# NYSERDA Drive Clean Rebate Adoption Survey: 2020 Results

Final Report | Report Number 21-33 | September 2021

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Advance clean energy innovation and investments to combat climate change, improving the health, resiliency, and prosperity of New Yorkers and delivering benefits equitably to all.

# NYSERDA Drive Clean Rebate Adoption Survey: 2020 Results

***Final Report***

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# Abstract

This report summarizes results of a survey of rebate recipients who adopted an electric vehicle (EV) while participating in the New York State Energy Research and Development Authority's (NYSERDA) Drive Clean Rebate program in 2020. The program offered point-of-sale rebates on new car purchases and leases for eligible electric cars. Invitations to participate in this "Adoption Survey" were sent via email to a total of 13,038 rebate recipients, resulting in 3,480 complete responses. Survey results are grouped by technology type, i.e., plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs). Results summarize purchasing decisions, the impact of the rebate on purchases, the role of dealers, EV charging access and behaviors, and demographic characteristics of EV adopters.

# Keywords

Electric cars, electric vehicles (EVs), plug-in electric hybrid vehicles (PHEVs), battery electric vehicles (BEVs), all-battery cars, Drive Clean Rebate program, point-of-sale rebates, rebate importance, *Rebate Essentiality*, auto dealers, EV adoption

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# 1 Introduction

NYSERDA's Drive Clean Rebate program provides point-of-sale rebates to consumers who purchase or lease eligible new plug-in hybrid electric vehicles (PHEVs) or battery electric vehicles (BEVs). The program launched in March 2017 and is administered by the Center for Sustainable Energy (CSE). One component of the program is the voluntary "Adoption Survey," which is used to gain insights into electric car adoption decisions, perceptions of program performance and efficacy, and demographic characteristics of participating households. This report summarizes the results of the survey and highlights key trends in the Drive Clean Rebate program.

## 1.1 Survey Administration and Response Rate

The Drive Clean Rebate Adoption Survey is administered on a rolling basis. Program participants receive a survey invitation by email approximately one to three weeks after approval of their rebate. The participants included in this analysis purchased or leased cars between January 1, 2020 and December 31, 2020. A total of 13,038 participants[1] were invited to take the survey and 3,480 (26.7%) responded. The respondents completed the survey between February 4, 2020 and April 24, 2021. Seventy-five respondents were disqualified for one of three reasons: their rebate was for a different car, their car was primarily for commercial use, or they were not the primary driver of the car. After eliminating these responses, a total of 3,405 (26.1%) valid responses remained and were analyzed in this report.

An updated version of the Adoption Survey was released on January 1, 2021. While most survey questions remain unchanged, some questions were edited for clarity or to reflect current best practices for asking demographic questions. Where necessary to differentiate between the two, the versions of the survey will be referred to as the 2020 version and the 2021 version.

## 1.2 Representativeness and Weighting

Since the Adoption Survey is not completed by all Drive Clean Rebate recipients, responses may not be perfectly representative of the entire participant population. To mitigate this issue, response weights were created to compensate for over- or under-representation among groups using application data that is available for all program participants. The dimensions used for weighting were car model, purchase versus lease, and county. Weights were calculated using the raking method.[2] Weighted responses are presented in this report and are representative of applicants who purchased their cars between January 1, 2020 and December 31, 2020.

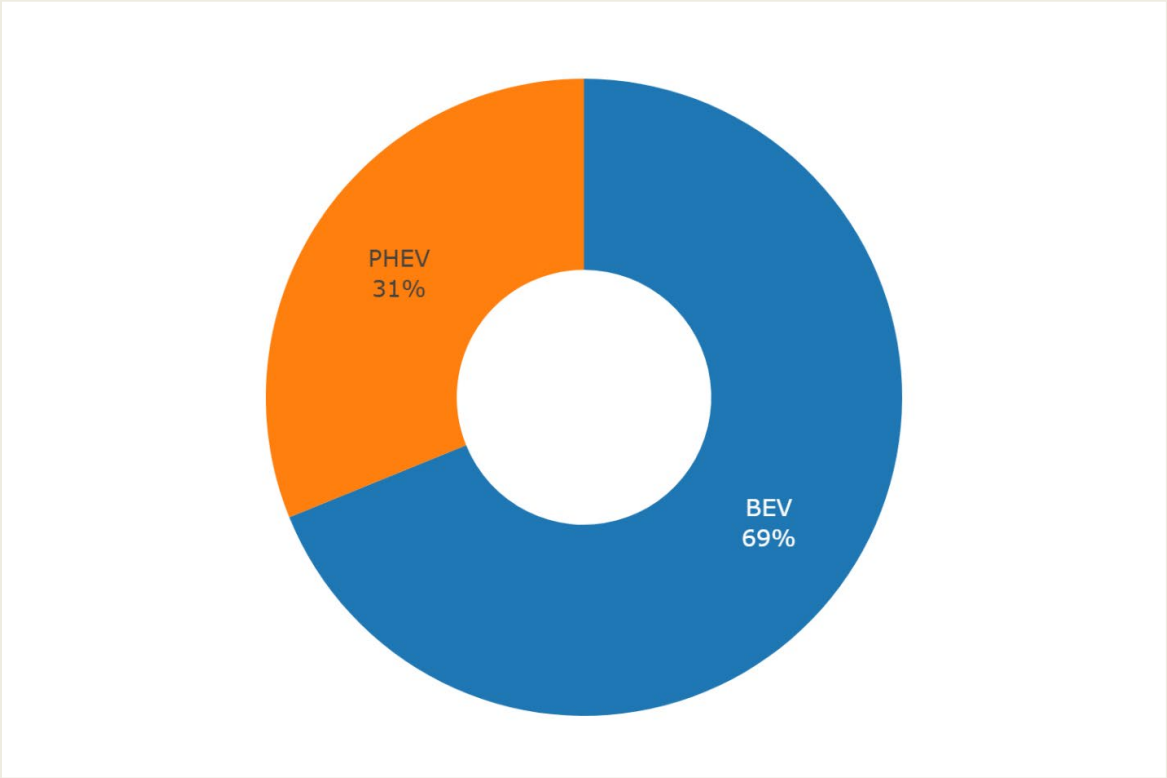
# 2 Results

## 2.1 Technology Types

Roughly a third of the rebates were used to purchase plug-in hybrid electric vehicles (PHEVs), with the remaining two-thirds used for battery electric vehicles (BEVs) (see Figure 1). This represents a continuing shift towards BEVs; in the 2017–2018 and 2018–2019 reports the percentages of BEV drivers were 27% and 45%, respectively.

**Figure 1. Rebates by Technology Type**

*(n=3405)*




## 2.2 Adoption Decisions

Overall, 79% of rebate recipients indicated the vehicle rebated had replaced or would replace another household vehicle, while 13% reported that the car was an addition to the household fleet. Figure 2 shows car replacement by technology type. Those who adopted a PHEV were significantly more likely to replace (or plan to replace) a car in the home than those who adopted a BEV.

**Figure 2. Responses to "Which of the Following Best Describes Your New Electric Car Purchase or Lease?"**

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi^2=35$, $p<0.01$, $n=3385$).*

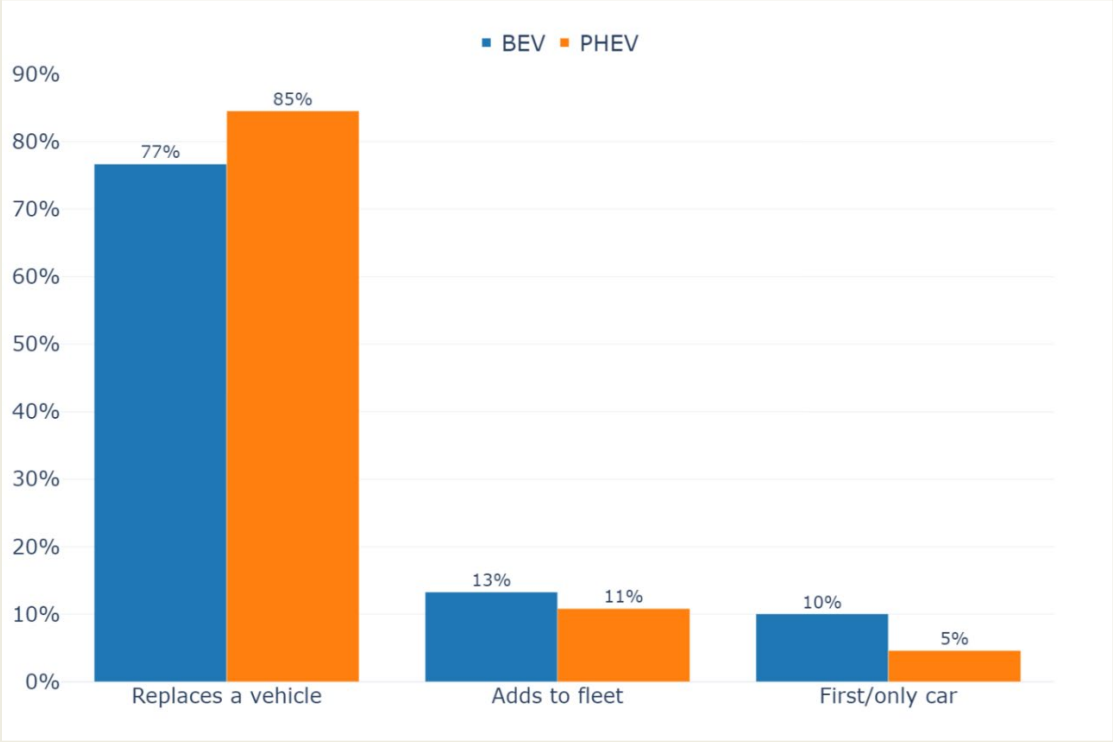
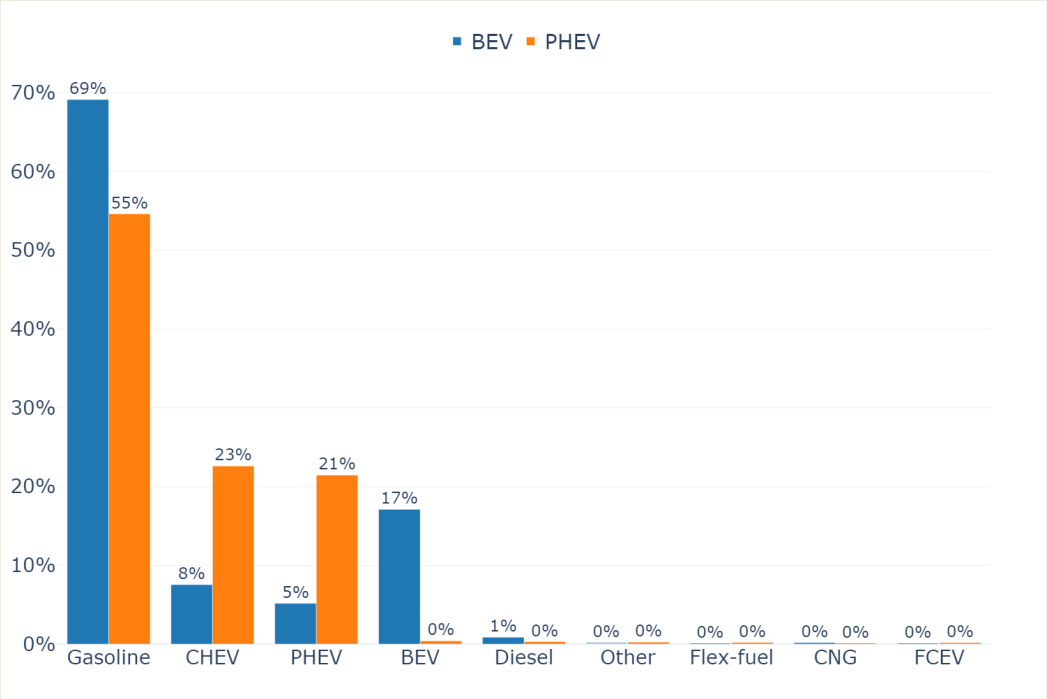



Figure 3 shows that 64% of replaced (or to-be-replaced) cars are conventional gasoline-powered cars, and 13% are conventional hybrids. Nearly 80% of respondents reported that this was the first electric car they had purchased or leased (Figure 4).

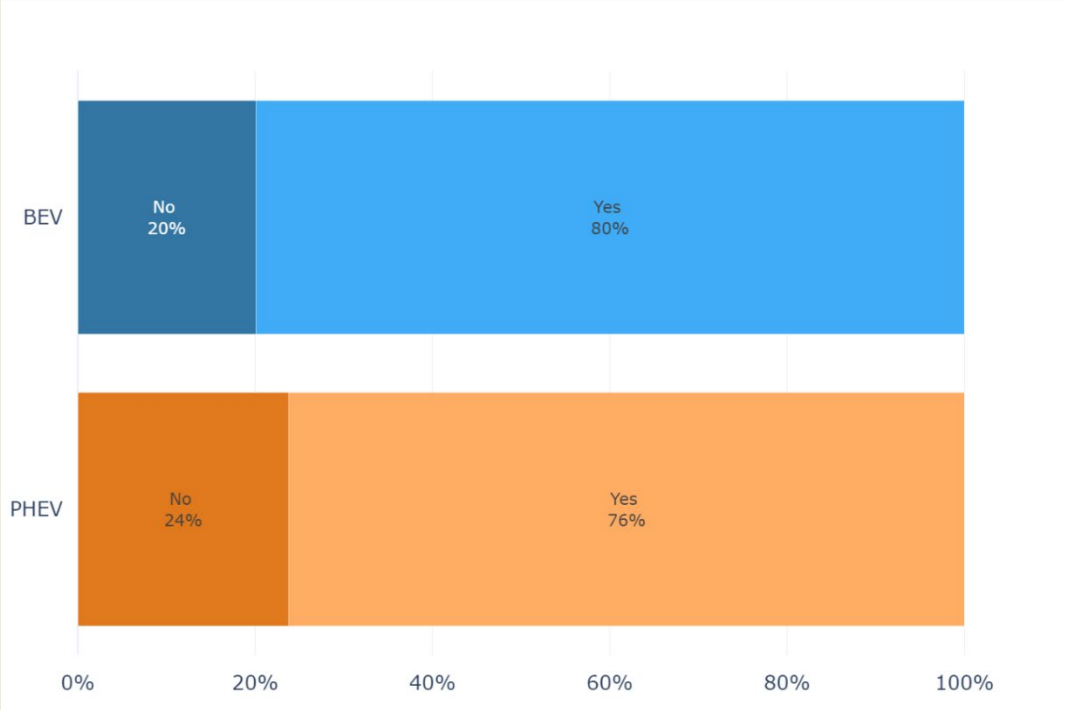
## Figure 3. Technology of Replaced Cars[3]

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=345$, $p<0.01$, $n=2103$).*




## Figure 4. Responses to "Is This the First Electric Car You Have Ever Purchased or Leased?"

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=6$, $p<0.02$, $n=3396$).*



In both the previous and current survey edition, respondents were asked to choose the most important reason they decided to acquire an electric car (Figures 5 and 6). While most options were identical between both survey versions, the 2021 version has two additional options ("Ability to charge at home" and "Ability to charge at work") and had one option removed ("Convenience of charging"). Across all respondents and survey editions, the top reasons were "reducing environmental impacts" (42%), "saving money overall" (14%), and "saving money on fuel costs" (13%). BEV drivers were more likely to select "reducing environmental impacts" or "a desire for the newest technology" than PHEV drivers in both survey editions. PHEV drivers were more likely to indicate "saving money on fuel costs" or "saving money overall" as the most important factor in their decision.

**Figure 5. Responses to "Which of These Factors Was the Most Important Reason Why You Decided to Acquire an Electric car?" in the 2020 Version of the Survey**

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi^2=393$, $p<0.01$, $n=2738$).*

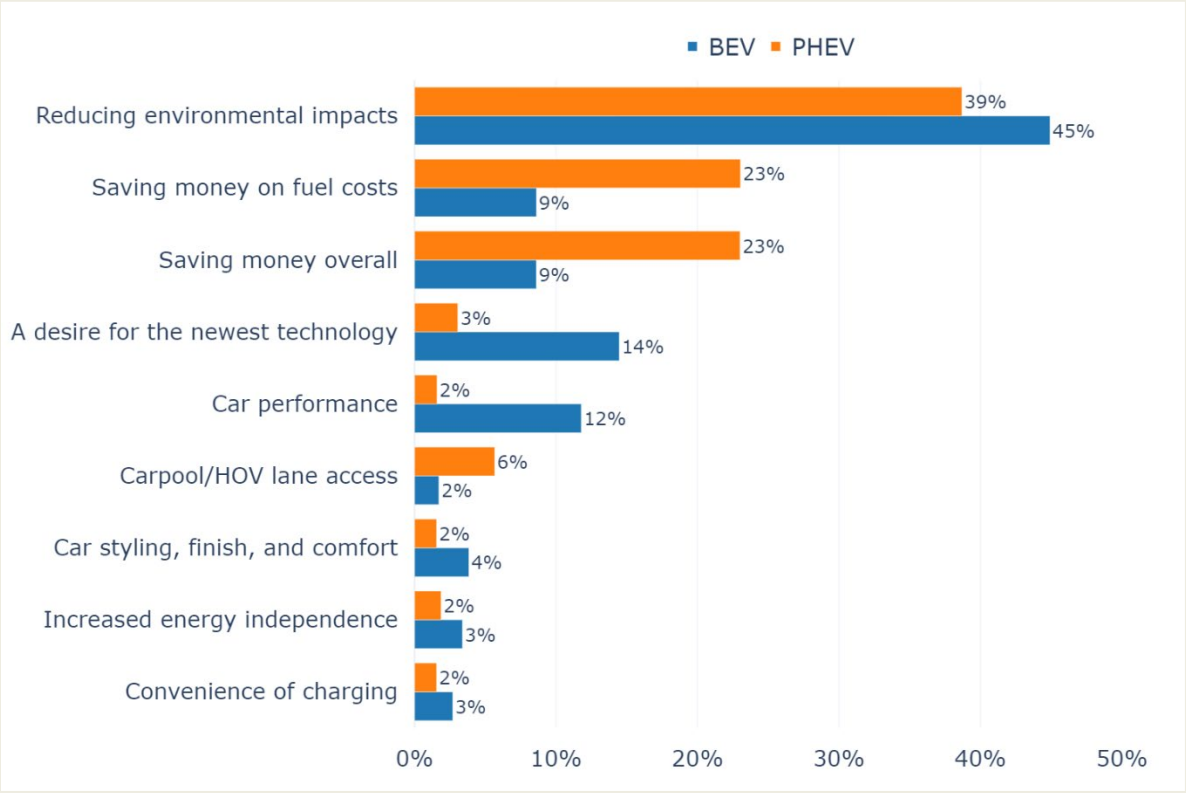
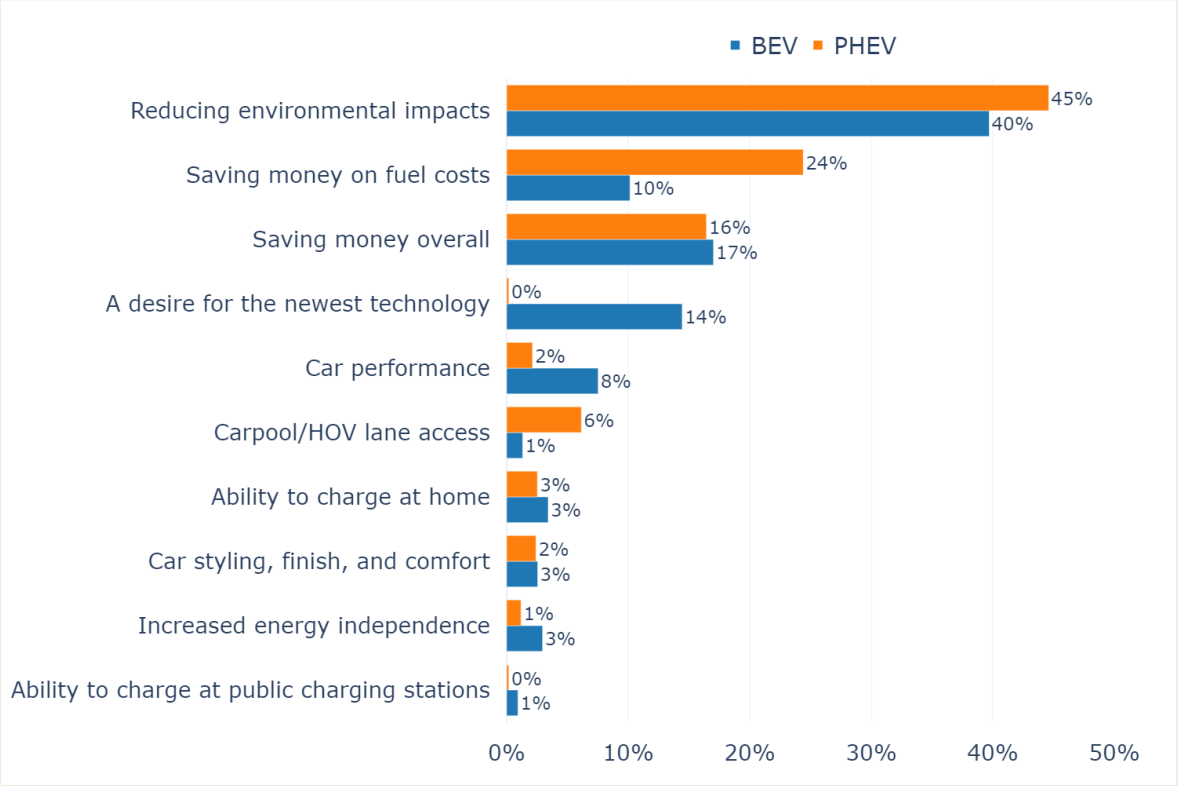


**Figure 6. Responses to "Which of These Factors Was the Most Important Reason Why You Decided to Acquire an Electric Car?" in the 2021 Version of the Survey**

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi^2=59$, $p<0.01$, $n=660$).*

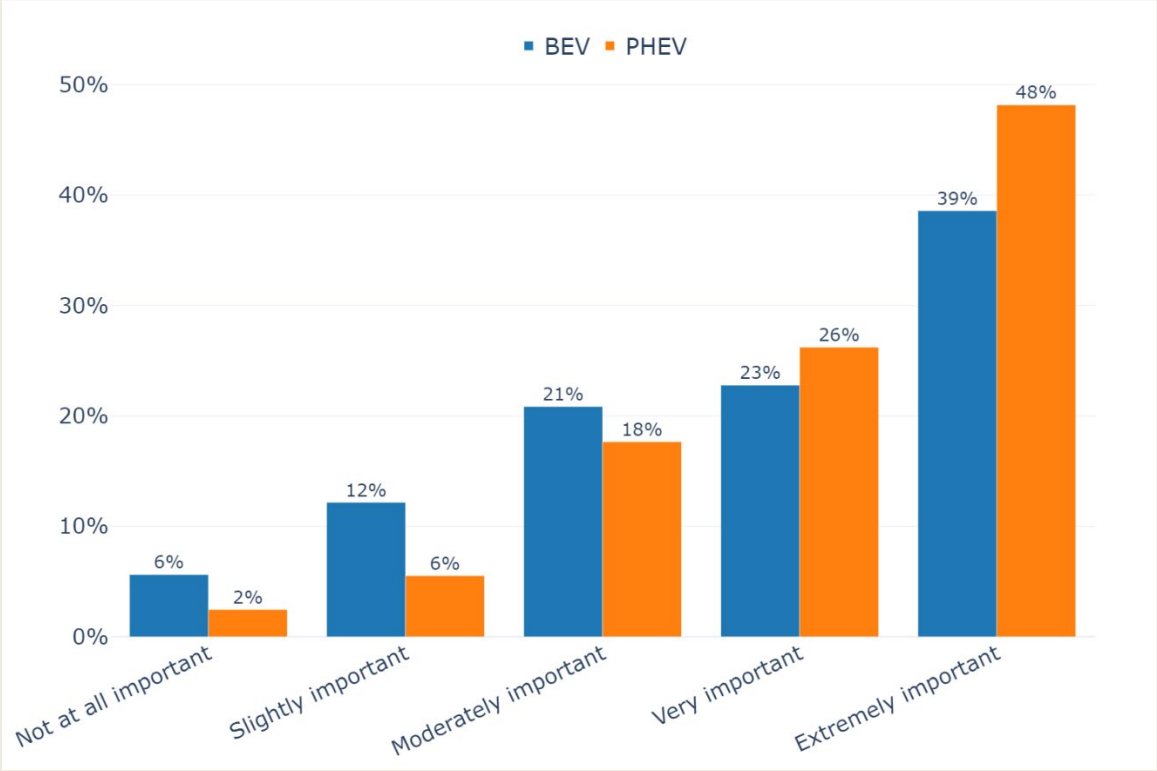



## 2.3 Program Impact

Respondents were asked several questions to determine how essential the NYSERDA Drive Clean Rebate was to their purchase. Approximately two-thirds (66%) rated the rebate as extremely important or very important in making it possible for them to acquire their car (Figure 7).

**Figure 7. Responses to "How Important Was the State Drive Clean Rebate in Making it Possible for You to Acquire Your Electric Car?"**

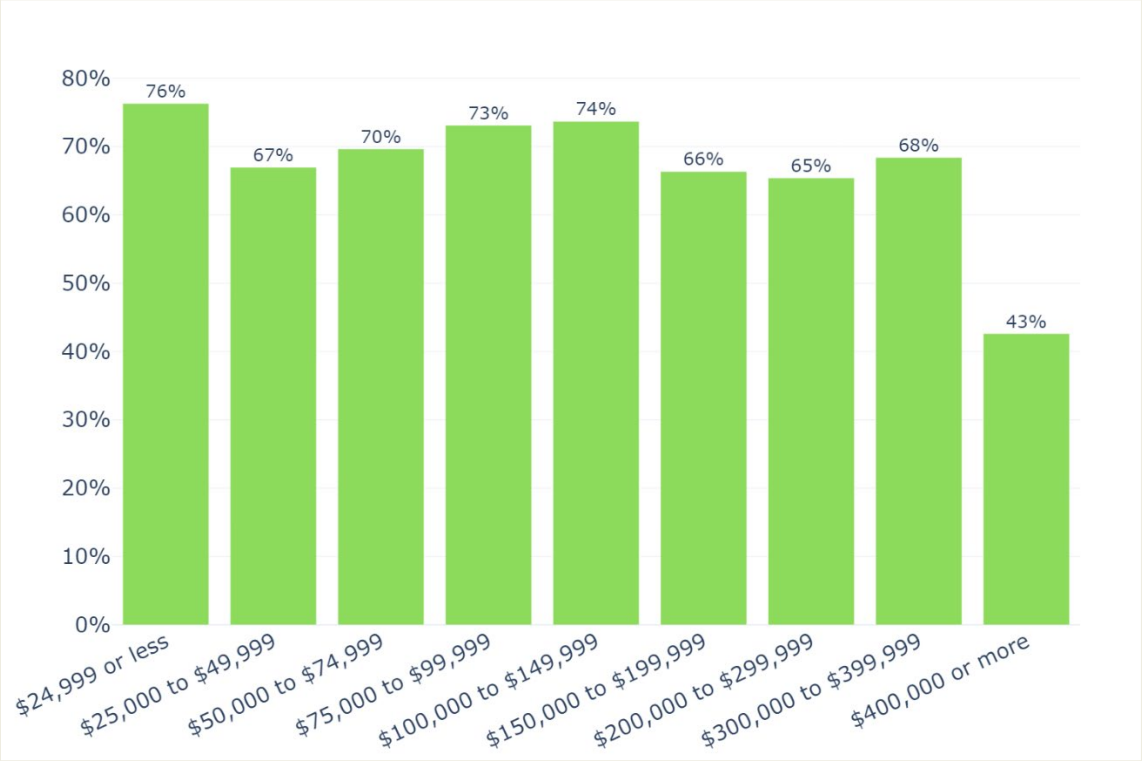
*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=68$, $p<0.01$, $n=3271$).*




In general, there is not a strong relationship between a participant's income and the importance they assigned the Drive Clean rebate (Figure 8). For income levels below $400,000 the percent describing the rebate as very or extremely important hovers between 65% and 76%, with no clear relationship to income. However, there is a sharp drop-off in importance for those who reported a household income of $400,000 or more, with only 43% describing the rebate as very or extremely important. The responses among these top earners represent a notable decrease from the 2018–2019 survey report, in which 63% of respondents with a household income of $400,000 or more rated the rebate as very or extremely important.

**Figure 8. Percent of Respondents Who Stated That the Rebate Was "Very Important" or "Extremely Important" by Income Level**

*(n=2733)*




Two questions asked about hypothetical purchase decisions in the absence of the rebate (Figures 9 and 10). Approximately two-fifths (41%) of respondents indicated that they would not have purchased their electric vehicle without the Drive Clean Rebate. PHEV drivers were much more likely to indicate that the rebate was essential to their purchase than BEV drivers.

**Figure 9. Responses to "Would You Have Purchased/Leased Your Electric Car without the State Car Rebate (Drive Clean Rebate)?"**

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi^2=67$, $p<0.01$, $n=3394$).*

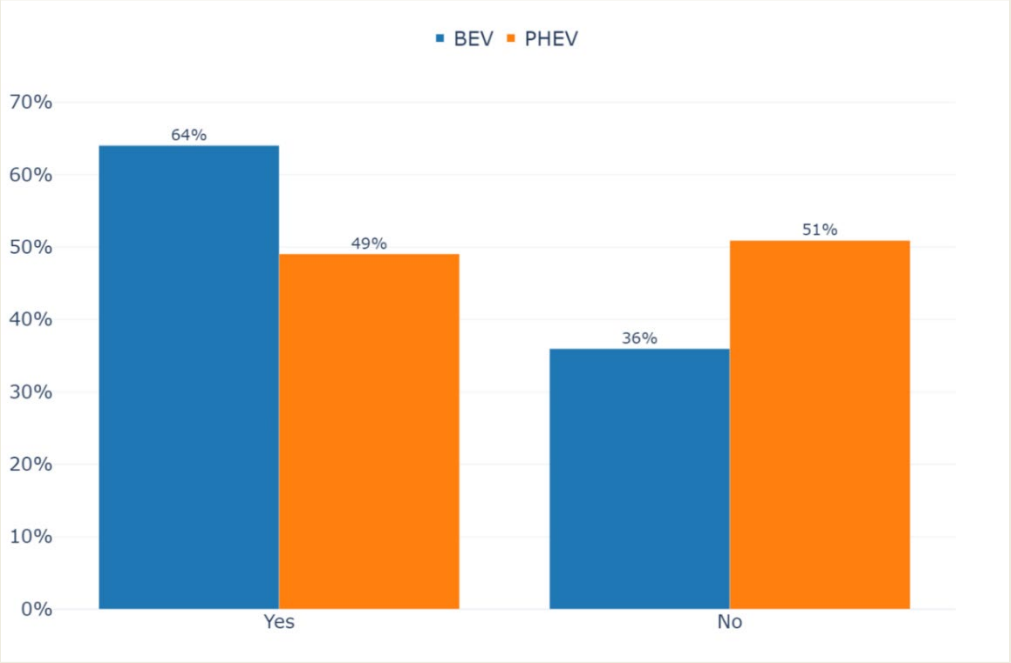
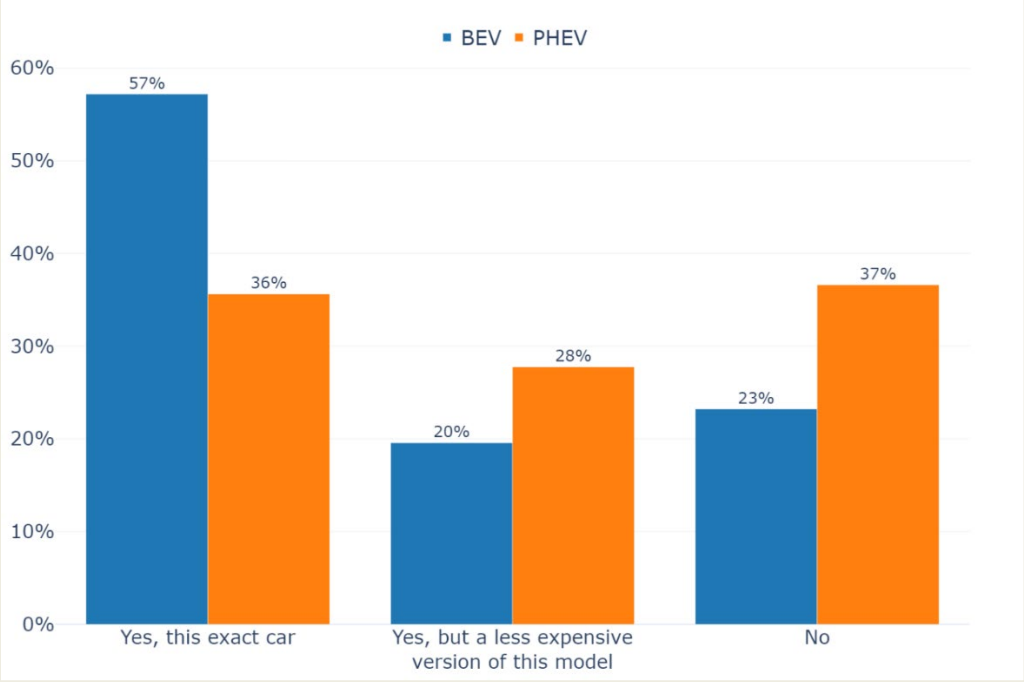



**Figure 10. Responses to "If the Drive Clean Rebate Were Not Available for Electric Cars, Would You Still Have Purchased/Leased the Same Car?"**

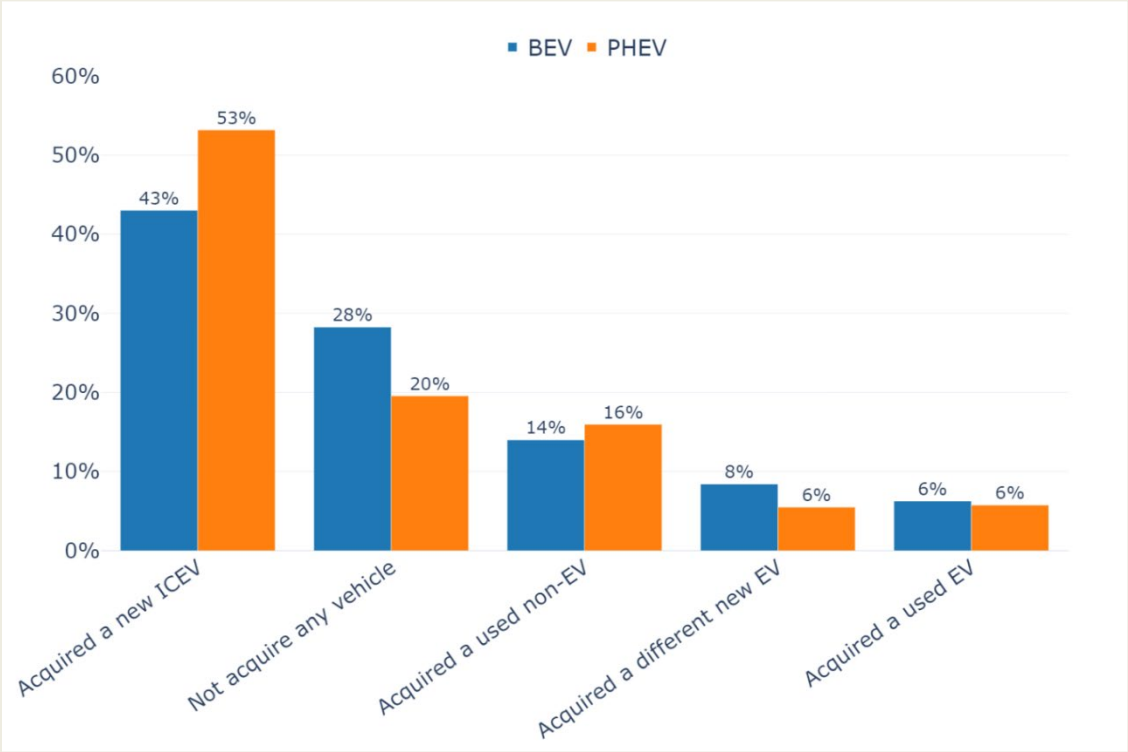
*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi^2=136$, $p<0.01$, $n=3391$).*



Drivers who answered "No" to the question: "If the Drive Clean Rebate were not available for electric cars, what would you most likely have done? Please select one statement" were asked a follow-up question about what purchase they would have made. Figure 11 shows that BEV drivers were most likely to report that they would not have made any purchase at all, while PHEV drivers were most likely to purchase a new non-electric car instead.

**Figure 11. Responses to "If the Drive Clean Rebate Were Not Available for Electric Cars, What Would You Most Likely Have Done?"[4]**

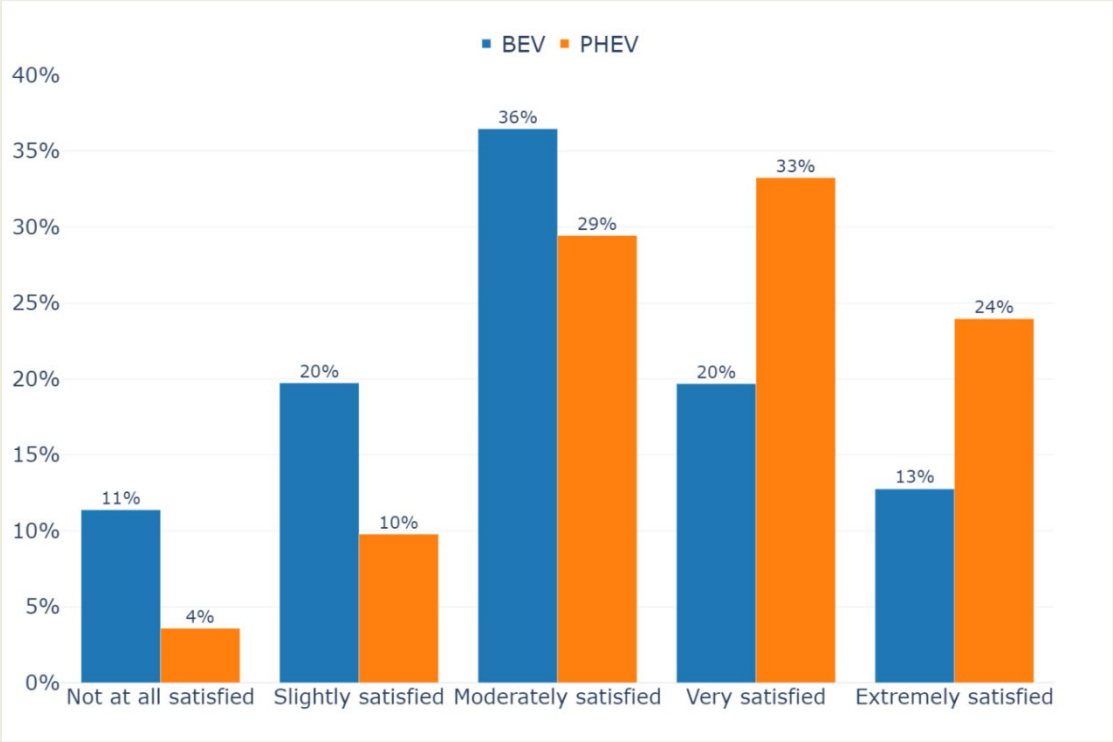
*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=15$, $p<0.01$, $n=921$).*




Overall, two-fifths (40%) of respondents reported being extremely satisfied or very satisfied with the amount of the rebate. Figure 12 shows that PHEV drivers reported significantly higher levels of satisfaction with the rebate amount than BEV drivers.

**Figure 12. Satisfaction with the Amount of the Rebate**

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=204$, $p<0.01$, $n=3211$).*




## 2.4 Dealership Experience

Dealers appear to be broadly aware of the Drive Clean Rebate, with 74% of respondents reporting that their dealer was aware of the rebate when the respondent first visited the dealership (Figure 13). Respondents had lower initial awareness of the rebate than dealers with only 56% of respondents indicating they were aware of the rebate before visiting a dealership (Figure 14). BEV drivers were more likely to be aware of the rebate than PHEV drivers.

**Figure 13. Responses to "Did Your Dealer Know about the Drive Clean Rebate at Your First Visit?"**

*(n=3391)*

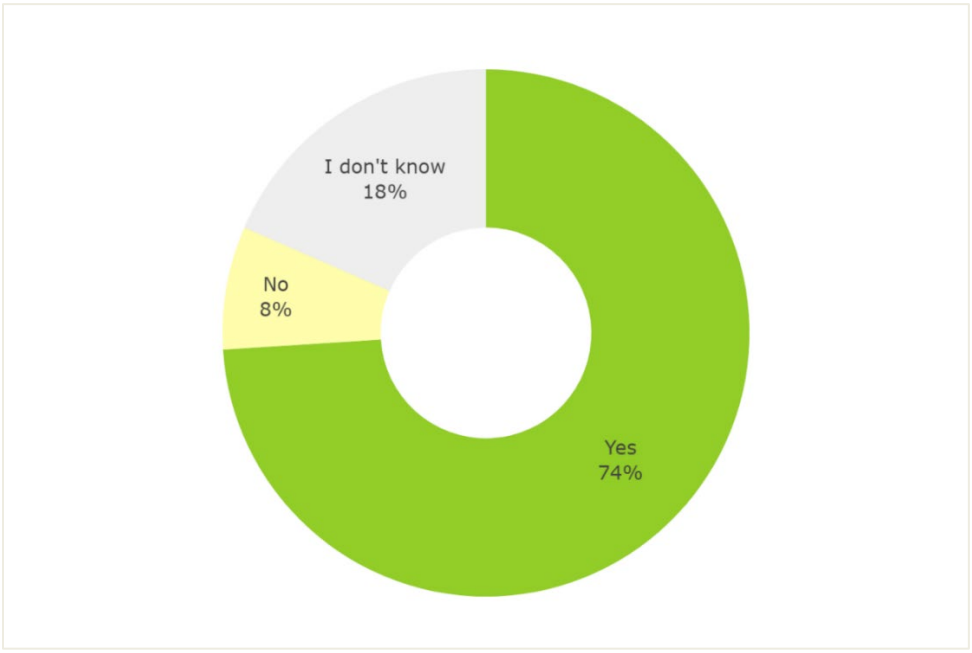
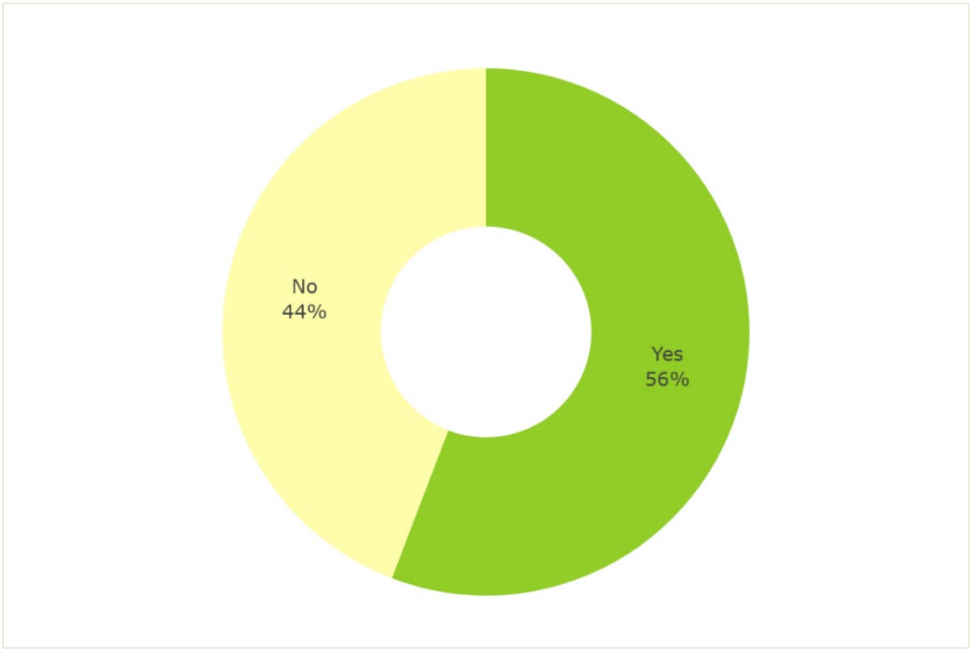



**Figure 14. Responses to "Had You Heard about the Drive Clean Rebate before You Visited a Dealership?"**

*(n=3398)*



## 2.5 Charging

Figure 15 shows that most respondents (87%) have access to charging at their home. Interestingly, the proportion of respondents who do not have access to charging at home increased from 4% in the 2018–2019 survey report to 13%. Home charging access for PHEV and BEV drivers was not significantly different (Figure 15). However, there was a significant difference in workplace charging between PHEV and BEV drivers (Figure 16), with BEV drivers more likely to have charging opportunities at or near their workplaces.

**Figure 15. Access to Charging at Home**

*Responses from PHEV and BEV consumers are not significantly different (chi-squared test: $\chi 2=0$, $p>0.05$, $n=2695$).*

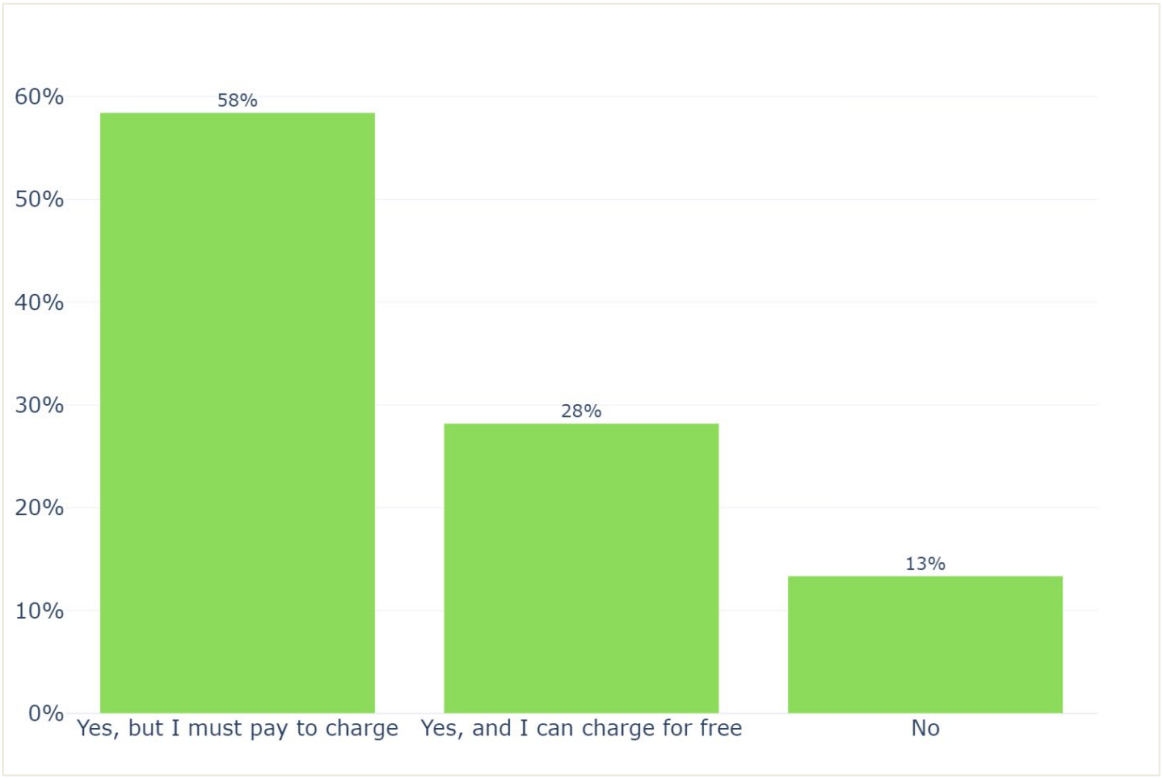
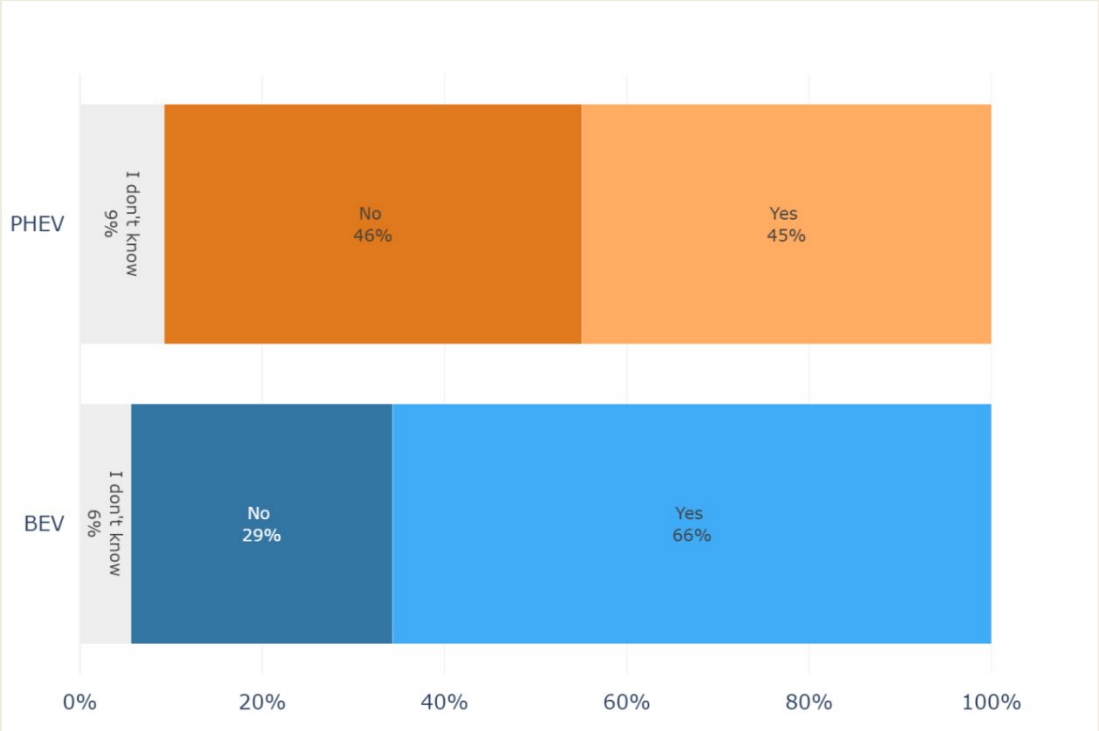


**Figure 16. Access to Charging at or Near Work**

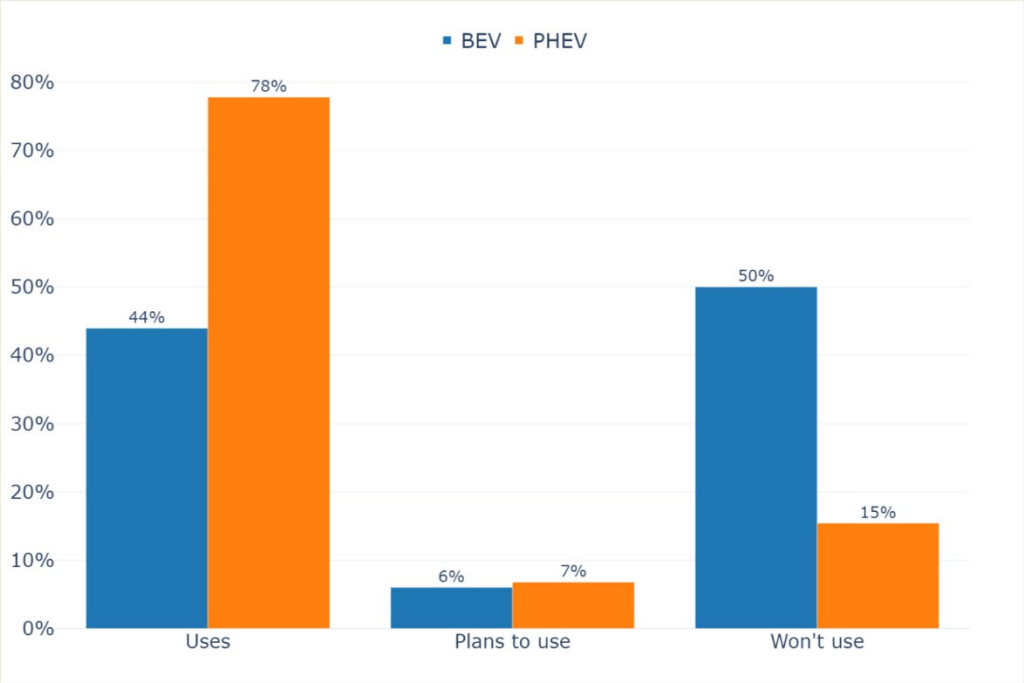
*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=84$, $p<0.01$, $n=2307$).*




Respondents were also asked about whether they currently use Level 1 or Level 2 charging at home, as well as if they plan to install Level 1 or Level 2 charging stations in the next six months. Figures 17 and 18 show that BEV drivers are over four times more likely to use Level 2 charging than PHEV drivers, and nearly four times more likely to say they will not use Level 1 charging. On the other hand, PHEV drivers are four times more likely than BEV drivers to say they will not use Level 2 charging, and almost twice as likely to use Level 1 charging. Approximately 18% of all respondents plan to install Level 2 charging stations within the next six months.

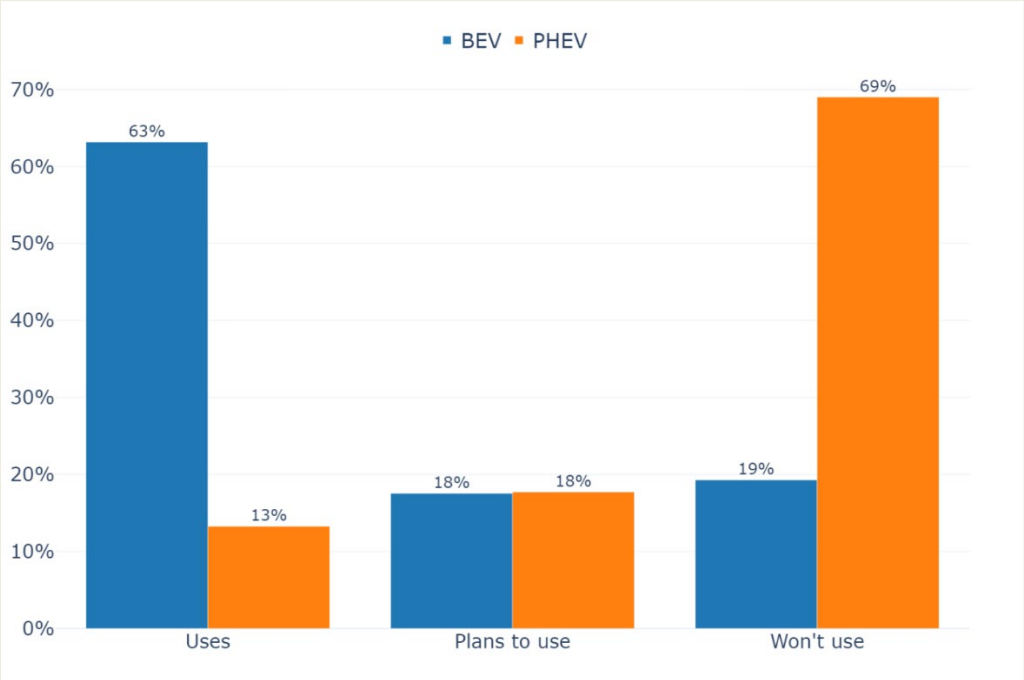
## Figure 17. Level 1 Charger Use

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=269$, $p<0.01$, $n=2082$).*




## Figure 18. Level 2 Charger Use

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=626$, $p<0.01$, $n=2240$).*



## 2.6 Demographics

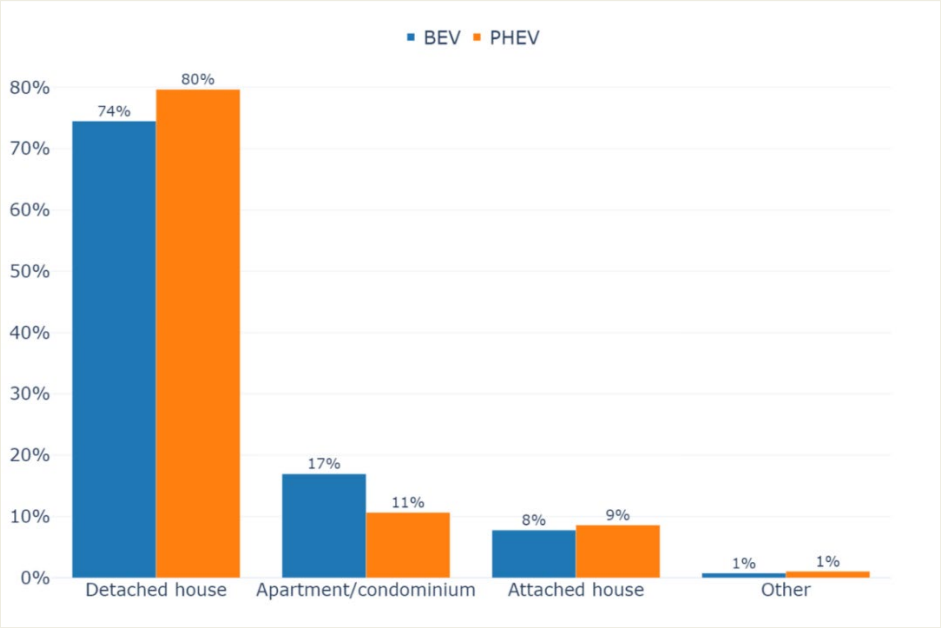
Figure 19 shows that a large majority (85%) of respondents are homeowners. Three-quarters (76%) of electric car adopters live in detached houses (Figure 20), which is a notable decrease from 84% in the 2018–2019 Adoption Survey report.

**Figure 19. Responses to "Do You Own or Rent Your Residence?"**

*Responses from PHEV and BEV consumers are not significantly different (chi-squared test: $\chi 2=1$, $p>0.05$, $n=3282$).*

### Figure 20. Residence Types

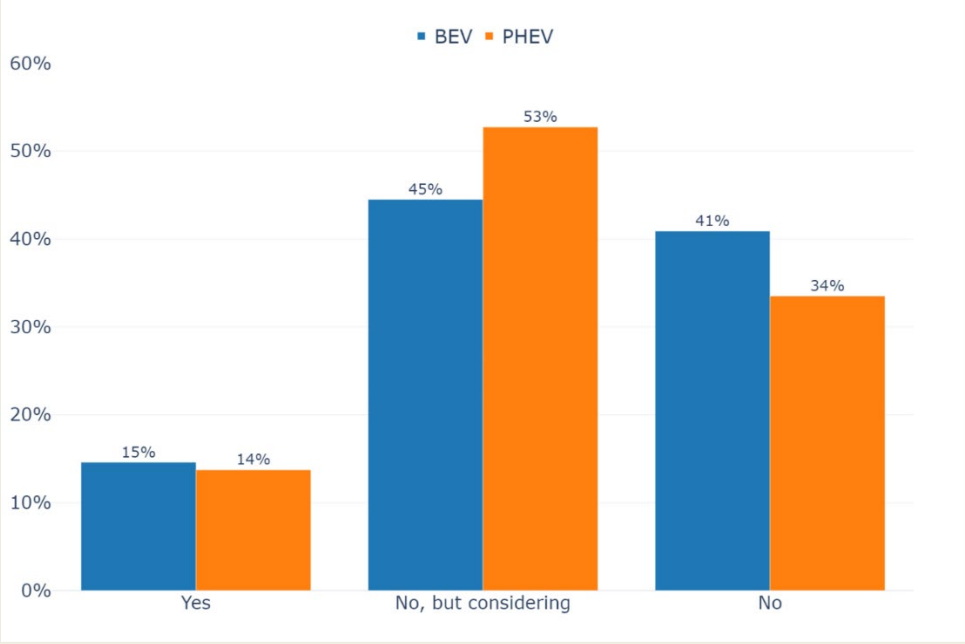
*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=23$, $p<0.01$, $n=3346$).*




Adoption of solar panels is at 14% overall, with BEV drivers slightly more likely than PHEV drivers to have solar panels installed at their residence (Figure 21).

### Figure 21. Responses to "Do You Have Solar Panels at Your Residence?"

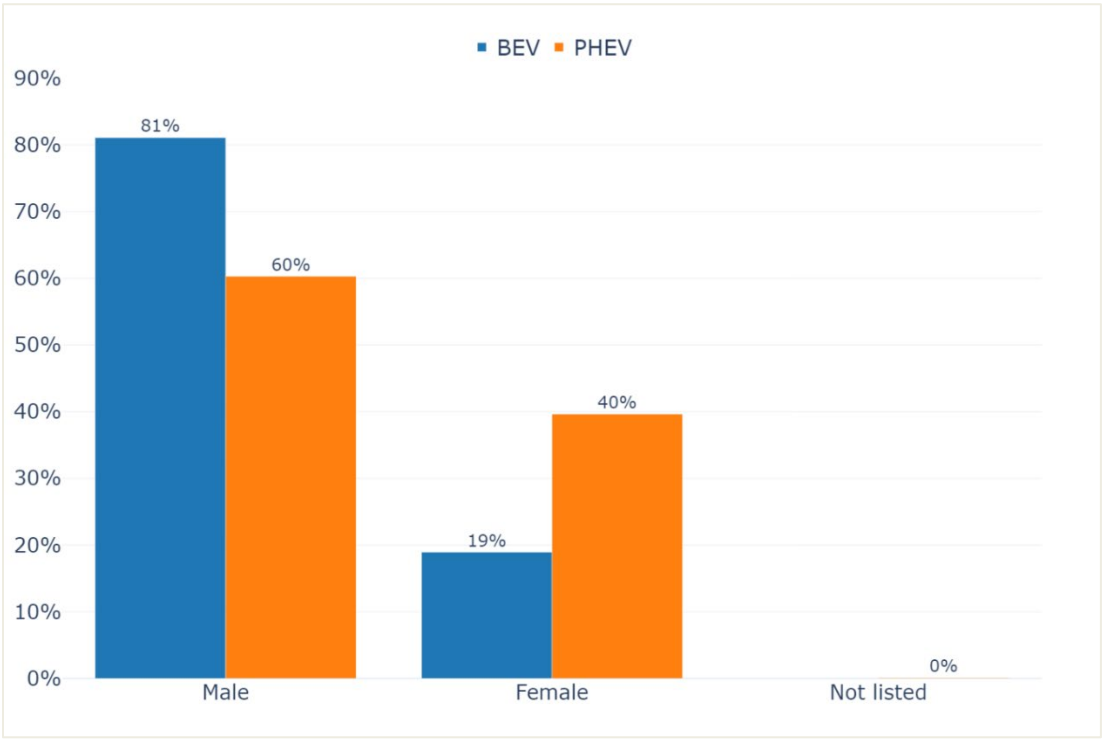
*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=21$, $p<0.01$, $n=3398$).*



Respondents are 75% male, with females making up a larger portion of PHEV drivers than BEV drivers (Figure 22). The education level of respondents is high; with 80% having earned a bachelor's or graduate degree, there is a statistically significant difference between the education levels of the PHEV and BEV drivers (Figure 23). Figures 24 and 25 show that, on average, BEV drivers are younger and have higher incomes than PHEV drivers. Most respondents (81%) indicated they are white (Figure 26), and 8% of respondents indicated they were of Hispanic ethnicity.

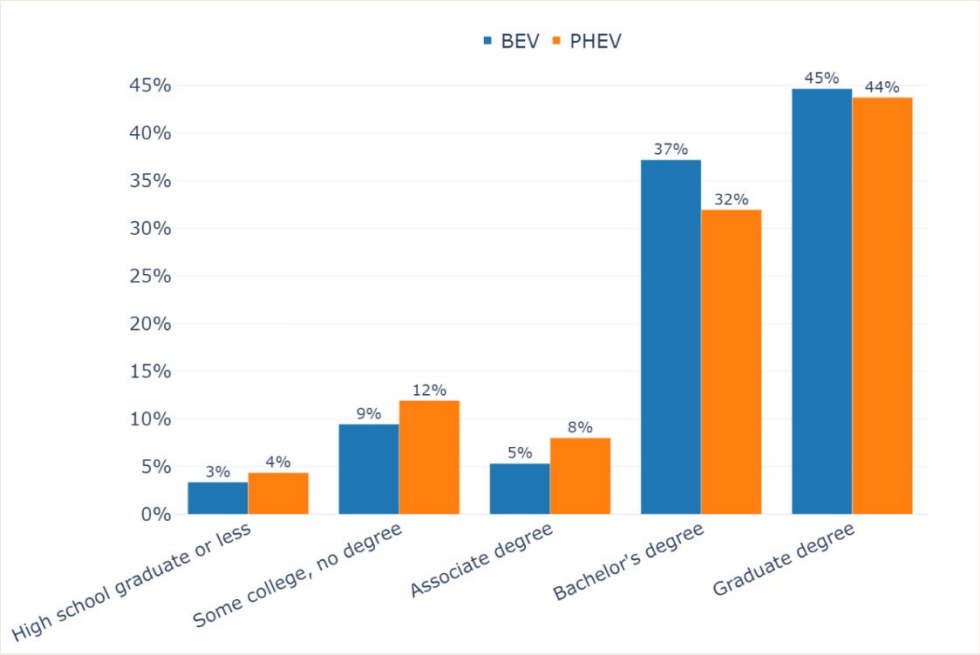
### Figure 22. Gender

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=163$, $p<0.01$, $n=3317$). "Not listed" includes "Nonbinary/third gender" and "Prefer to self-describe." These options were only available in the 2021 survey edition.*



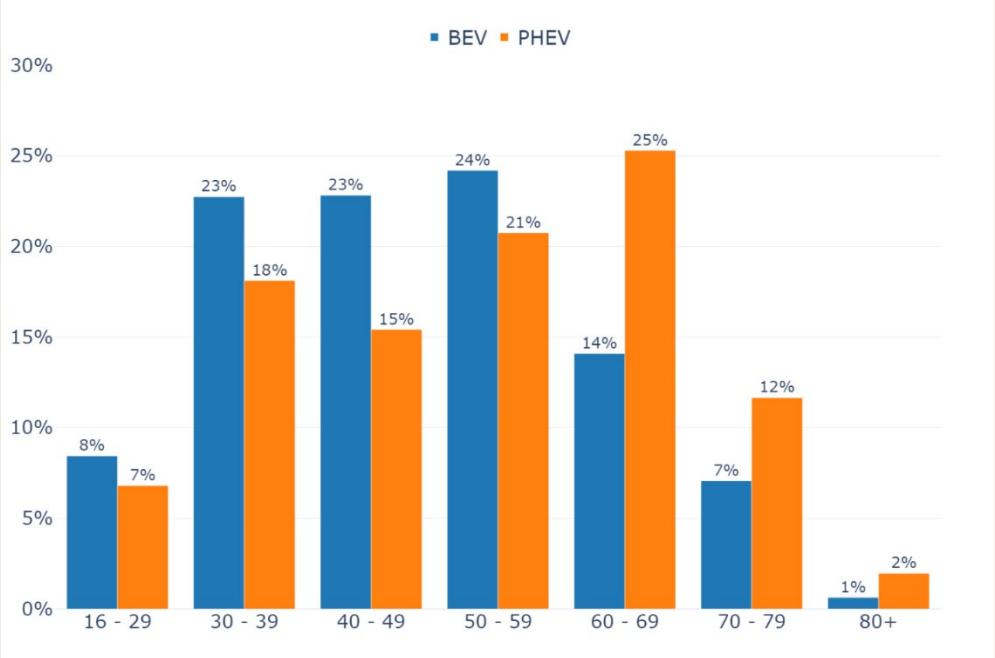
## Figure 23. Highest Level of Education Completed

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=20$, $p<0.01$, $n=3330$).*



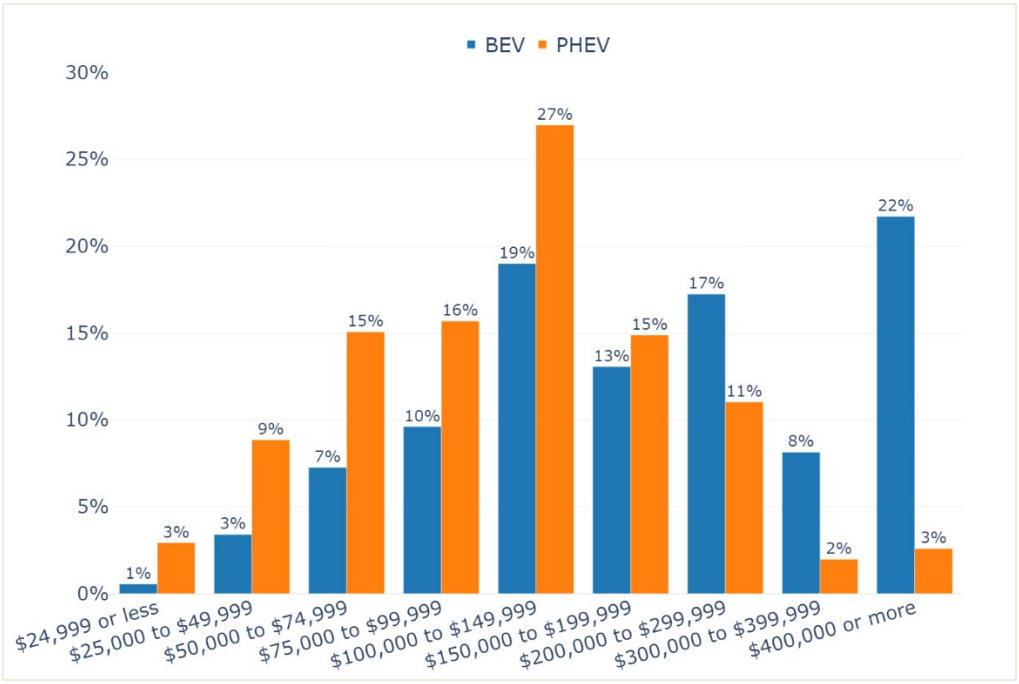

## Figure 24. Age

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=113$, $p<0.01$, $n=3346$).*



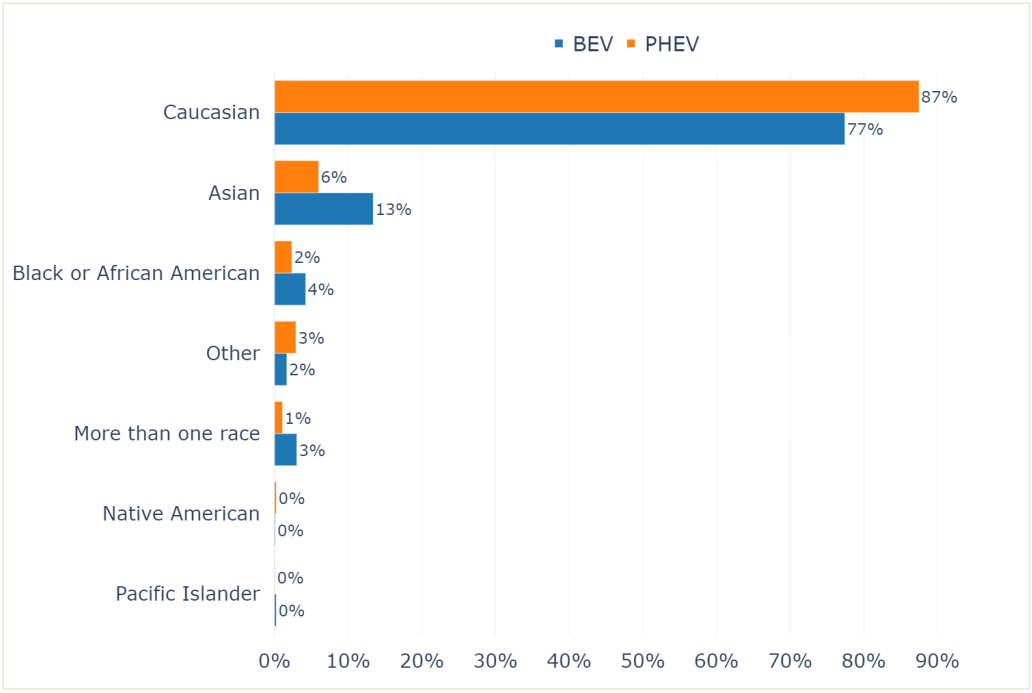
## Figure 25. Current Annual Gross Household Income from All Sources (i.e., Before Taxes)

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=333$, $p<0.01$, $n=2832$).*




## Figure 26. Racial Identity

*Responses from PHEV and BEV consumers are significantly different (chi-squared test: $\chi 2=60$, $p<0.01$, $n=3059$). Several categories are condensed for ease of reporting. East Asian, South Asian, and Southeast Asian are included in Asian. Middle Eastern and North African are included in Caucasian. Any respondent who selected two or more races is included in "More than one race."*



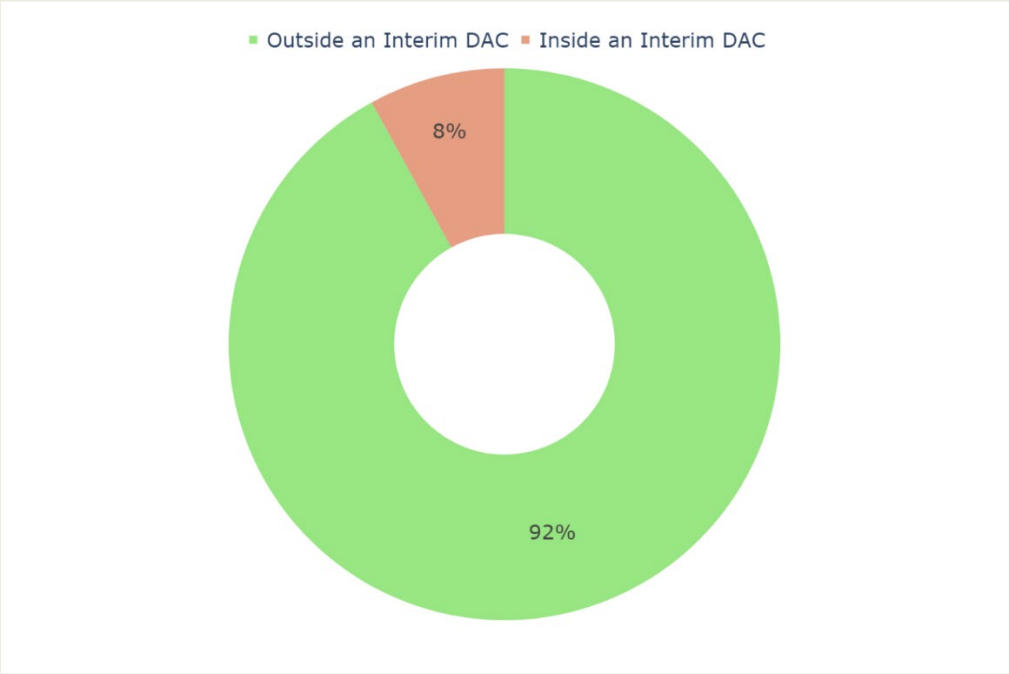
## 2.7 Disadvantaged Communities Participation

Disadvantaged communities (DACs) are communities that are impacted by both economic and environmental burdens and need to be prioritized to achieve environmental justice. New York State has established interim criteria to define DACs.[5] Based on these criteria, DACs have a higher proportion of minority residents and lower household incomes relative to New York State as a whole. Approximately 27% of New York State residents live in a DAC.

Overall, 8% of Drive Clean Rebate program participants with vehicles purchased in 2020 were within DACs (Figure 27). DAC residents were proportionally represented among survey respondents, making up 7% of respondents. There was no difference in the vehicle types adopted between DAC and non-DAC residents, with 69% adopting BEVs and 31% adopting PHEVs for both groups.

**Figure 27. Percentage of Participants within a Disadvantaged Community**

*(n=12,947)*




DAC residents did not differ significantly from non-DAC residents on most survey responses, including motivations to purchase their electric car. Interestingly, DAC status had no effect on participant rebate essentiality (Figure 28) despite being correlated with lower income (Figure 29). The median income is lower for DAC residents; 62% of them had a household income of $149,999 or less, compared to 51% of participants not in DACs.

**Figure 28. Rebate Essentiality by Disadvantaged Community Status**

*Responses from DAC and non-DAC participants are not significantly different (chi-squared test: $\chi 2=0$, $p>0.05$, $n=3382$).*

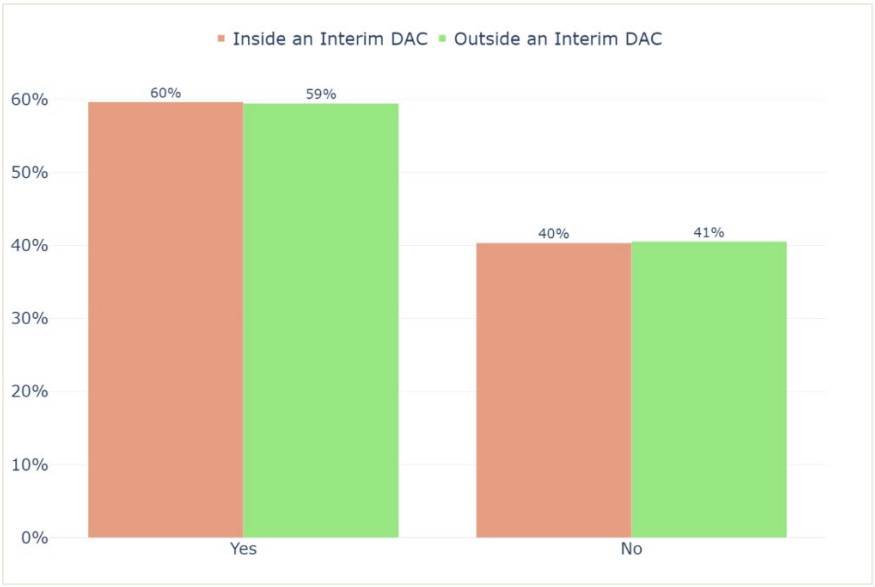
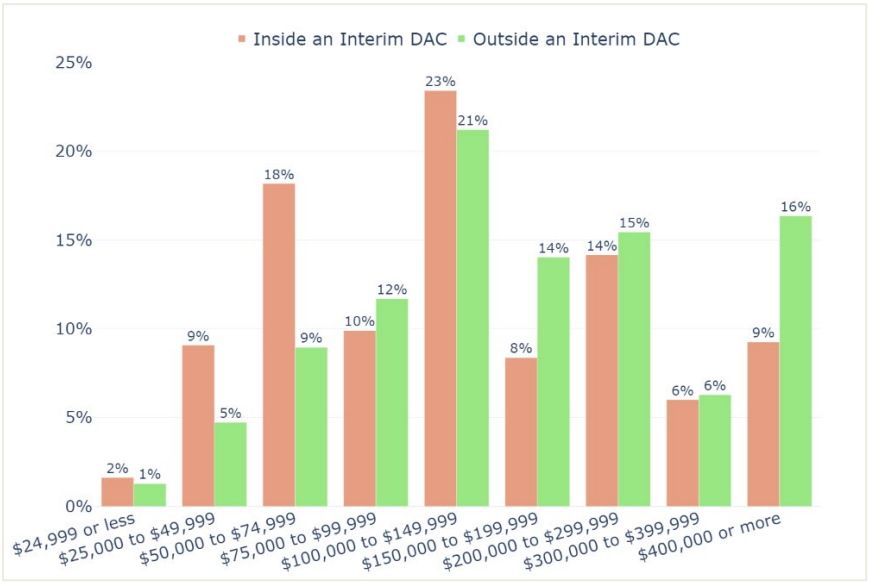



**Figure 29. Income by Disadvantaged Community Status**

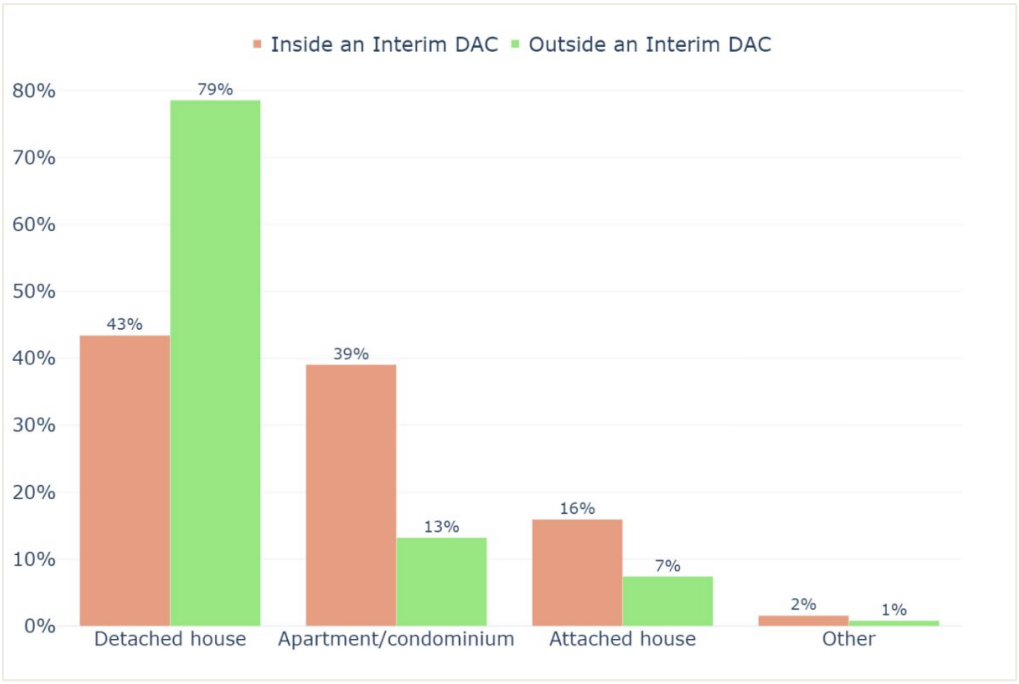
*Responses from DAC and non-DAC participants are significantly different (chi-squared test: $\chi 2=38$, $p<0.01$, $n=2813$).*




The only other dimensions where DAC residents differed from non-DAC residents were housing type and vehicle replacement status. DAC residents were three times as likely to live in apartment buildings (Figure 30) and more than twice as likely to report their rebated vehicle as being their first or only car, as opposed to adding to their household fleet (Figure 31).

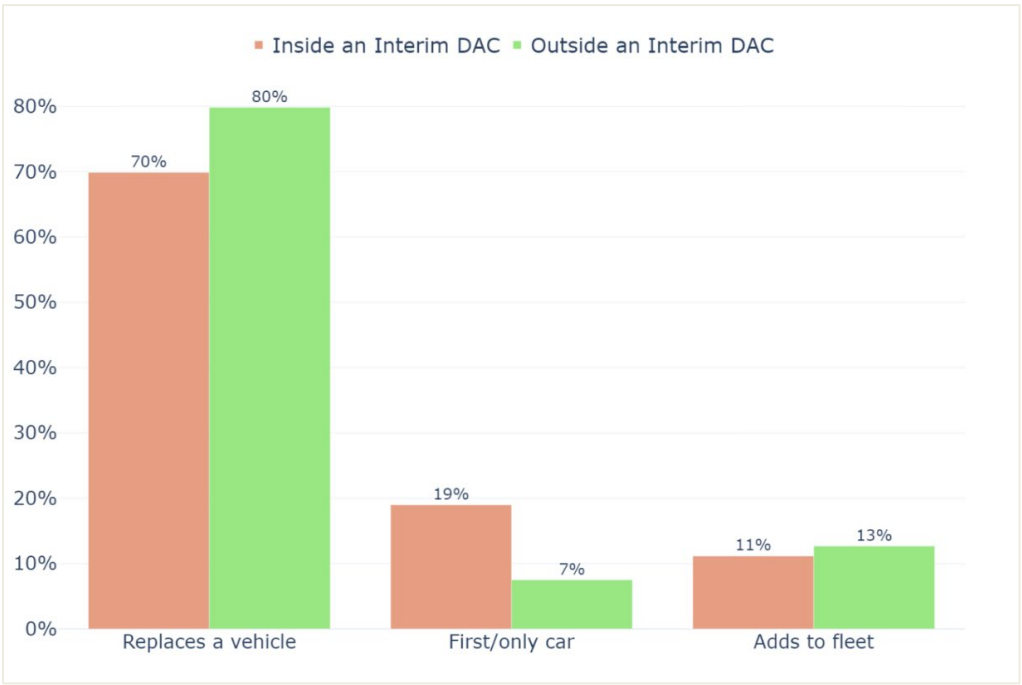
## Figure 30. Residence Type by Disadvantaged Community Status

*Responses from DAC and non-DAC participants are significantly different (chi-squared test: $\chi 2=158$, $p<0.01$, $n=3324$).*




## Figure 31. Vehicle Replacement Status by Disadvantaged Community Status

*Responses from DAC and non-DAC participants are significantly different (chi-squared test: $\chi 2=39$, $p<0.01$, $n=3382$).*



# Appendix. Adoption Survey Questionnaire

## A.1 Introduction

**Welcome to NYSERDA's Drive Clean Rebate "Electric Car Adoption Survey."**
Congratulations on your new electric car! Please take a few moments to complete the following survey to help our program best support the electric car market in New York State.

Your participation in the survey is voluntary. However, your input is valuable for enhancing the electric car experience for all New Yorkers, and it is important that you try to answer all of the questions. The information you provide will be kept private to the extent permitted by law. The analysis will only use summary level data; no individual respondents will be identified.

The survey will take about 10–15 minutes. Your link is personalized and cannot be shared with others. This means that your progress will be saved, so you can exit and return at a more convenient time to complete the survey.

If you have any questions about this research project or if you experience any technical difficulties, you may contact the Center for Sustainable Energy (CSE), the Drive Clean Rebate Program Administrator for NYSERDA, at the following:

Phone: (866) 595-7917
Email: NYDriveClean@energycenter.org

## Personal Car

**Page exit logic:** Skip / Disqualify Logic**IF:** #1 Question "According to our records, you received a rebate for a [contact("nymake")] [contact("nymodel")]. Is this car used primarily for personal use?" is one of the following answers ("No, this car is primarily for commercial/organizational use") **THEN:** Jump to page 16 - Disqualification (commercial vehicle)

**Page exit logic:** Skip / Disqualify Logic**IF:** #1 Question "According to our records, you received a rebate for a [contact("nymake")] [contact("nymodel")]. Is this car used primarily for personal use?" is one of the following answers ("My rebate is for a different car") **THEN:** Jump to page 17 - Disqualification (different vehicle)

1) According to our records, you received a rebate for a [contact("nymake")] [contact("nymodel")]. Is this car used primarily for personal use?*

( ) Yes

( ) No, this car is primarily for commercial/organizational use

( ) My rebate is for a different car

---

## Primary Driver

**Page exit logic:** Skip / Disqualify Logic**IF:** #2 Question "Are you the primary driver of this [contact("nymake")] [contact("nymodel")]?" is one of the following answers ("No") **THEN:** Jump to page 18 - Disqualification (primary driver)

2) Are you the primary driver of this [contact("nymake")] [contact("nymodel")]?*

( ) Yes

( ) No

---

## Electric Car Definition

In this survey, we are going to ask you about your experience with your **electric car**.
By car, we mean passenger cars, SUVs, or light duty trucks. Your car might:

- run entirely on electricity from plugging the car in (**all-battery electric car**),
- use a combination of electricity from plugging in and gasoline (**plug-in hybrid electric car**), or
- use hydrogen as fuel (**hydrogen fuel-cell electric car**).

When we refer to **electric cars,** we are referring to all of these.

---

## Electric Car Purchasing Decisions

**Logic: Show/hide trigger exists.**

3) Which of the following best describes your new electric car purchase or lease?

( ) It replaces (or will replace) another household car

( ) It adds to the other cars in my household's fleet

( ) It is my household's first-ever car

( ) My household has had cars in the past, but did not have one when we purchased/leased this electric car

**Logic: Hidden unless: #3 Question "Which of the following best describes your new electric car purchase or lease?" is one of the following answers ("It replaces (or will replace) another household car")**

**Logic: Hidden unless: #3 Question "Which of the following best describes your new electric car purchase or lease?" is one of the following answers ("It replaces (or will replace) another household car")**

Please describe the **model year and technology type** of the car that you replaced (or plan to replace) with your new electric car.

Model Year

( ) 2021

( ) 2020

( ) 2019

( ) 2018

( ) 2017

( ) 2016

( ) 2015

( ) 2014

( ) 2013

( ) 2012

( ) 2011

( ) 2010

( ) 2009

( ) 2008

( ) 2007

( ) 2006

( ) 2005

( ) 2004

( ) 2003

( ) 2002

( ) 2001

( ) 2000

( ) 1999 or earlier

Technology Type

( ) Gasoline

( ) Conventional hybrid (fueled with gasoline only)

( ) Plug-in hybrid electric car (recharged with electricity and/or fueled with gasoline)

( ) All-battery electric car (recharged with electricity only)

( ) Hydrogen fuel-cell electric car

( ) Diesel

( ) Compressed natural gas

( ) Flex-fuel (E85 ethanol)

( ) Other alternative fuel

---

## Electric Car Purchasing Decisions (cont.)

**Logic: Show/hide trigger exists.**

5) Including your new electric car, how many cars does your household own or lease in total? [please exclude motorcycles, ATVs, RVs, etc. or any cars not currently registered]

( ) 1

( ) 2

( ) 3

( ) 4 or more

**Logic: Hidden unless: #5 Question "Including your new electric car, how many cars does your household own or lease in total? [please exclude motorcycles, ATVs, RVs, etc. or any cars not currently registered]" is one of the following answers ("2","3","4 or more")**

6) Other than your rebated electric car, please describe the car in your household that you will use most often.

**Car Type:**

( ) Compact Car

( ) Midsize Car

( ) Fullsize Car

( ) Small/midsize SUV

( ) Fullsize SUV

( ) Pickup truck

( ) Minivan

**Technology Type:**

( ) Gasoline

( ) Conventional hybrid (fueled with gasoline only)

( ) Plug-in hybrid electric car (recharged with electricity and/or fueled with gasoline)

( ) All-battery electric car (recharged with electricity only)

( ) Hydrogen fuel-cell electric car

( ) Diesel

( ) Compressed natural gas

( ) Flex-fuel (E85 ethanol)

( ) Other alternative fuel

7) Which of the following statements best describes your interest in acquiring an electric car when you started your search for a new car? Please select one statement.

( ) I did not know electric cars existed

( ) I knew electric cars existed, but had no interest in one

( ) I had some interest in an electric car

( ) I was very interested in an electric car

( ) I was only interested in an electric car but considered multiple makes/models

( ) I was only interested in the specific electric car I purchased/leased

8) Is this the first electric car you have ever purchased or leased?

( ) Yes

( ) No

---

# Electric Car Purchasing Decisions

9) On a scale of 1 to 5 (with 1 representing "Not at all important" and 5 representing "Extremely important"), please describe how important each of the following factors was in your decision to acquire an electric car.

| | **Not at all important (1)** | **Slightly important (2)** | **Moderately important (3)** | **Very important (4)** | **Extremely important (5)** |
|---|---|---|---|---|---|
| Saving money on fuel costs | ( ) | ( ) | ( ) | ( ) | ( ) |
| Saving money overall | ( ) | ( ) | ( ) | ( ) | ( ) |
| Reducing environmental impacts | ( ) | ( ) | ( ) | ( ) | ( ) |
| Carpool or High Occupancy Vehicle (HOV) lane access | ( ) | ( ) | ( ) | ( ) | ( ) |
| Increased energy independence | ( ) | ( ) | ( ) | ( ) | ( ) |
| Ability to charge at home | ( ) | ( ) | ( ) | ( ) | ( ) |
| Ability to charge at work | ( ) | ( ) | ( ) | ( ) | ( ) |
| Ability to charge at public charging stations | ( ) | ( ) | ( ) | ( ) | ( ) |
| Speed of car refueling | ( ) | ( ) | ( ) | ( ) | ( ) |
| Car performance | ( ) | ( ) | ( ) | ( ) | ( ) |
| Car styling, finish, and comfort | ( ) | ( ) | ( ) | ( ) | ( ) |
| A desire for the newest technology | ( ) | ( ) | ( ) | ( ) | ( ) |

**Logic: Hidden unless: nyfueltype is exactly equal to "Electric"**

10) Which of these factors was the **most important** reason why you decided to acquire an electric car? Please select one statement.

( ) Saving money on fuel costs

( ) Saving money overall

( ) Reducing environmental impacts

( ) Carpool or High Occupancy Vehicle (HOV) lane access

( ) Increased energy independence

( ) Ability to charge at home

( ) Ability to charge at work

( ) Ability to charge at public charging stations

( ) Car performance

( ) Car styling, finish, and comfort

( ) A desire for the newest technology

**Logic: Hidden unless: nyfueltype is exactly equal to "Hydrogen"**

11) Which of these factors was the **most important** reason why you decided to acquire an electric car? Please select one statement.

( ) Saving money on fuel costs

( ) Saving money overall

( ) Reducing environmental impacts

( ) Carpool or High Occupancy Vehicle (HOV) lane access

( ) Increased energy independence

( ) Speed of car refueling

( ) Car performance

( ) Car styling, finish, and comfort

( ) A desire for the newest technology

12) On a scale of 1 to 5 (with 1 representing "Not at all important" and 5 representing "Extremely important"), please describe how important each of the following factors was in **making it possible** for you to acquire your electric car.

| | **Not at all important (1)** | **Slightly important (2)** | **Moderately important (3)** | **Very important (4)** | **Extremely important (5)** | **Not applicable** |
|---|---|---|---|---|---|---|
| State car rebate (Drive Clean Rebate) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Federal tax incentives | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Green Pass or similar toll/E-ZPass discount | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Manufacturer or dealer incentives (e.g. low interest rate, cash back) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Special electricity rates for charging at home | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Free charging away from home | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Free hydrogen fueling | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |

## Program Performance

13) Would you have purchased/leased your electric car without the State car rebate (Drive Clean Rebate)?

( ) Yes

( ) No

**Logic: Show/hide trigger exists.**

14) If the Drive Clean Rebate were not available for electric cars, would you still have purchased/leased the same car? Please select one statement.

( ) Yes, I would have purchased/leased this exact electric car anyway

( ) Yes, but I would have purchased/leased a less expensive version of the same model

( ) No

**Logic: Hidden unless: #14 Question "If the Drive Clean Rebate were not available for electric cars, would you still have purchased/leased the same car? Please select one statement." is one of the following answers ("No")**

15) If the Drive Clean Rebate were not available for electric cars, what would you most likely have done? Please select one statement.

( ) Purchased/leased a different new electric car

( ) Purchased/leased a used electric car

( ) Purchased/leased a new non-electric car instead

( ) Purchased/leased a used non-electric car instead

( ) Not made any purchase/lease at all

16) Had you heard about the Drive Clean Rebate **before** you visited a dealership?

( ) Yes

( ) No

## Program Performance (cont)

17) On a scale of 1 to 5 (with 1 representing "Not at all satisfied" and 5 representing "Extremely satisfied"), please describe how satisfied you were with each of the following aspects of the Drive Clean Rebate.

| | **Not at all satisfied (1)** | **Slightly satisfied (2)** | **Moderately satisfied (3)** | **Very satisfied (4)** | **Extremely satisfied (5)** | **Not applicable** |
|---|---|---|---|---|---|---|
| Promotion | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Website | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Dealer familiarity with the rebate | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Amount of the rebate | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |

## Dealership Experience

The following questions will ask about your experience with your electric car dealer. If you visited more than one dealer, please answer the following questions for the dealer where you acquired your electric car.

18) How many electric cars did you see on your dealer's lot? [please provide your best estimate]

( ) None; electric cars had to be ordered

( ) 1–2

( ) 3–5

( ) 6–10

( ) 11–20

( ) More than 20

19) Did your dealer know about the Drive Clean Rebate when you first went to visit them?

( ) Yes

( ) No

( ) I don't know

20) On a scale of 1 to 5 (with 1 representing "Not at all knowledgeable " and 5 representing "Extremely knowledgeable"), please describe how knowledgeable your dealer was about the following topics.

| | **Not at all knowledgeable (1)** | **Slightly knowledgeable (2)** | **Moderately knowledgeable (3)** | **Very knowledgeable (4)** | **Extremely knowledgeable (5)** | **I don't recall** | **Did not discuss** |
|---|---|---|---|---|---|---|---|
| Electric cars in general | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Total cost of ownership | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Government financial incentives | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Other incentives/perks | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Car performance | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Environmental benefits of electric cars | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Electricity rates to charge at home | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Home charging (outlet/equipment options, installation costs, etc.) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Away-from-home charging (workplace, public) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Current availability of hydrogen fueling stations | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Future plans for hydrogen fueling stations in New York | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Hydrogen safety | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Hydrogen refueling process | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |
| Smartphone apps for your EV | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) | ( ) |

21) Whether or not these were offered to you, which of these services would be valuable for a dealer to provide? [select all that apply]

[ ] The option to have an extended test drive or loaner electric car before buying/leasing

[ ] An electric car specialist to answer questions about cars

[ ] Facilitating the installation of a home charging station

[ ] Electric car tutorials or workshops for new owners

[ ] Free charging at dealership

[ ] Free hydrogen fueling at dealership

[ ] Other, please specify:_____*

[ ] None of the above

---

**Page entry logic:** This page will show when: nyfueltype is exactly equal to "Electric"

## Charging

**Logic: Show/hide trigger exists.**

22) Do you charge your electric car at home?

( ) Yes

( ) No, but I am planning to start charging at home

( ) No, and I have no plans to start charging at home

**Logic: Hidden unless: #22 Question "Do you charge your electric car at home?" is one of the following answers ("Yes","No, but I am planning to start charging at home")**

23) Which charging method(s) are you currently using (or plan to use) when charging at home? [select all that apply]

[ ] Plugging directly into a 120V outlet (typical household outlet)

[ ] Plugging directly into a 240V outlet (e.g., dryer outlet)

[ ] Using a level 1 (120V) charging station with a built-in plug

[ ] Using a level 2 (240V) charging station with a built-in plug

24) Do you have access to charging at the following locations?

| | **Yes, and I can charge for free** | **Yes, but I must pay to charge** | **No** | **I don't know** | ***Not applicable*** |
|---|---|---|---|---|---|
| Near your home | ( ) | ( ) | ( ) | ( ) | ( ) |
| At your workplace | ( ) | ( ) | ( ) | ( ) | ( ) |
| Near your workplace | ( ) | ( ) | ( ) | ( ) | ( ) |

---

**Page entry logic:** This page will show when: nyfueltype is exactly equal to "Hydrogen"

## Hydrogen Fueling

25) Do you have access to fueling at the following locations?

| | **Yes, and I can refuel for free** | **Yes, but I must pay to refuel** | **No** | **I don't know** | ***Not applicable*** |
|---|---|---|---|---|---|
| Near your home | ( ) | ( ) | ( ) | ( ) | ( ) |
| Near your workplace | ( ) | ( ) | ( ) | ( ) | ( ) |
| On the way to/from your workplace | ( ) | ( ) | ( ) | ( ) | ( ) |

## Household and Demographic Characteristics

In this final section, we will be asking some questions about you and your household so we can learn more about the characteristics of electric car adopters in New York. The information you provide will be **kept private** to the extent permitted by law. The analysis will only use summary level data; no individual respondents will be identified.

26) Do you own or rent your residence?*

( ) Own

( ) Rent

( ) Neither rent nor own

( ) Prefer not to answer

27) What type of residence do you live in?*

( ) Detached house (single family home)

( ) Attached house (e.g., townhome, duplex, triplex)

( ) Apartment/condominium

( ) Other, please specify:_____*

( ) Prefer not to answer

28) Do you have solar panels at your residence?

( ) Yes, I have solar panels installed

( ) No, but I am considering installing them

( ) No, and I have no plans to install them

29) How many people live in your household, including yourself?

( ) 1

( ) 2

( ) 3

( ) 4

( ) 5

( ) 6

( ) 7

( ) 8

( ) 9 or more

30) How many licensed drivers live in your household, including yourself?

( ) 1

( ) 2

( ) 3

( ) 4

( ) 5

( ) 6

( ) 7

( ) 8

( ) 9 or more

## Household and Demographic Characteristics

31) What is your age?*

( ) 16–20

( ) 21–29

( ) 30–39

( ) 40–49

( ) 50–59

( ) 60–69

( ) 70–79

( ) 80+

( ) Prefer not to answer

32) What is your gender?*

( ) Female

( ) Male

( ) Non-binary/third gender

( ) Prefer to self-describe:_____

( ) Prefer not to answer

33) What is the highest level of education you have completed?*

( ) High school graduate or less

( ) Some college, no degree

( ) Associate degree

( ) Bachelor's degree

( ) Graduate degree

( ) Prefer not to answer

34) What is your current annual gross household income from all sources (i.e. before taxes)?*

( ) Less than $25,000

( ) $25,000 to $49,999

( ) $50,000 to $74,999

( ) $75,000 to $99,999

( ) $100,000 to $149,999

( ) $150,000 to $199,999

( ) $200,000 to $299,999

( ) $300,000 to $399,999

( ) $400,000 or more

( ) Prefer not to answer

35) Are you Hispanic or Latino/a?*

( ) Yes

( ) No

( ) Prefer not to answer

36) How do you prefer to describe your racial/ethnic identity? [select all that apply]*

[ ] Black or African American

[ ] East Asian

[ ] Middle Eastern or North African

[ ] Native American or Alaska Native

[ ] Native Hawaiian or Pacific Islander

[ ] South Asian

[ ] Southeast Asian

[ ] White or Caucasian

[ ] Other, please specify: _____*

[ ] Prefer not to answer

## Other Comments

Please be sure to click "Submit" at the bottom of the page to complete the survey.

37) What has been the best part of your experience purchasing or leasing an electric car?

_____

_____

_____

_____

38) Please share any feedback about how the Drive Clean Rebate could be improved in the box below.

_____

_____

_____

_____

39) Please share any additional comments about your electric car experience or this survey in the box below.

_____

_____

_____

_____

**Page entry logic:** This page will show when: #1 Question "According to our records, you received a rebate for a [contact("nymake")] [contact("nymodel")]. Is this car used primarily for personal use?" is one of the following answers ("No, this car is primarily for commercial/organizational use")

## Disqualification (commercial vehicle)

Unfortunately, you do not qualify for this survey at this time. You indicated that the car associated with your survey invitation is not being used primarily as a private car.

However, we welcome you to provide any feedback you have about the Drive Clean Rebate in the comment box below.

If you have any questions, please email NYDriveClean@energycenter.org. We thank you for your time and appreciate your interest.

40) Please share any comments in the box below.

_____

_____

_____

_____

**Page entry logic:** This page will show when: #1 Question "According to our records, you received a rebate for a [contact("nymake")] [contact("nymodel")]. Is this car used primarily for personal use?" is one of the following answers ("My rebate is for a different car")

## Disqualification (different vehicle)

Unfortunately, you do not qualify for this survey at this time. You indicated that the car associated with your survey invitation is a different car than the one for which you are receiving this rebate.

However, we welcome you to provide any feedback you have about the Drive Clean Rebate in the comment box below.

If you wish to take the survey for another private car receiving a rebate, please look for the survey invitation associated with that car, or email NYDriveClean@energycenter.org with any questions.

41) Please share any comments in the box below.

_____

_____

_____

_____

**Page entry logic:** This page will show when: #2 Question "Are you the primary driver of this [contact("nymake")] [contact("nymodel")]?" is one of the following answers ("No")

## Disqualification (primary driver)

Unfortunately, you do not qualify for this survey at this time. You indicated that you are not the primary driver of the rebated car.

However, we welcome you to provide any feedback you have about the Drive Clean Rebate in the comment box below.

If you have any questions, please email NYDriveClean@energycenter.org. We thank you for your time and appreciate your interest.

42) Please share any comments in the box below.

_____

_____

_____

_____

# Thank You!

Thank You!

Thank you for your participation in this survey. Your feedback is greatly appreciated and will help inform and support the development of electric car markets in New York. If you have any questions about this research project, you may contact the Center for Sustainable Energy (CSE), the Drive Clean Rebate Program Administrator for NYSERDA, at:

Phone: (866) 595-7917
Email: NYDriveClean@energycenter.org

# Endnotes

[1] Excludes businesses and government entities.

[2] Raking, also known as iterative proportional fitting, is a technique used to match distributions from a sample to the known distributions of the broader population.

[3] Fuel type abbreviations are: Conventional Hybrid EV (CHEV), Fuel-Cell Electric Vehicles (FCEVs), Compressed Natural Gas (CNG).

[4] ICEV is an acronym for an Internal Combustion Engine vehicle i.e., a conventional gasoline vehicle.

[5] The interim criteria identified for a disadvantaged community as defined by New York State. https://www.nyserda.ny.gov/ny/disadvantaged-communities

NYSERDA, a public benefit corporation, offers objective information and analysis, innovative programs, technical expertise, and support to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels. NYSERDA professionals work to protect the environment and create clean-energy jobs. NYSERDA has been developing partnerships to advance innovative energy solutions in New York State since 1975.

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