

# Drive Electric Vermont 2016 Survey of Electric Vehicle Awareness & Interest

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## **Executive Summary**

With support from the John Merck Foundation, Drive Electric Vermont conducted a statistically valid survey of Vermonters to determine attitudes and knowledge of plug-in electric vehicles (EVs) in spring 2016. The survey results revealed most Vermonters were aware of EVs. Over a quarter of respondents reported they were 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. Comparisons were made with a similar survey conducted in 2014 to gauge changes in awareness and purchase consideration over time.

These results are informing Drive Electric Vermont's marketing program 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://www.DriveElectricVT.com>) is a statewide coalition of policy makers, industry leaders and citizens dedicated to promoting awareness and adoption of electric transportation in Vermont. The Vermont Energy Investment Corporation (VEIC) is the lead organizer for the program, which serves as a primary resource for Vermonters interested in plug-in electric vehicles (EVs).

VEIC completed a statistically valid consumer survey in 2016 to examine EV attitudes, awareness, and preference metrics to inform targeting and messaging of marketing programs. This research used many questions from an earlier survey completed in 2014 to examine differences in EV awareness over time.

Vermont is a national leader in the adoption of electric vehicles and this market research information is critical to understanding the factors influencing EV consumers. The data obtained from this survey is used by DEV to refine messaging and means of communicating with key Vermont actors and market sectors about EVs. This targeting enables more efficient use of marketing resources by identifying receptive markets and messaging that will 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;
5. Potential influence of incentive programs and incentive delivery options;
6. Trends in EV attitudes and awareness over time; and
7. Awareness of Drive Electric Vermont.

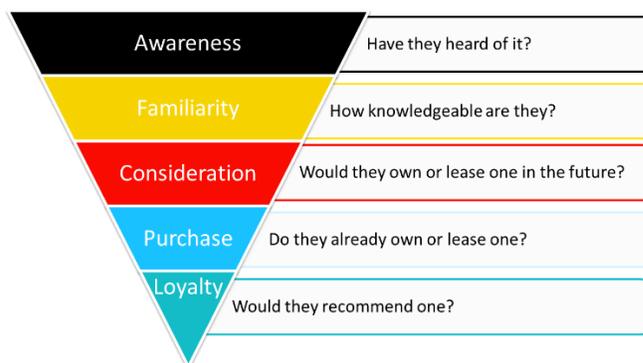
## Survey Design

VEIC conducted an online survey through a Qualtrics panel between April 29 and May 11, 2016. Qualified respondents were residents of the state of Vermont and age 18 or above. A total of 405 respondents completed the 10 minute survey. Response quotas were used on age and gender to match US Census data for Vermont. At a 95% confidence level, the margin of error associated with our results is  $\pm 4.9\%$ .

The quality of survey responses was ensured through attention filter questions, question validation, and a time check to ensure responses were not completed too quickly for thoughtful reactions.

Survey questions were designed to move respondents through the purchase decision funnel illustrated below, starting from general awareness to increasingly greater knowledge and purchase consideration of EVs options.

Figure 1. The Purchase Decision Funnel



## Survey Results

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

- 99% of respondents reported general awareness of EVs, with 24% indicating a high level of familiarity with all electric and/or plug-in hybrid vehicles.
- Roughly 1 in 3 respondents expressed interest in learning more about EVs, typically through internet searches, automaker websites and dealer showrooms.
- Age impacted interest in learning more about EVs, with respondents in the 25-34 year old bracket expressing the highest interest.
- Vehicle cost was the primary barrier to EV purchase, mentioned twice as often as any other factor. Vehicle range on a single charge and availability of charging stations rounded out the top 3 barriers.
- Performance in snow and on dirt roads was a top ranked barrier for 35% of respondents.
- Top motivating factors were considerations of environmental impact, the price of gasoline and the vehicle purchase price.
- Approximately 20% of respondents reported they were likely to consider owning an EV.

- Incentives increased the likelihood to purchase an EV, ultimately reaching 41% of respondents at an incentive amount of \$2,500 – more than doubling from the baseline likelihood of 20%.
- Instant rebates were the most preferred means of delivering incentives, but higher incentive amounts for mail-in rebates or tax credits were favored over this convenience.
- Vermonters' attitudes, awareness, and knowledge of electric vehicles and Drive Electric Vermont were largely unchanged from 2014.
- Vermonters' direct experiences with EVs continues to be very limited.

## **Future Work**

Drive Electric Vermont will continue addressing the key barriers and motivators identified in the survey including raising awareness of affordable EV options and supporting incentives and other programs which reduce cost - the primary barrier to EV ownership.

Ensuring all Vermonters have access to EV charging opportunities will help address a fundamental issue which was also cited as a top barrier for 15% of respondents, 36% of whom reported their overnight parking was more than 20 feet away from an electrical outlet.

Growing availability of more affordable all electric and plug-in hybrid vehicles with greater electric range is anticipated to serve as a catalyst in sustained EV market growth in Vermont. Direct experiences with EVs in Vermont communities will increase rapidly as adoption continues to increase at a 30% annual rate.

The survey has provided critical information on attitudes and awareness of EVs to representatives of state government, the electric utility industry and non-governmental organizations with an interest in advancing EV incentives and other policies supporting transportation efficiency in Vermont.

# **Appendix**

## **Key Survey Questions and Responses**

# Electric Vehicle Awareness & Interest - 2016 Survey Results

June 2016



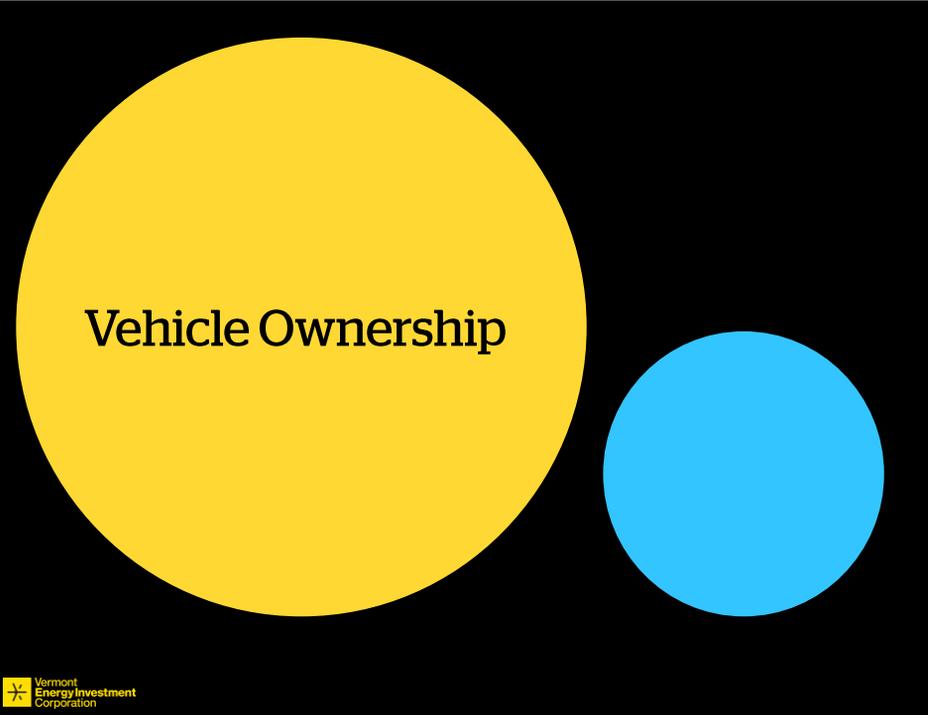
## Objectives

1. Measure Vermont residential customers' attitudes, awareness, familiarity and likelihood to purchase an all-electric or plug-in electric vehicle.
2. Identify any shifts in the barriers and motivators surrounding the likelihood to purchase EVs – and who is most likely to purchase an EV.
3. Test EV incentive price levels' effect on likelihood to purchase.
4. Measure awareness of Drive Electric Vermont.



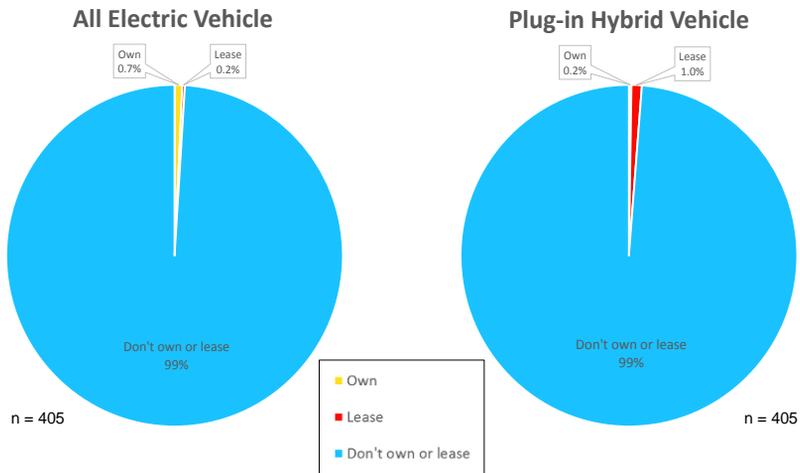
## Methodology

- 10-minute online survey
  - April 29<sup>th</sup> – May 11<sup>th</sup>
- 405 completed responses
  - Error Margin (95% CI): +/- 4.87%
- Random sample
  - Vermont residents; 18 years or older
  - Quotas on age and gender to match Vermont census data



Vehicle Ownership

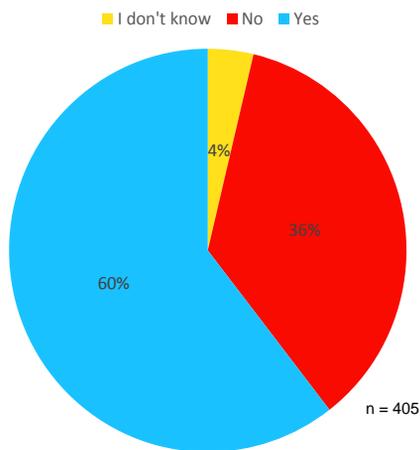
## Less than 2% of respondents own or lease an EV.



Q. Do you currently own or lease the following types of vehicles?

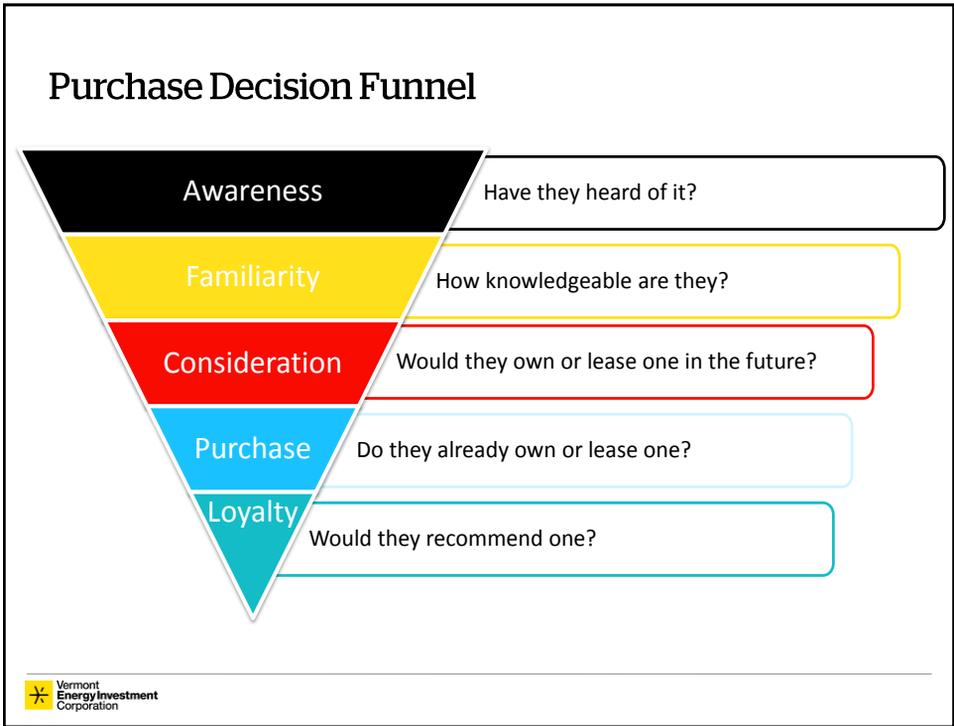
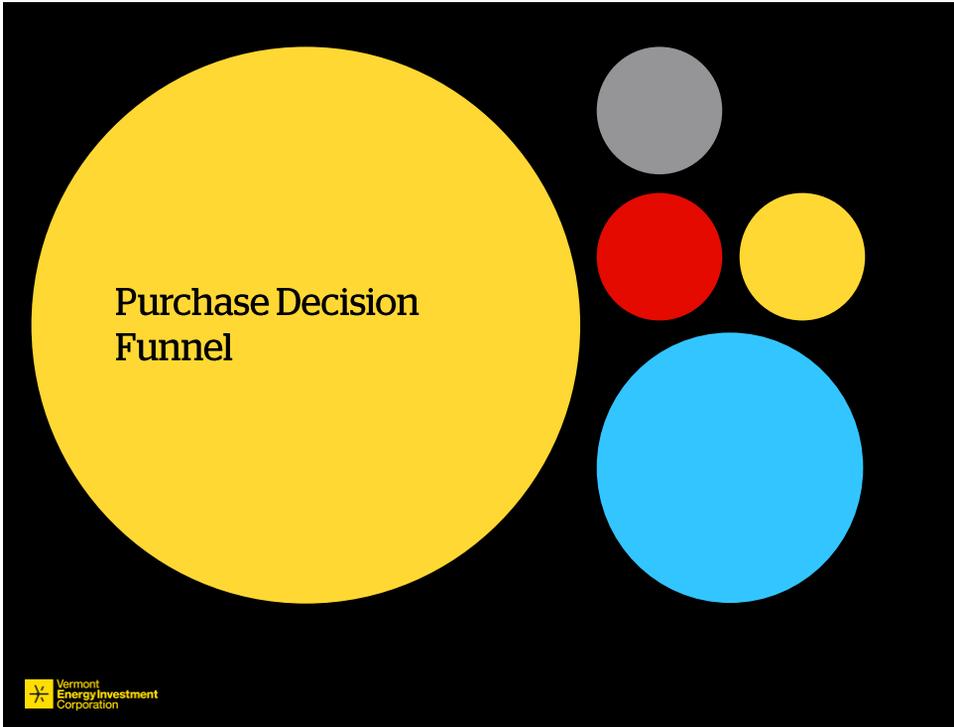


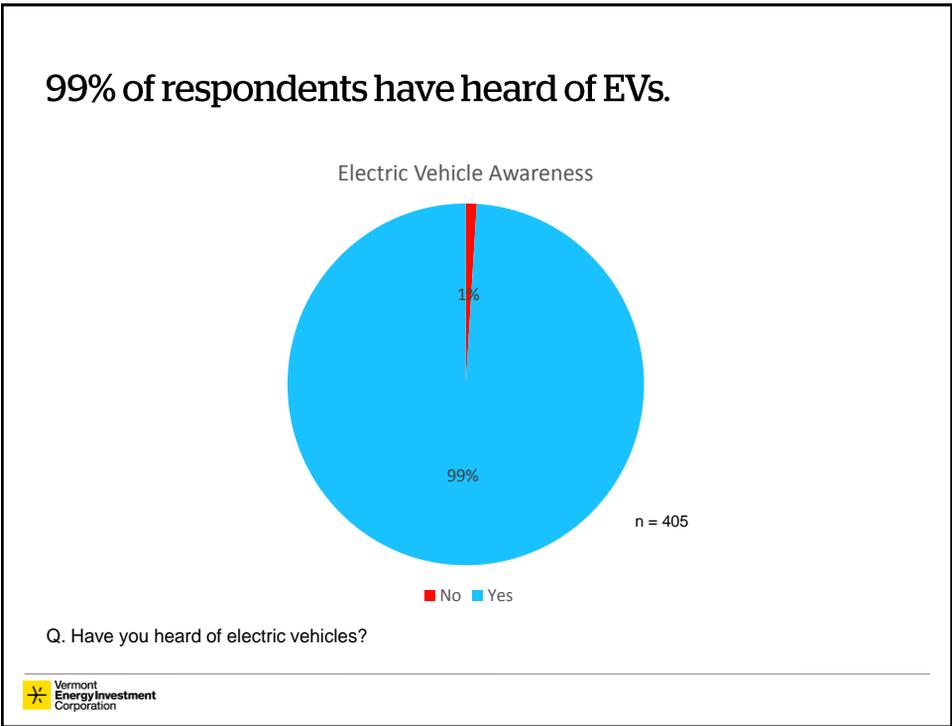
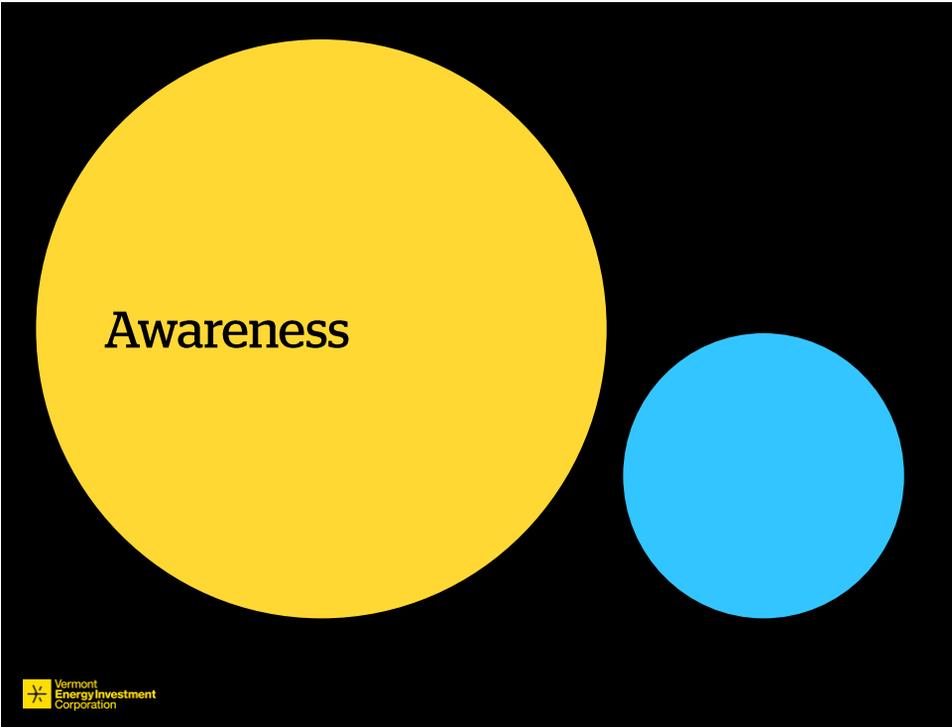
## 60% of respondents regularly park overnight within 20 feet of a standard electrical outlet.



Q. Do you or any members of your household regularly park a car overnight within 20 feet of a standard electrical outlet, such as an outlet in a garage, porch or other exterior area near parking?

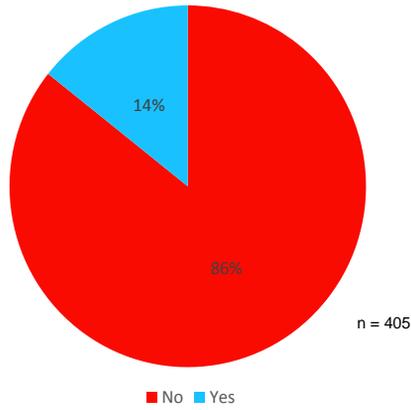




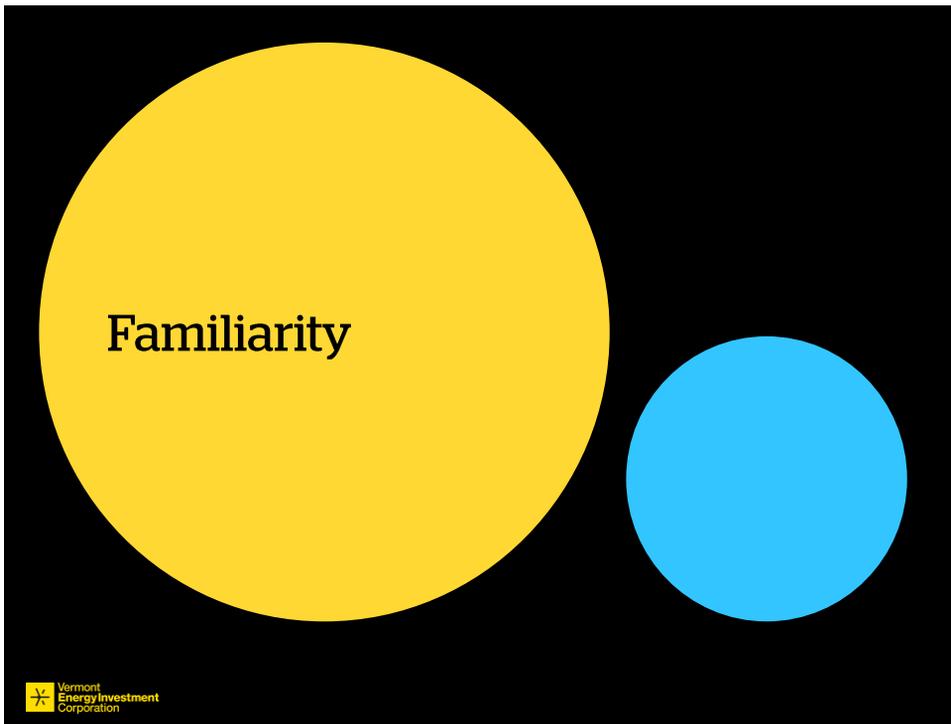


14% of respondents have heard of Drive Electric Vermont.

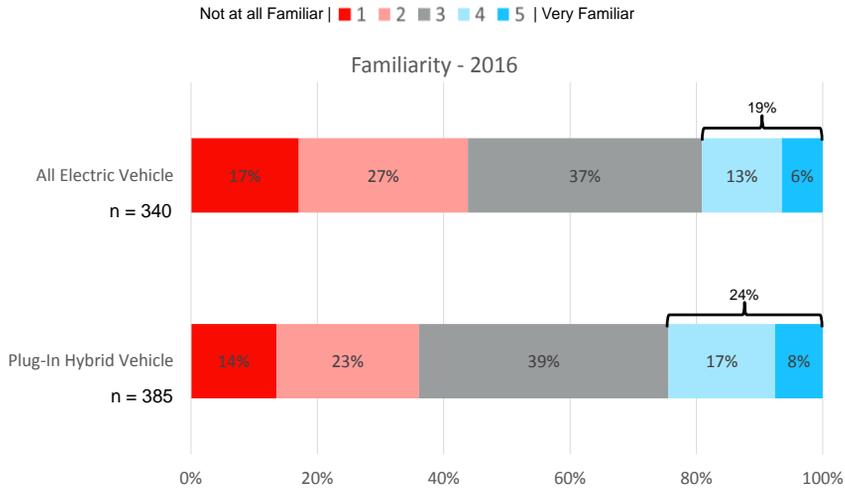
Drive Electric Vermont Awareness



Q. Have you ever heard of Drive Electric Vermont?



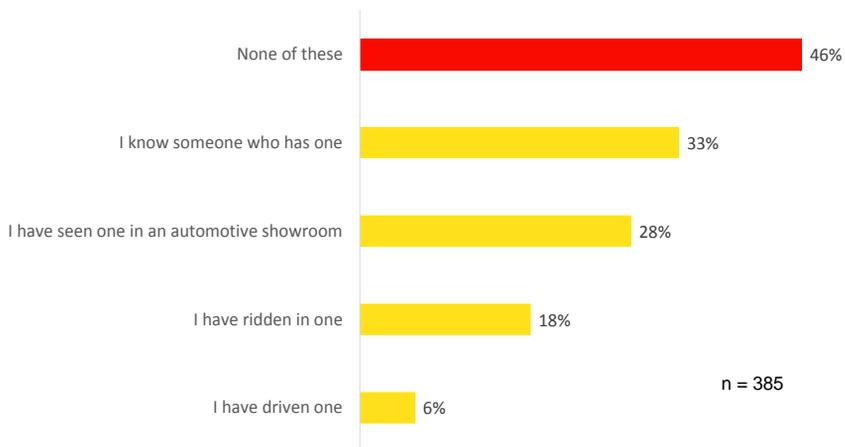
## 24% of respondents are familiar with EVs.



Q. How familiar are you with each of the following types of vehicles?

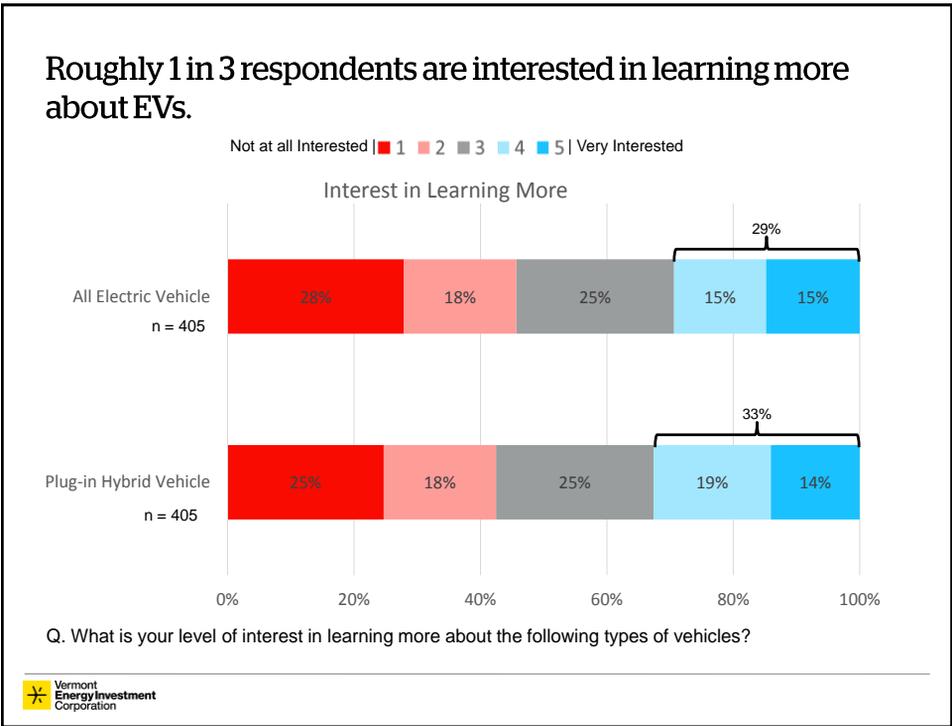
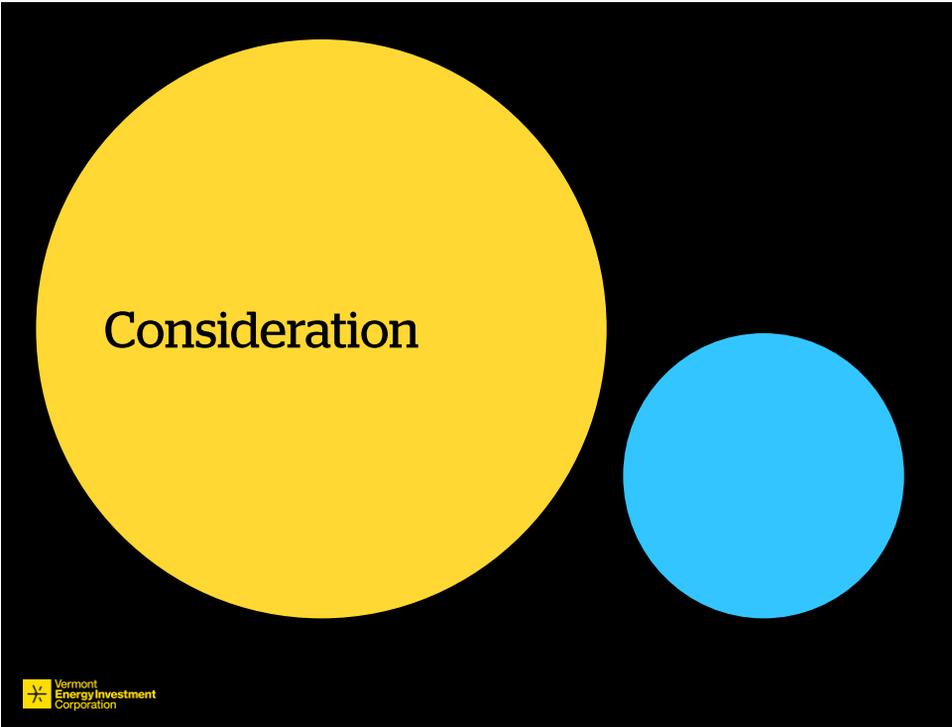


## Nearly half of respondents have never had a direct experience with an EV.

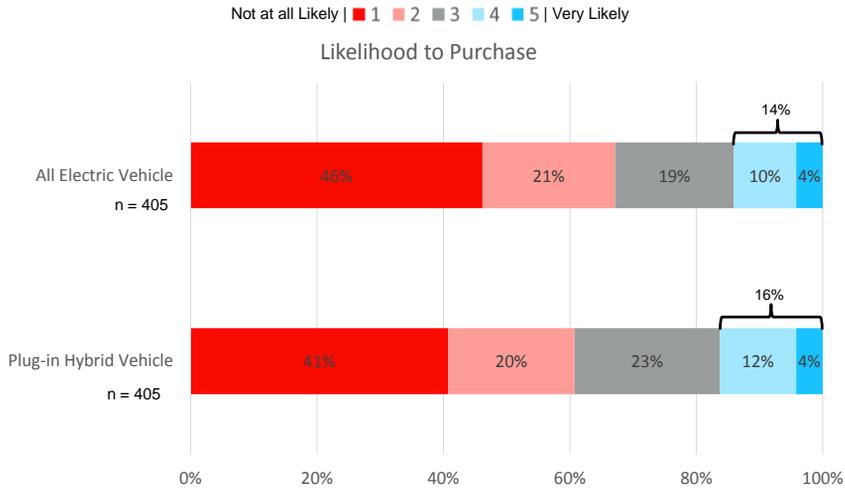


Q. Which of the following are true of your experience with electric vehicles (all electric or plug-in hybrid)?  
[Multiple Mention]





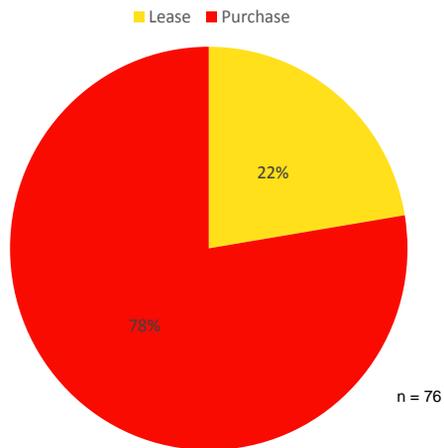
## 19% of respondents report they're likely to consider owning an EV.



Q. What is the likelihood that you would consider buying or leasing one of the following types of vehicles?



## 78% of respondents who said they're likely to have an EV in the future said they'd purchase as opposed to lease.



Q. Are you more likely to purchase or lease an electric vehicle?

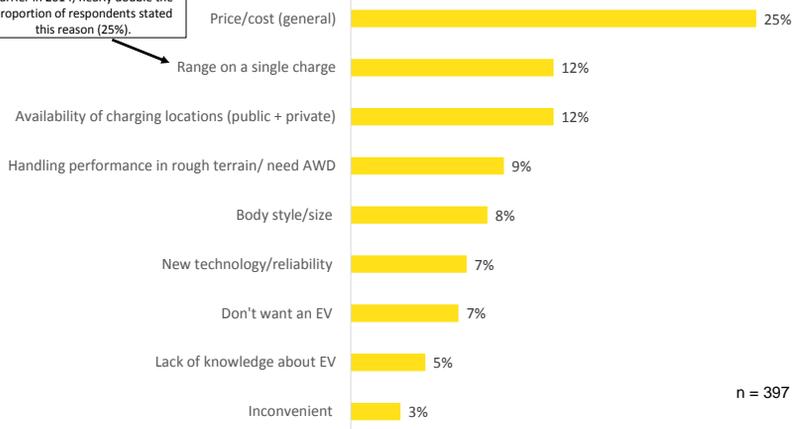


# Barriers & Motivators



## Respondents mentioned price as a barrier more than twice as often as any other barrier.

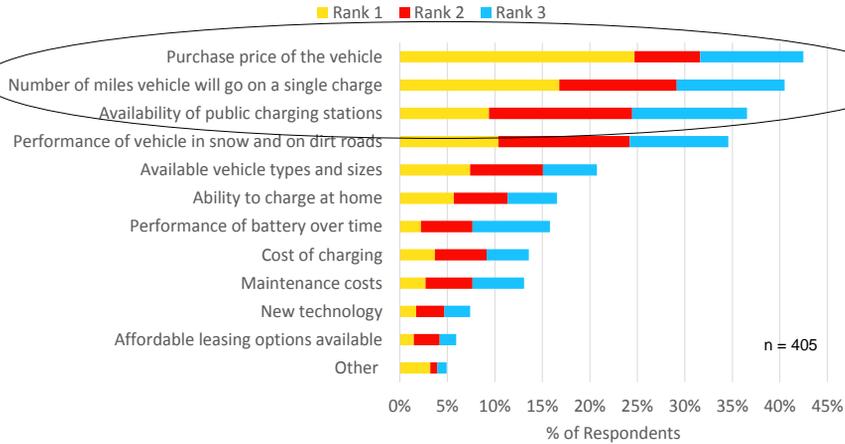
While still the 2<sup>nd</sup> most common barrier in 2014, nearly double the proportion of respondents stated this reason (25%).



Q. What, if anything, prevents you from buying an electric vehicle (all electric or plug-in hybrid)?  
[Multiple Mention]



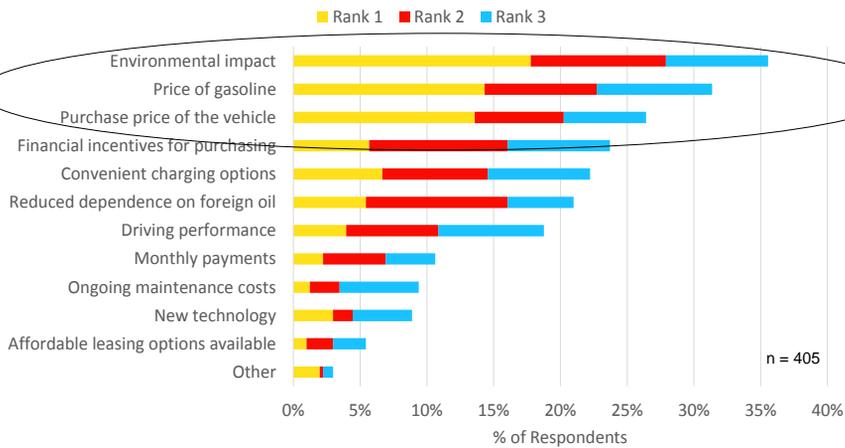
**Price, vehicle range, and availability of charging locations are the most frequently cited aided purchase barriers.**



Q. Please rank with 1 being the biggest barrier, up to three factors that are preventing you from purchasing or leasing electric vehicle (all electric or plug-in hybrid) as your next vehicle purchase.

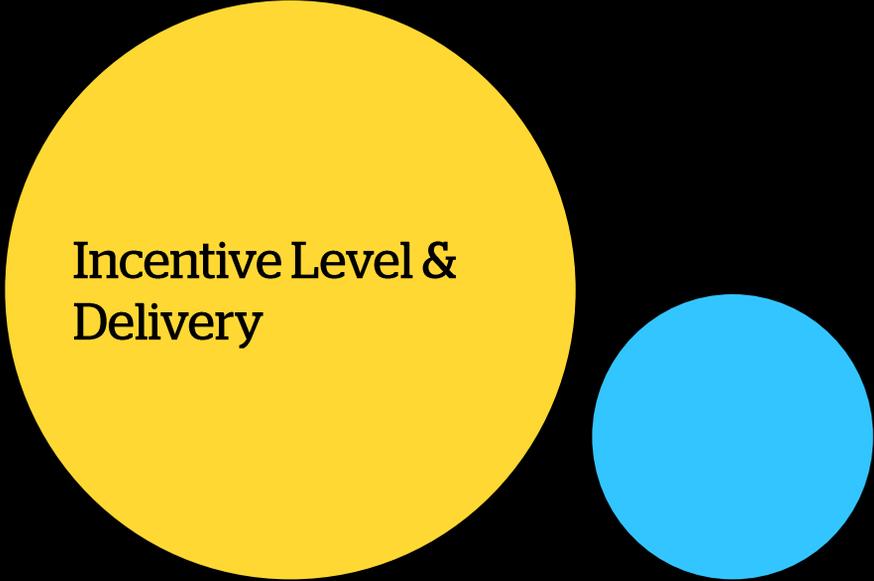


**Environmental impact, price of gasoline, and purchase price are the most frequently cited motivators.**



Q. Please rank, with 1 being the biggest motivator, up to three factor that would motivate you to consider purchasing or leasing an electric vehicle ( all electric or plug-in hybrid).





## Incentive Level & Delivery

How does the incentive amount affect  
respondents' likelihood to purchase or lease?

## Vehicle Descriptions

“There are two types of electric vehicles:

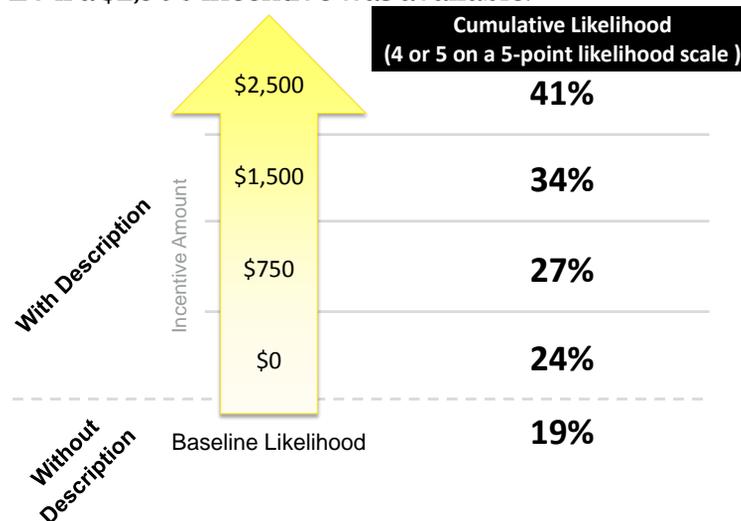
**All Electric Vehicle:** *A vehicle powered solely by electricity that is recharged by plugging into an electric power source, like a household outlet. Various models, such as the Nissan LEAF and Chevrolet Bolt, provide 100-200 miles of range before needing to recharge.*

**Plug-in Hybrid Vehicle:** *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. Various models, such as the Chevrolet Volt and Ford C-Max Energi, are available with 15-60 miles of electric range before gasoline is used to power the vehicle or charging is needed, providing a total range of over 400 miles.”*

Both of these options are available for monthly payments of roughly \$250.



41% of respondents would be likely to purchase or lease an EV if a \$2,500 incentive was available.



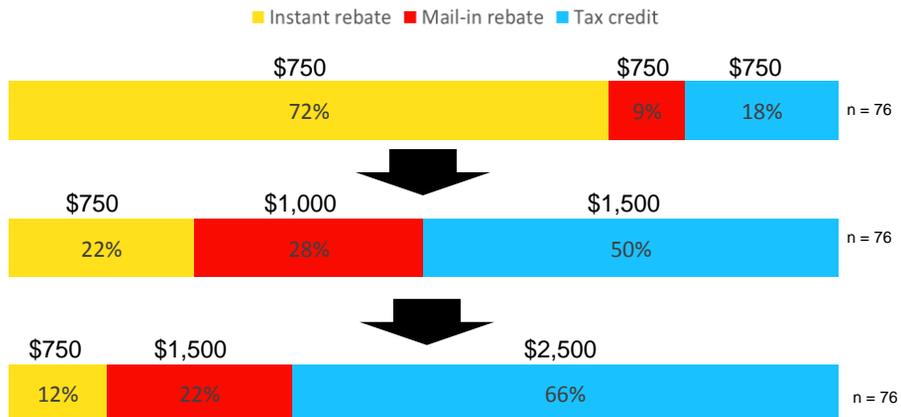
Q. At this price point, what is the likelihood you would get an electric vehicle?



## What incentive delivery mechanism do respondents most prefer?



Instant rebates are preferred when the incentive amounts are equal; however, respondents value a higher incentive more than the convenience of an instant rebate.



Q. Assume you're leasing or buying a new electric vehicle (plug-in hybrid or all electric vehicle). Which of the following would you prefer?



# Key Takeaways



## Key Takeaways

1. Vermonters' awareness of EVs remains high
2. Direct experience with EVs continues to be limited
3. Current likelihood to purchase is largely unchanged at about 20% of the population
4. Higher incentives designed to offset the purchase price of the vehicle may help spur adoption of EVs in Vermont

