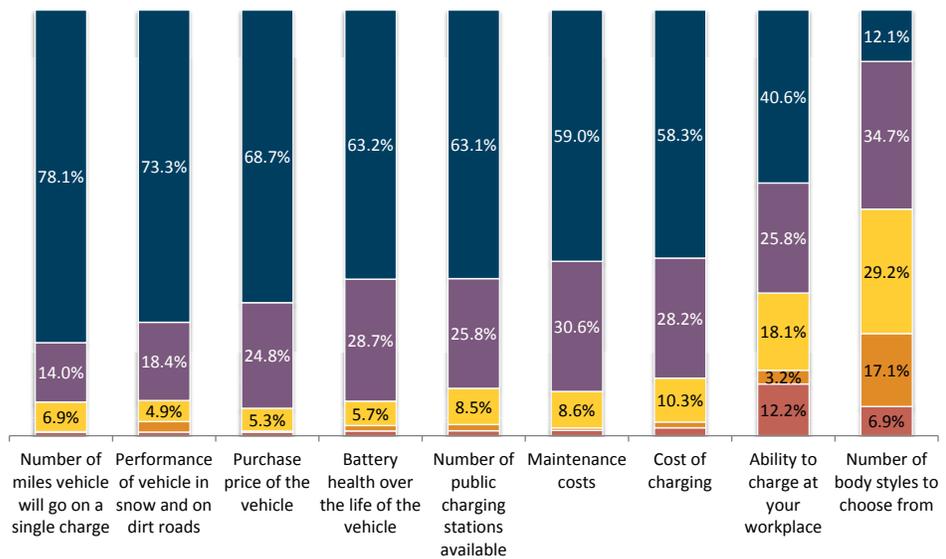
In looking at responses by demographic and household characteristics, cost is the most mentioned barrier by those ages 18-34, those making less than \$50,000 annually, and those who rent their residence; while the range of miles the vehicle can go on a single charge is the most mentioned by those ages 35 or higher, those making \$50,000 annually or more, and those who own their residence.

\*Responses with less than 3% are not shown

# Barriers to Purchasing an Electric Vehicle

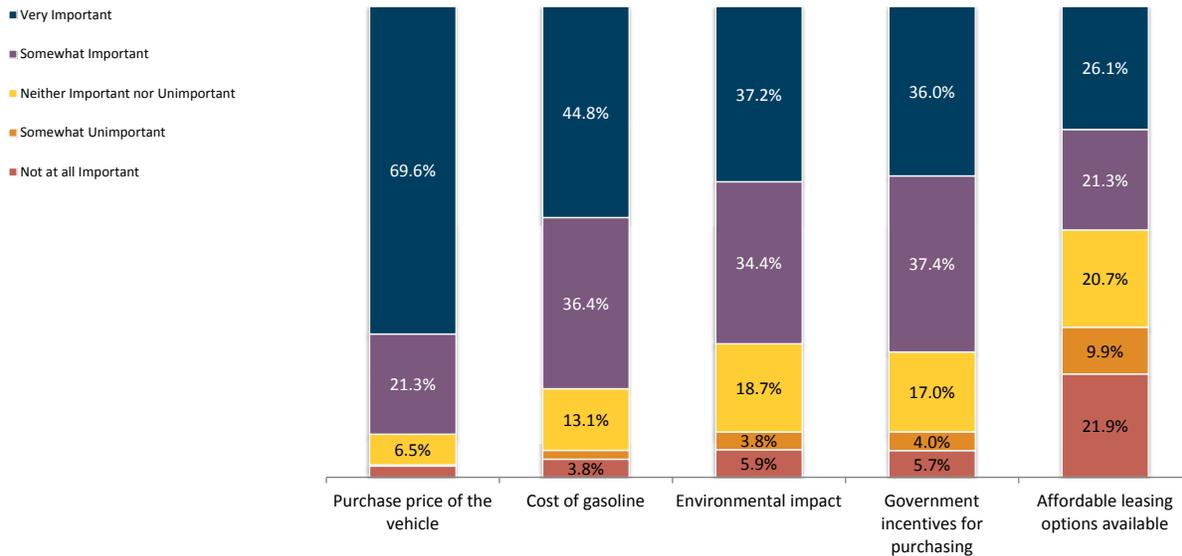
Q32. Please rate the importance of each of the following potential barriers in your decision to purchase an electric vehicle. (n=495)

- Very Important
- Somewhat Important
- Neither Important nor Unimportant
- Somewhat Unimportant
- Not at all Important



# Motivators to Purchase an Electric Vehicle

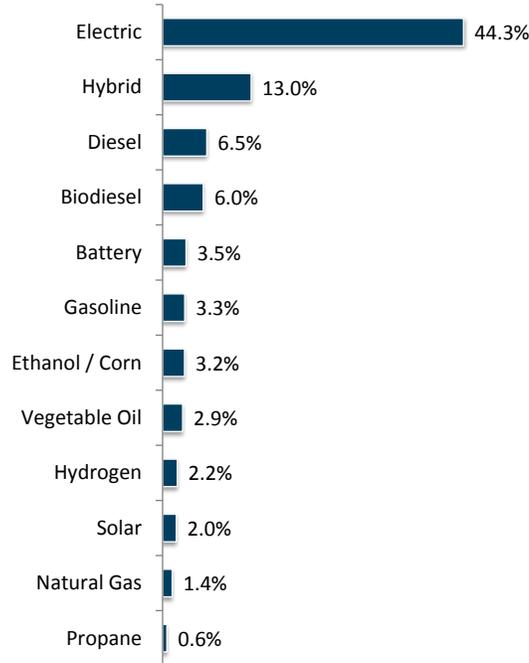
Q34. Please rate the importance of each of these criteria in terms of your motivation to purchase an electric vehicle. (n=495)



# Awareness of Alternative Fuel Options

# Top-of-Mind Awareness of Alternative Fuel Options

Q16. When you think of alternative fuel options for vehicles, what is the first option that comes to mind?  
(one mention)  
(n=495)



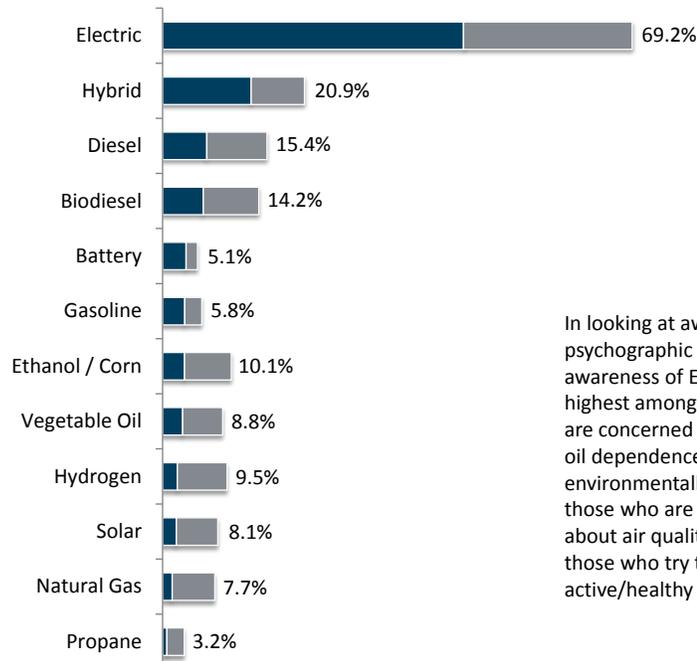
Awareness of Electric is highest among females, those ages 35 or higher, those with at least some college, those living in single family houses, those living in suburban and rural environments, and those with household incomes greater than \$25,000 annually.

\*Responses with less than 3% combined mention in Q16/Q17 are not shown

# Total Unaided Awareness of Alternative Fuel Options

Q16. When you think of alternative fuel options for vehicles, what is the first option that comes to mind?  
Q17. Please list any other alternative fuel options for vehicles that come to mind.  
(combined mention)  
(n=495)

■ Q16 first mention  
■ Q17 combined mention

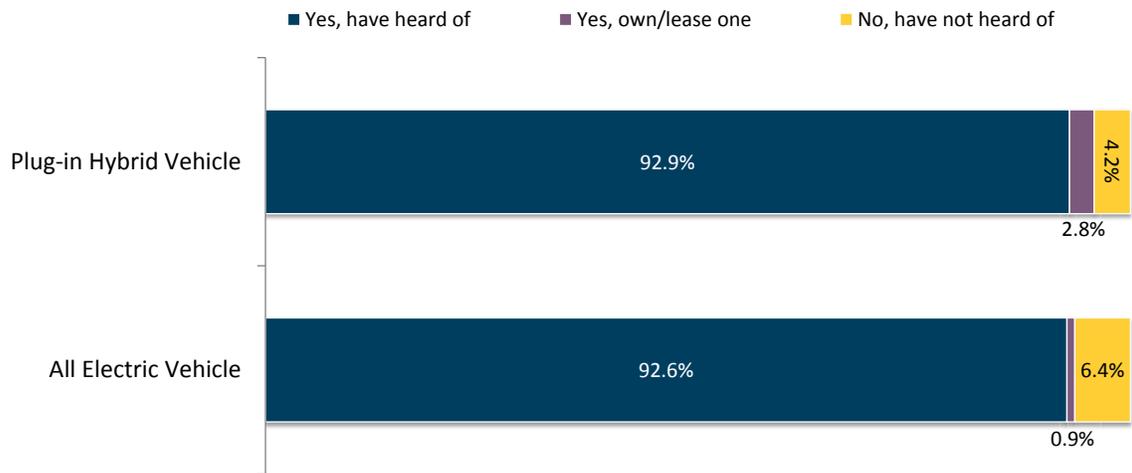


In looking at awareness by psychographic measures, awareness of Electric is highest among those who are concerned about foreign oil dependence, the environmentally minded, those who are concerned about air quality, as well as those who try to live an active/healthy lifestyle.

\*Responses with less than 3% are not shown

# Awareness of Electric Vehicles

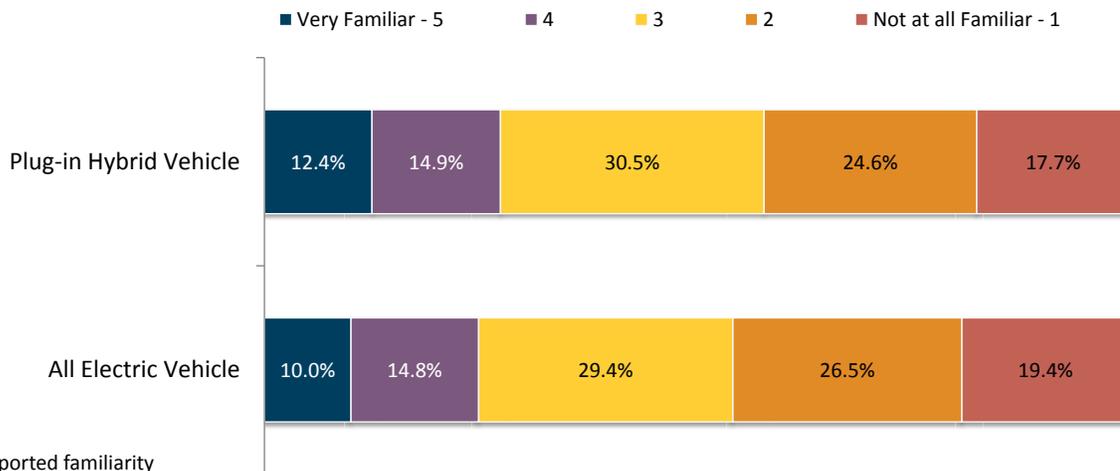
Q18. Have you ever heard of OR do you own or lease one of the following types of vehicles?  
(n=495)



# Knowledge of Electric Vehicles

# Familiarity with Electric Vehicles

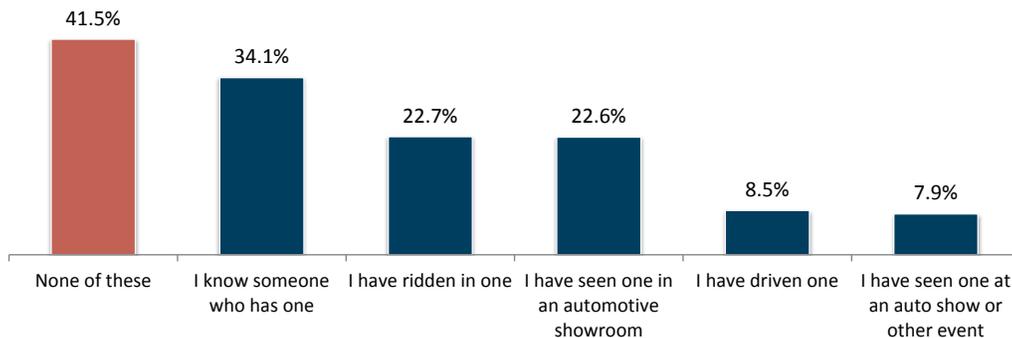
Q60. How familiar are you with each of the following types of vehicles?  
(n=447; 456)



Self-reported familiarity is highest among males, those ages 18-34, and those living in an urban environment.

# Experience with Electric Vehicles

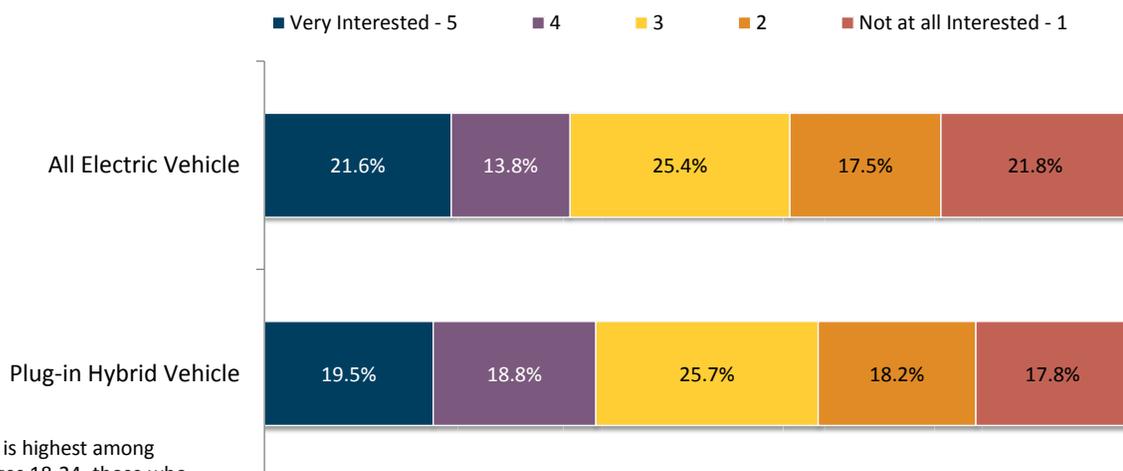
Q31. Which of the following are true of your experience with All Electric or Plug-in Hybrid Vehicles? (mark all that apply)  
(n=495)



## Sources of Information on Electric Vehicles

## Interest in Learning More About Electric Vehicles

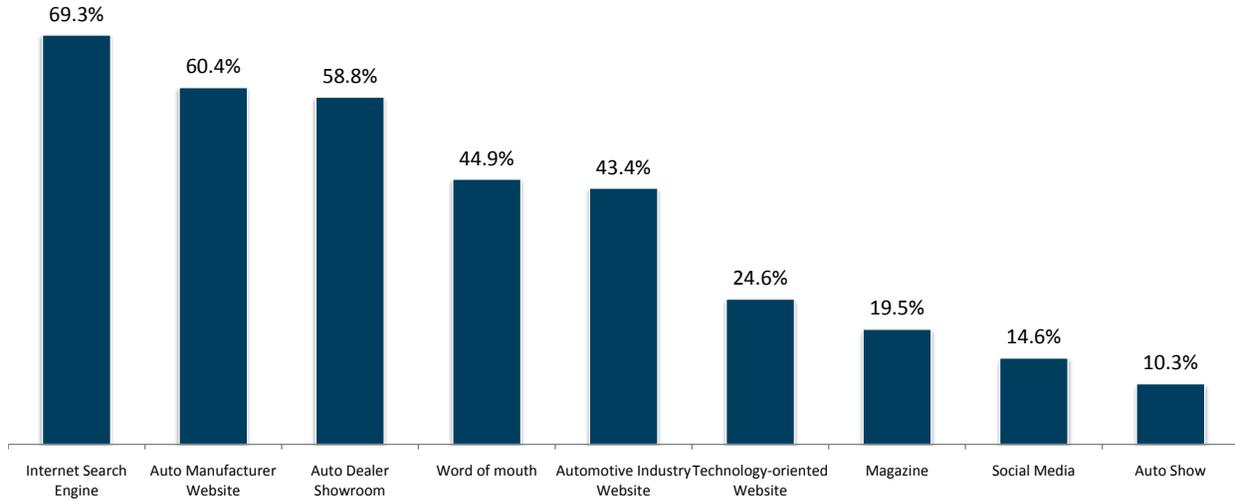
Q20. What is your level of interest in learning more about the following types of vehicles?  
(n=495)



Interest is highest among those ages 18-24, those who rent, those who live in an urban environment, and those who make less than \$25,000 annually.

# Sources of Information about Electric Vehicles

Q35. If you were considering purchasing or leasing an electric vehicle, where would you seek information? (mark all that apply) (n=495)



# Likelihood to Purchase Electric Vehicles

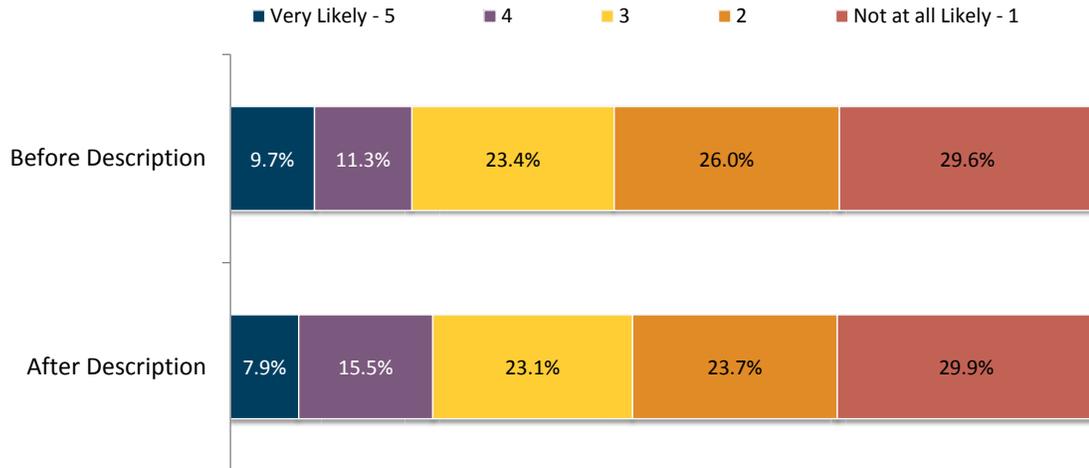
# Likelihood to Purchase an All Electric Vehicle

Q21/Q25. What is the likelihood that you would consider each of the following technologies for your next vehicle purchase or lease?  
All Electric Vehicle

(n=495)

Likelihood to Purchase asked before and after being presented with the following description:

**All Electric Vehicle (AEV):** A vehicle powered solely by electricity that is recharged by plugging into an electric power source, like a household outlet. Various models, such as the Nissan LEAF and Ford Focus Electric, provide about 75 miles of range before needing to recharge. Prices start at \$25,000 with lease options available for \$200/month or less with a \$2,000 down payment.



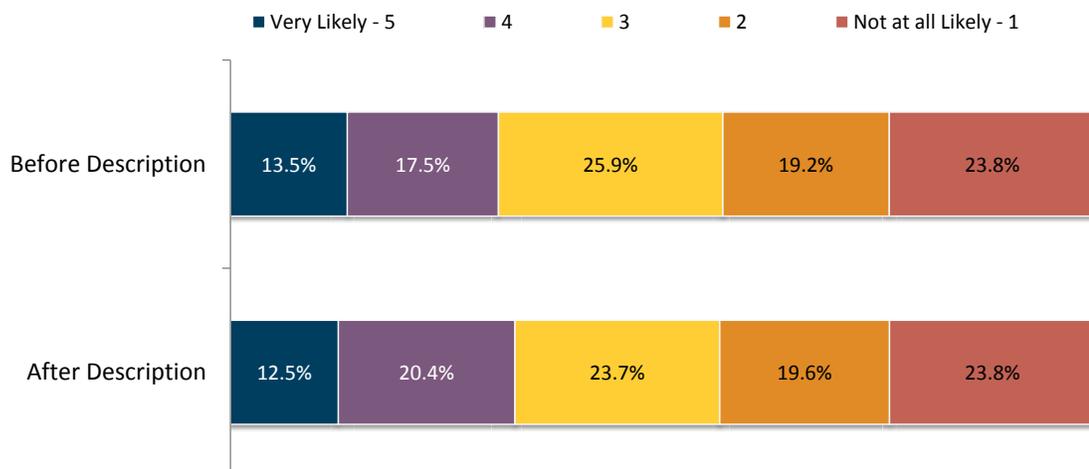
# Likelihood to Purchase a Plug-in Hybrid Vehicle

Q21/Q25. What is the likelihood that you would consider each of the following technologies for your next vehicle purchase or lease?  
Plug-in Hybrid Vehicle

(n=495)

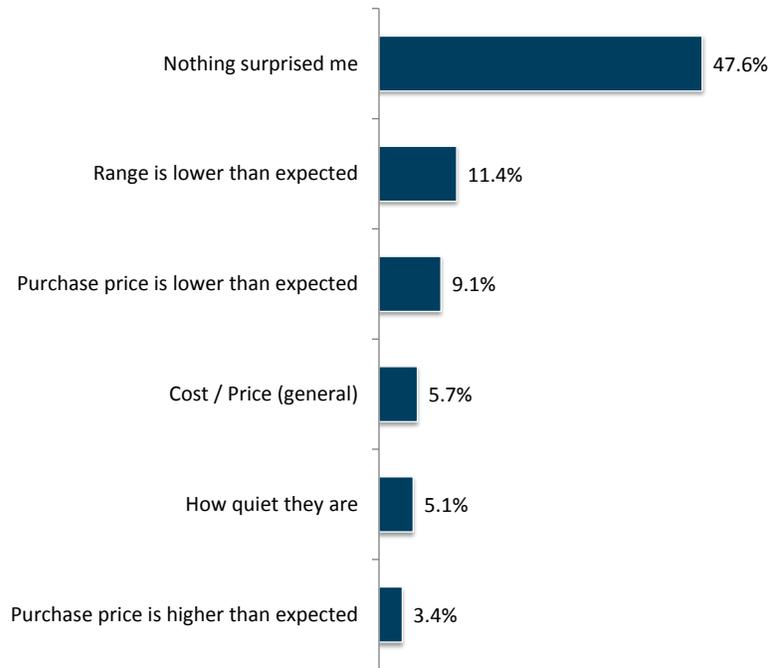
Likelihood to Purchase asked before and after being presented with the following description:

**Plug-in Hybrid Vehicle (PHEV):** A vehicle powered by gasoline, as well as electricity that is stored in its battery. The vehicle can be charged by plugging into an electric power source, like a household outlet. The Chevrolet Volt and Ford C-Max Energi are examples of currently available PHEV models with 10-40 miles of electric range before gasoline is used to power the vehicle or charging is needed. Prices start at \$30,000 with lease options available for \$250/month or less with a \$2,500 down payment.



## Reaction to EV Descriptions

Q33. Thinking again about the descriptions of these two types of vehicles what, if anything, surprised you?  
(one mention)  
(n=495)



\*Responses with less than 3% are not shown

## Awareness of Drive Electric Vermont

# Aided Awareness of Drive Electric Vermont

Q38. Have you ever heard of Drive Electric Vermont?  
(n=495)

