NYSERDA Drive Clean Rebate Ownership Survey - 2023 Results

Final Report

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Abstract

This report summarizes the results of a survey collected from individual rebate recipients approximately one year after adopting an electric car through the NYSERDA Drive Clean Rebate Program. Results reported represent rebate recipients who acquired their electric car between January 1, 2023 and December 31, 2023. The program offered point-of-sale rebates on new car purchases and leases for eligible electric cars.

Survey results are grouped by technology type, i.e., plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs). Results summarize demographics that include homeowners versus renters, residence type, gender, age, income and racial/ethnic identity. Results also summarize electric car driving patterns, charging behaviors and electric car ownership challenges.

Results from the Ownership Survey showed high levels of satisfaction with owning an electric car. The most commonly reported concerns were charging infrastructure, speed of charging, and vehicle range limitations. Similar to the 2021 and 2022 Ownership Survey results, BEV respondents were charging their cars at home less frequently and were more likely to use public chargers compared to PHEV respondents

Keywords

Electric cars, plug-in electric hybrid vehicles (PHEVs), battery electric vehicles (BEVs), Drive Clean Rebate Program, point-of-sale rebates, rebate importance, Rebate Essentiality, auto dealers, electric car adoption

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Acronyms and Abbreviations

BEV	battery electric vehicle
CSE	Center for Sustainable Energy
NYSERDA	New York State Energy Research and Development Authority
PHEV	plug-in hybrid electric vehicle

Executive Summary

NYSERDA's Drive Clean Rebate Program provides point-of-sale rebates to consumers who purchase or lease eligible new electric cars, including plug-in hybrid (PHEVs) and battery electric vehicles (BEVs). The program launched in March 2017, administered by the Center for Sustainable Energy (CSE). Individual participants are invited to take an Ownership Survey approximately one year after acquiring their car. The survey asks about ownership experience and what could make electric car ownership more attractive. This report summarizes findings for rebated vehicles purchased between January 1, 2023 and December 31, 2023.

A total of 46,497 individual participants received a rebate for vehicles purchased during this time and were invited to complete the survey. Of these, 6,615 completed the survey, with a response rate of 14%. Seventy-one respondents were disqualified because they no longer own the electric car that they were incentivized for. Two responses were removed due to missing information in one of the strata used to weight. In total, 73 responses were removed from the analysis. After eliminating these responses, a total of 6,542 (14%) valid responses remained and were analyzed in this report. To better represent the larger population of individual participants, survey data were then weighted; key findings include the following:

- Respondents have driven an average[1] of 10,606 miles for PHEVs and 12,056 miles for BEVs.
- Typical vehicle uses[2] include running errands (90%) and commuting (73%).
- Respondents are satisfied with their electric cars:
  - 80% are "very" or "extremely" satisfied with their ownership experience.
  - 79% would "probably" or "definitely" recommend electric car ownership to others.

Despite the high levels of overall satisfaction reported by respondents, challenges remain.

- Respondents have concerns about the availability of public charging infrastructure:
  - "Access to public charging stations" and "Range limitations" were two of the top three challenges of owning an electric car (55% of respondents each), and 70% disagreed with the statement "there are enough public chargers."
  - 43% of respondents agreed with the statement "Public charging stations are often in use by others when I want to charge."
- Concerns with vehicle performance in cold weather remain at similar levels as the last edition of the report:
  - 33% of BEV respondents selected this as one of their top three challenges (a 1% decrease relative to the last report).
  - Among PHEV respondents, this percentage remained steady at 29%.

- Charging behavior of both BEV and PHEV respondents remains consistent with the 2022 Ownership Survey Results:
    - The percentage of BEV and PHEV respondents who charge at home daily decreased, from 38% to 37% for BEV respondents and 67% to 56% for PHEV respondents.
    - The percentage of BEV respondents who never use public chargers increased slightly from 22% to 23%.
    - The percentage of PHEV respondents who never use public chargers increased from 54% to 60%.

1 Introduction

NYSERDA's Drive Clean Rebate Program provides point-of-sale rebates to consumers who purchase or lease eligible new BEVs or PHEVs. Hydrogen fuel-cell electric cars will be eligible when available in New York State.

The program launched in March 2017 and is administered by CSE. Individual participants[3] are invited to take two voluntary surveys designed to help researchers understand owner experience and behavior better. The first is shared with participants two weeks after the rebate is approved and is referred to as the Adoption Survey. This report summarizes findings from the second survey—the Ownership Survey—designed to more fully comprehend rebated electric car ownership experiences in New York and identify ways to make ownership attractive and sustainable.

1.1 Administration Details

The Drive Clean Rebate Ownership Survey is administered on a quarterly basis. Individual participants receive a survey invitation by email approximately one year after they acquired their car.[4] The participants included in this analysis purchased or leased electric cars between January 1, 2023 and December 31, 2023 (Table 1). A total of 46,497 participants received a rebate for cars acquired during this window and were invited to take the survey.

Table 1. 2023 Drive Clean Rebate Ownership Survey

Details	Date Ranges
Survey Administration Dates	February 13, 2024 – December 2, 2024
Responses Received	February 13, 2024 – January 19, 2025
Rebate Application Approval Dates[a]	January 11, 2023 – October 11, 2024
Vehicle Purchase/Lease Dates[b]	January 2, 2023 – December 31, 2023

[a] Of the survey sample. Note that the last rebate approval date occurs more than ten months after the last vehicle purchase in this data set. While dealers are required to submit applications within 90 days of the date of sale, NYSERDA occasionally grants exceptions so that dealers can submit applications outside of this eligibility window.

[b] Of the survey sample. Individual participants who acquired a vehicle on January 1, 2023 did not respond to the Ownership Survey.

Of those invited to take the survey, 6,615 responded, resulting in a response rate of 14%. These respondents completed the survey between February 13, 2024 and January 19, 2025. Seventy-one

respondents were disqualified because they no longer own the electric car that they were incentivized for. Two responses had missing information in one of the strata used to weight. After eliminating these responses, a total of 6,542 valid responses remained and were analyzed in this report (14% response rate).

1.2 Representativeness and Weighting

Since the Ownership Survey is voluntary and not everyone chooses to complete it, responses may not be representative of the entire Drive Clean Rebate participant population. However, using application information available for all individual participants, response weights were created to compensate for over- or under-representation among various groups.[5] The dimensions used for weighting were car model, purchase versus lease, county, and technology type (BEV versus PHEV). The weights were calculated using iterative proportional fitting, or the raking method.[6] In this report, responses are segmented by technology type when the differences between these two are statistically significant.[7] Rao-Scott adjusted Pearson's Chi-square testing with weighted data was used to test for differences between PHEV and BEV respondents.[8] A summary of the participant population represented, survey sample size, and weighting method and dimensions can be found in Table 2.

Table 2. 2023 Drive Clean Rebate Ownership Survey Sample Size And Representativeness

Details	Sample Size and Representativeness
Program Participant Population	N = 46,446[a]
Responses in Data Set	n = 6,542 (14%)
Weighting Method	Iterative Proportional Fitting (Raking)
Representative Dimensions	Car Model, Purchase vs. Lease, County, Technology Type

[a] 51 rebate recipients were excluded from the program population of 46,497 because no corresponding survey response was represented in one or more of the strata used to weight (46 responses) or had missing information in one or more of the strata used to weight (5 responses).

Frequencies shown in figures throughout this report have been made proportionate based on the applied weights. In other words, all "%" results given below are proportionately weighted.

2 Results

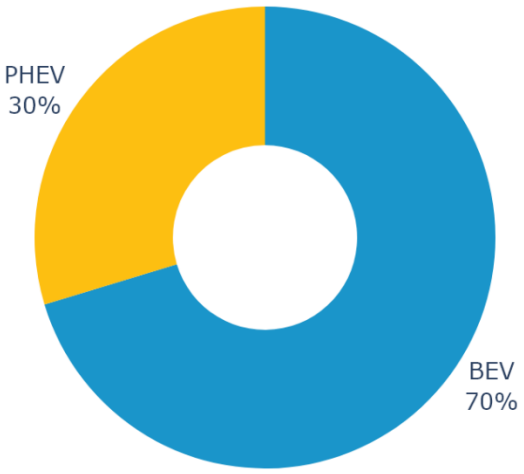
Please note, all frequencies and percentages given below are proportionately weighted.

2.1 Technology Types

Figure 1 shows the distribution of survey responses by rebated electric car type; 70% of the survey responses collected were from respondents who were rebated for a BEV and 30% were from respondents who were rebated for a PHEV. These percentages align with the proportion of rebates going to these technology types during the reporting period. BEV participation in the program decreased slightly from last year's results (70% vs 73% in the 2022 Ownership Survey) but still accounts for a majority of rebates compared to the first few years of program inception. BEVs accounted for 58% of rebates in the 2021 Ownership Survey, 69% of rebates in the 2020 Ownership Survey, 44% in the 2018-2019 Ownership Survey, and 28% of participants in the 2017-2018 Ownership Survey.

Figure 1. Survey Responses By Technology Type

(n = 6,542)



2.2 Car Status

All but 71 respondents (1.1% of the 6,615 respondents) said their household still had the rebated electric car. Forty-two respondents reported that their household now has a different electric car, and the remaining 29 respondents said they no longer own any electric car. Of the 29 who no longer had the rebated car, 17 sold or traded it in, two donated or gave the car to someone else, six had their electric car

damaged or stolen, and four selected "other". The exact question wording can be found in the Appendix A. Ownership Survey Questionnaire.

2.3 Demographics and Housing Characteristics

Table 3 compares survey respondents with new car buyers in the state of New York, based on data from the Strategic Vision New Vehicle Experience Survey (NVES).[9]

Table 3. Comparison Of Survey Respondents With New Car Buyers In New York State

Characteristic	Drive Clean Survey Respondents	New Car Buyers in New York (NVES 2022)[10]
Male	74%	55%
Selected Solely White/Caucasian	66%	76%
40+ Years Old	76%	76%
Bachelor's Degree or Higher	75%	64%
Family Income $100,000+	73%	55%[a]
Own Home	83%	77%
Male	74%	55%

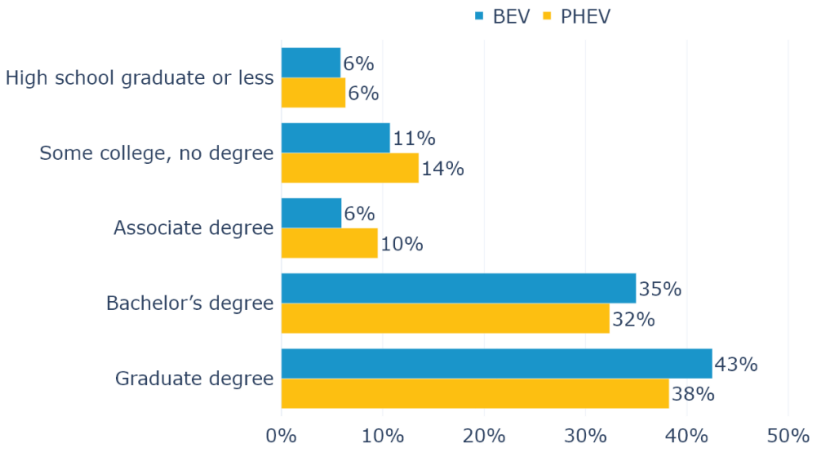
[a] NVES represents income > $100k (not ≥).

Table 3 provides some context when interpreting the data from survey respondents, shown in greater detail below. This is because new car buyers—rather than the population of New York State in general as a whole—are a more appropriate basis for comparison. Survey results indicate that program participants more frequently identify as a male, have college degrees, have higher incomes, and likelier to own a home than average new car buyers in the state.

Seventy-five percent (75%) of respondents have at least a bachelor's degree (relative to 64% of new car buyers). Figure 2 shows significant education differences between BEV and PHEV respondents, with BEV respondents more likely to have a bachelor's degree or higher.

Figure 2. Highest Level Of Education Completed By Technology Type

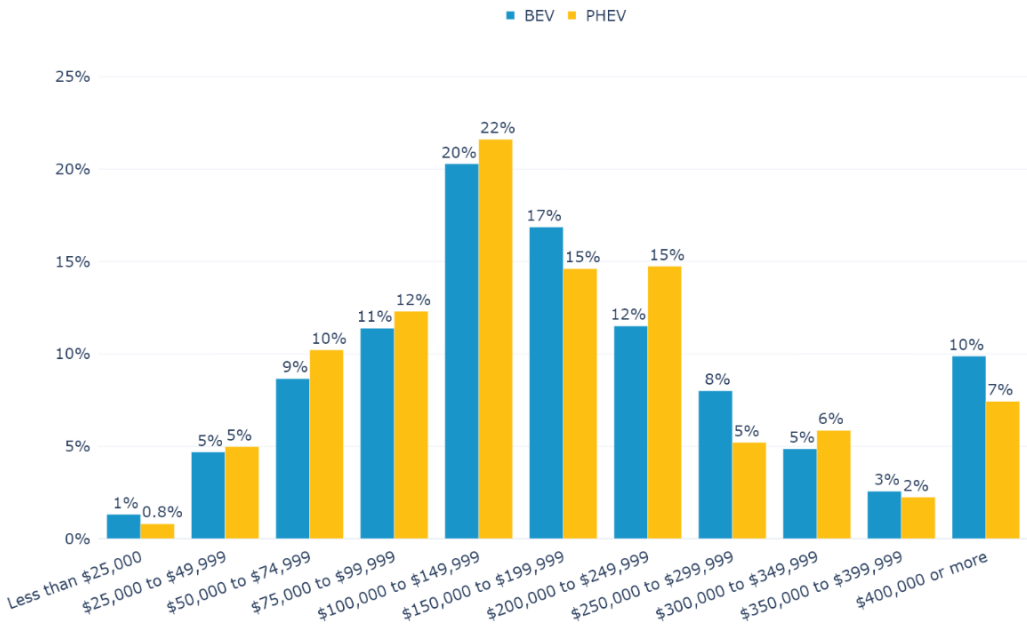
Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 42$, $p < 0.01$, n = 6,228).



Seventy-three percent (73%) of respondents have an annual household income of $100,000 or more compared to 55% of new car buyers in New York State. Figure 3 shows that there were also significant differences in income between BEV and PHEV respondents, with BEV respondents more likely to report annual household incomes of $400,000 or more.

Figure 3. Annual Gross Household Income From All Sources By Technology Type

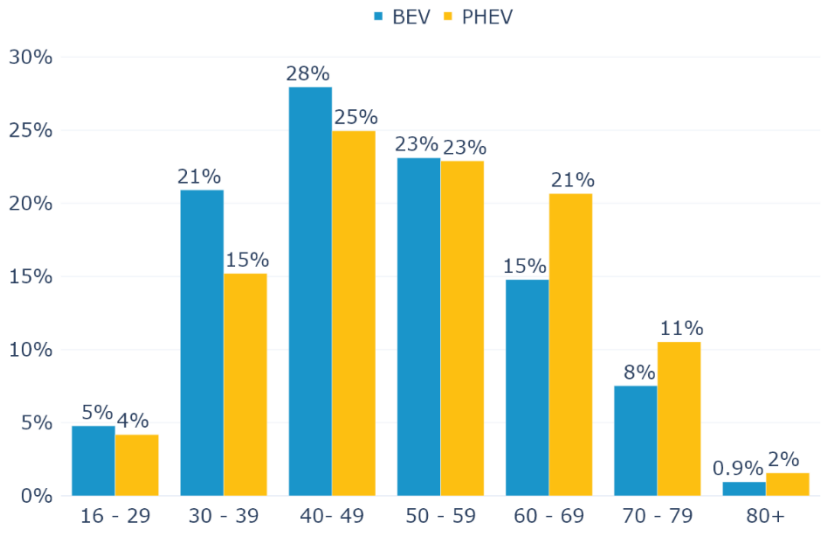
Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 42$, $p < 0.01$, n = 5,382).



Seventy-six percent (76%) of rebate recipients are 40 years old or older, aligning with the proportion of new car buyers overall. Figure 4 shows significant age differences between BEV and PHEV respondents, with BEV respondents being younger than PHEV respondents.

Figure 4. Age By Technology Type

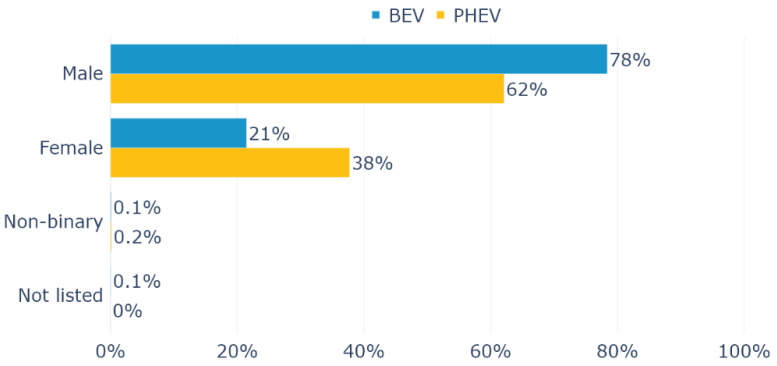
Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 78$, $p < 0.01$, $n = 6{,}330$).



While new car buyers in New York State are nearly evenly split between male and female (55% male), survey respondents were 74% male, similar to last year's result of 71%. Figure 5 shows that females make up a larger portion of PHEV respondents than BEV respondents (38% versus 21%, respectively). The 21% share of female BEV respondents is slightly lower than the last couple years (24% in the 2022 and 2021 Ownership Survey) but represents an increase compared to the years prior (18% in the 2018-2019 Ownership Survey and 19% in the 2020 Ownership Survey).

Figure 5. Gender By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 180$, $p < 0.01$, $n = 6{,}268$).



Most survey respondents identify as White or Caucasian (which Table 3 above shows is less than new car buyers overall, 66% versus 76%). A higher percentage of PHEV respondents identified as White or Caucasian. Nine percent (9%) of respondents identify as "Latino/a or Hispanic", and this is one percentage point lower than last year's result of 8% (not provided in a visual).

Figure 6. Responses To "How Do You Prefer To Describe Your Racial/Ethnic Identity?" By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 334$, $p < 0.01$, $n = 5{,}392$). Note: Respondents can select all that apply for this question. Any respondent who selected two or more races is included in "More than one race".

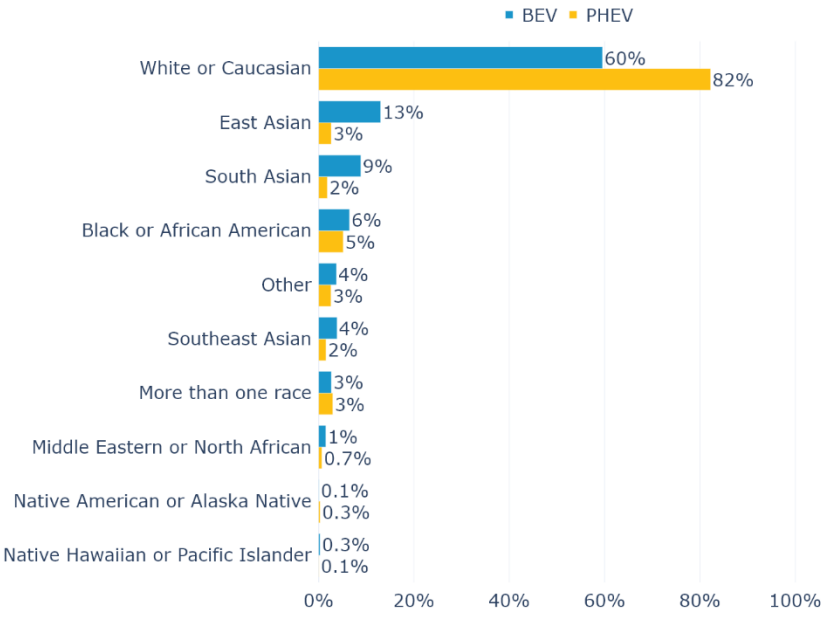


Figure 7 shows that most respondents own their residence. Compared to Table 3 above, respondents were more likely to be homeowners than the average new car buyer (83% versus 77%, respectively). Furthermore, Figure 8 shows that most respondents (73% overall) live in detached houses.

Figure 7. Responses To "Do You Own Or Rent Your Residence?" By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 9$, $p < 0.01$, $n = 6{,}279$).

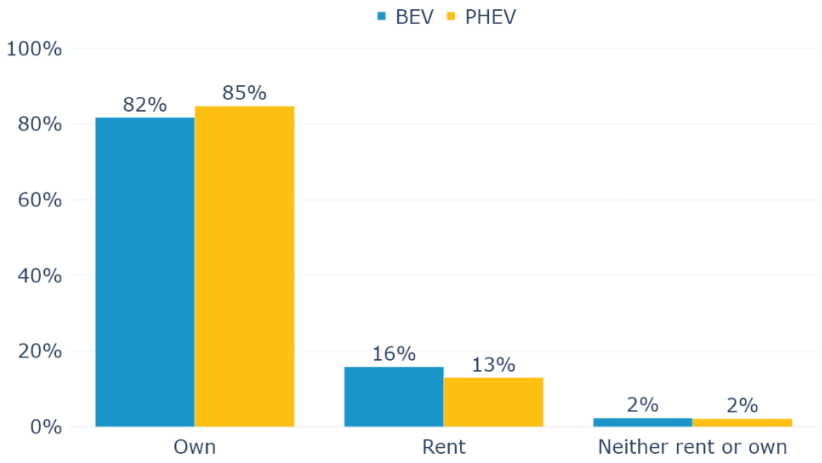
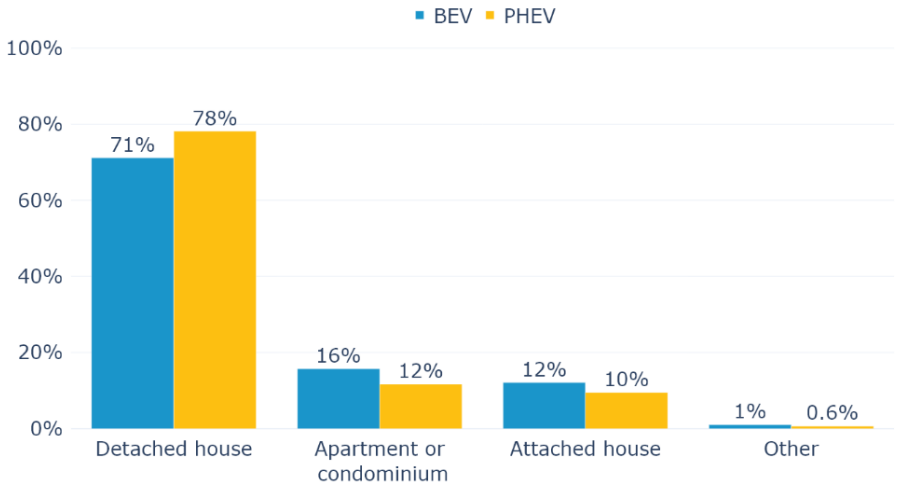


Figure 8. Responses To "What Type Of Residence Do You Live In?" By Technology Type

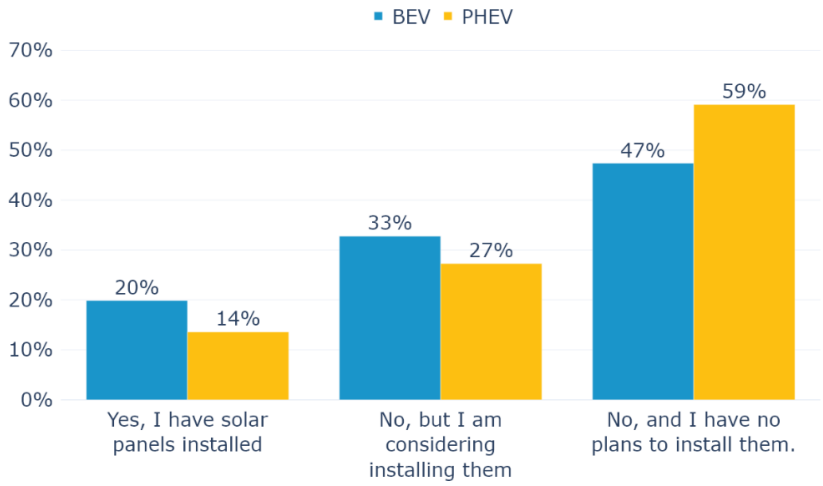
Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 33$, $p < 0.01$, $n = 6{,}309$).



Overall, 18% of respondents own solar panels (Figure 9), with BEV respondents more likely than PHEV respondents to have solar panels installed at their residence (20% versus 14%, respectively).

Figure 9. Responses To "Do You Have Solar Panels At Your Residence?" By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 80$, $p < 0.01$, $n = 6{,}511$).



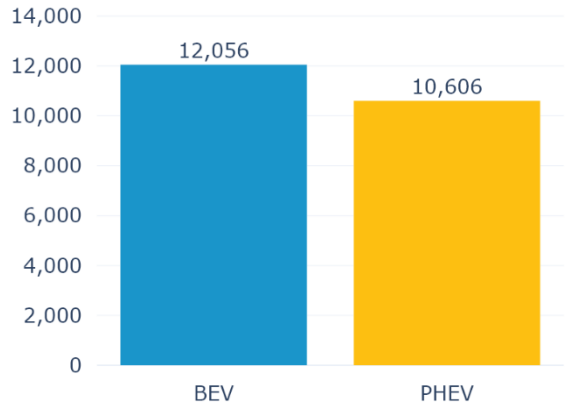
2.4 Electric Car Driving

Respondents were asked how many miles they drive their electric car per day and the total miles they've driven since acquiring their car. Total miles driven should approximate the respondent's annual mileage since they have owned the car for about one year. BEV respondents averaged 41 miles driven per day, while PHEV respondents averaged 30 miles.[11]

When asked how many total miles they have driven so far, BEV respondents averaged 1,450 miles more than PHEV respondents as shown in Figure 10. Despite the difference in miles driven, there was no significant difference between BEV and PHEV respondents. Total miles driven for BEVs decreased slightly relative to last year's result (12,056 miles vs 12,248 miles in the 2022 Ownership Survey), while total miles driven for PHEVs decreased compared last year's results (from 12,080 to 10,606 miles).

Figure 10. Average Of Responses To "How Many Total Miles Have You Driven Your Electric Car So Far?" By Technology Type

(n = 6,004)



Respondents were asked how often they use their electric car for a variety of tasks. Seventy-three percent (73%) of respondents reported using their car at least a few times a week for their commute (Figure 11). Thirty-one percent (31%) of respondents reported using their car at least a few times a week for partial commute (Figure 12). Most respondents (89%) reported using their car at least a few times a week to run errands (Figure 13).

Figure 11. Frequency Of Full Commute By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 11$, $p < 0.03$, $n = 5,744$).

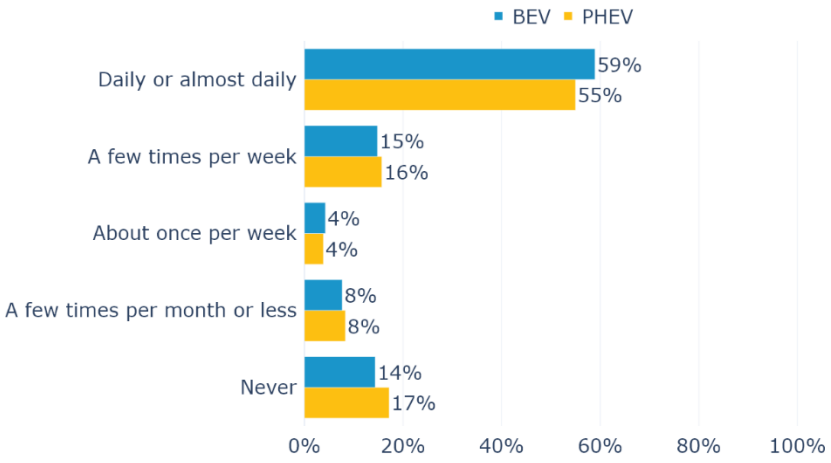


Figure 12. Frequency Of Partial Commute By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 41$, $p < 0.01$, $n = 4{,}974$).

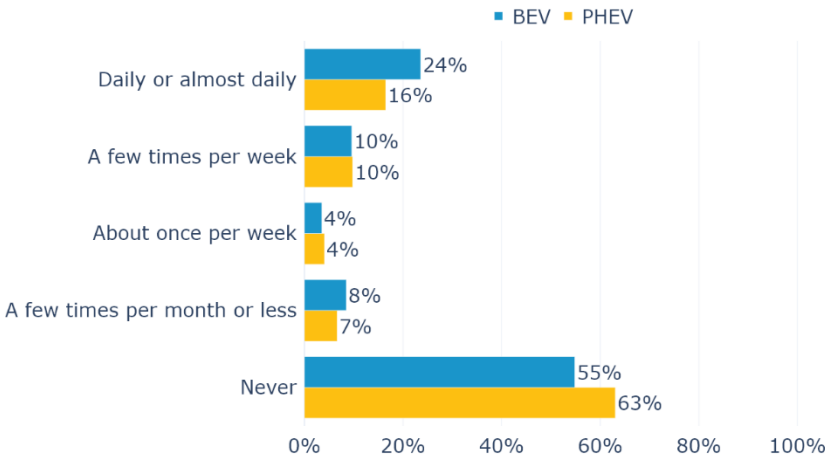


Figure 13. Frequency Of Running Errands By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 19$, $p < 0.01$, $n = 6{,}441$).

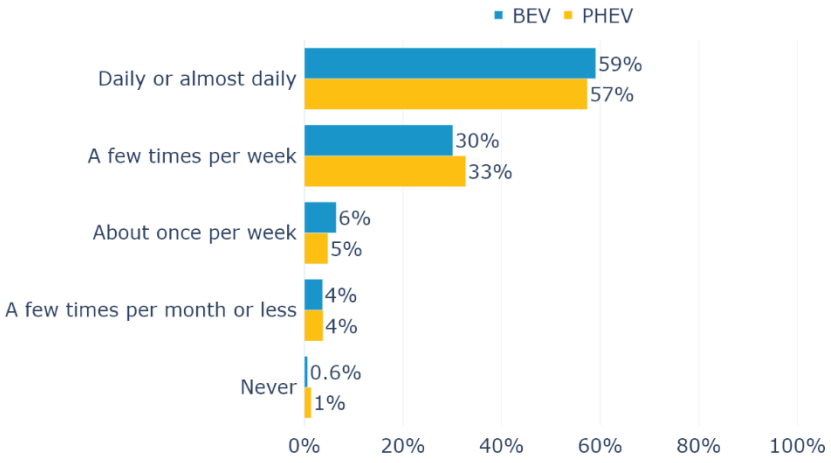


Figure 14 shows how often respondents use their BEV or PHEV for long trips (greater than 50 miles from home). Sixty-two (62%) of respondents use their car a few times a month or less for a long trip. The percentage of BEV respondents reporting never using their cars for long trips increased slightly from 6% in last year's result to 8%, but remains steady compared to prior years (7% in the 2021 survey results, 5% in the 2020 survey results). When BEV and PHEV respondents were asked about the frequency of car use

to provide ride-sharing services, 88% of respondents reported they never used their electric car for this task (Figure 15).

Figure 14. Frequency Of Long Trips (>50 Miles From Home) By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 66$, $p < 0.01$, $n = 6{,}374$).

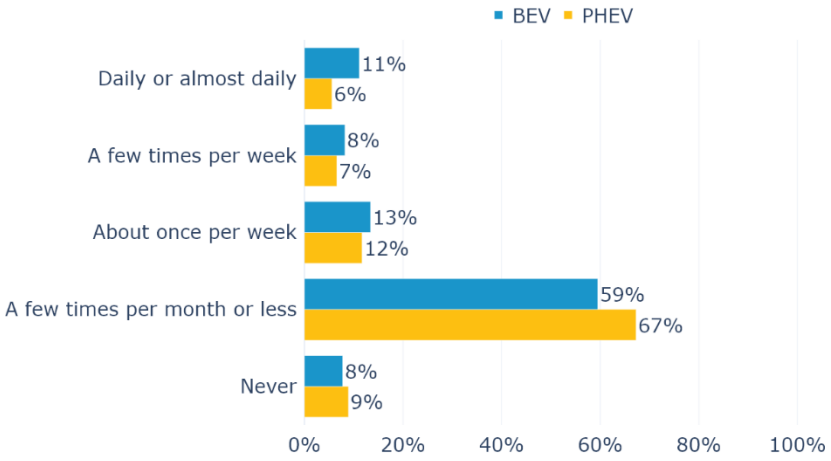
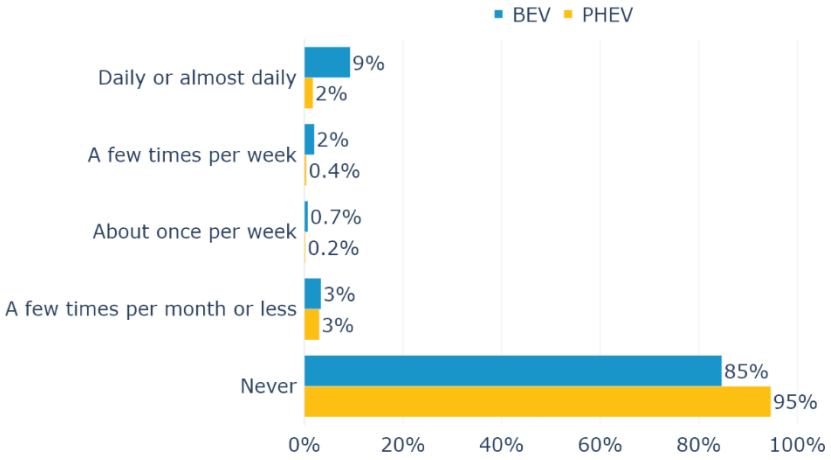


Figure 15. Frequency Of Providing Ride-Sharing Services (E.G., Uber/Lyft) By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 128$, $p < 0.01$, $n = 5{,}442$).

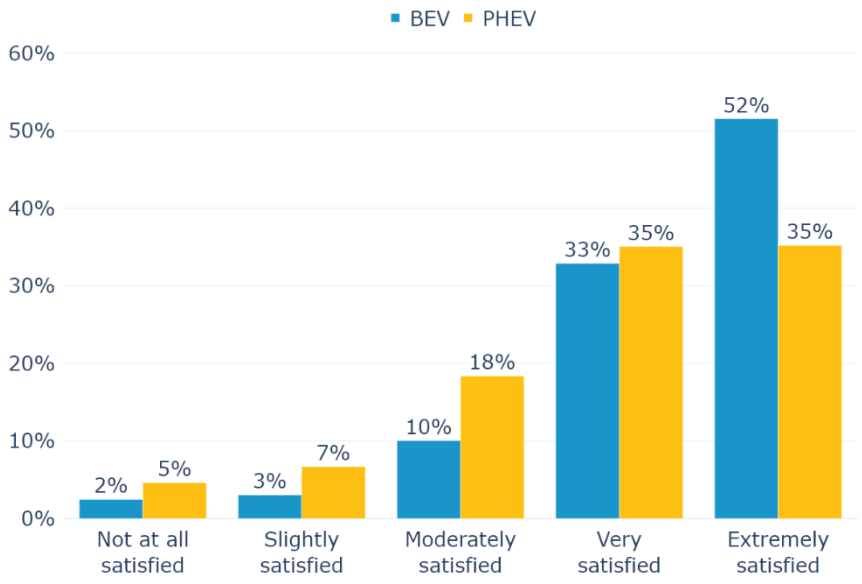


2.5 Ownership Satisfaction

Respondents were asked how satisfied they were with the experience of owning an electric car. Overall, 80% of respondents rated their satisfaction as “Very satisfied” or “Extremely satisfied” (Figure 16), which is a decrease from 89% last year. Three percent (3%) of respondents described themselves as “Not at all satisfied”, which is a slight increase from the previous year of 1%.

Figure 16. Participant Satisfaction By Technology Type

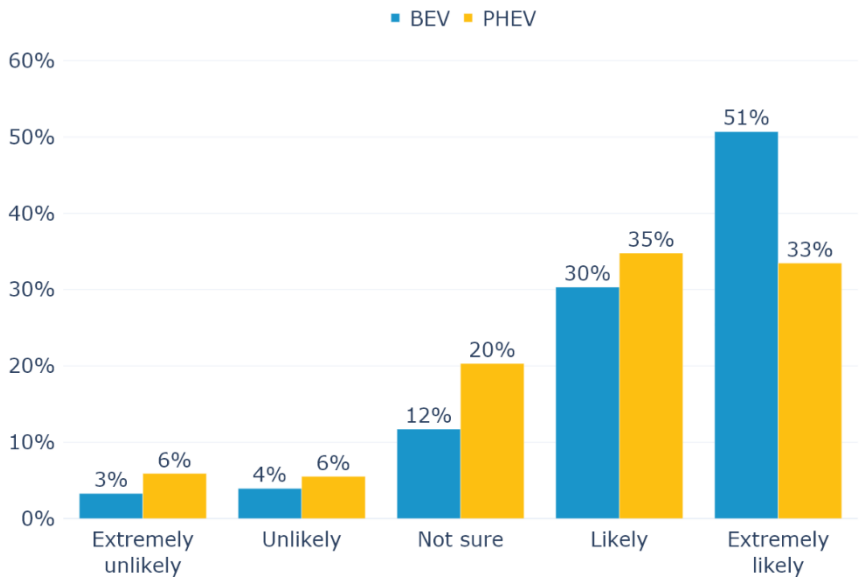
Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 219$, $p < 0.01$, $n = 6,499$).



Respondents were also asked how likely they were to purchase an electric car again. Overall, 77% said they are likely or extremely likely to repeat an electric car purchase. Figure 17 displays the breakdown between BEV and PHEV respondents.

Figure 17. Responses To "How Likely Are You To Purchase/Lease Another Electric Car In The Future?" By Technology Type

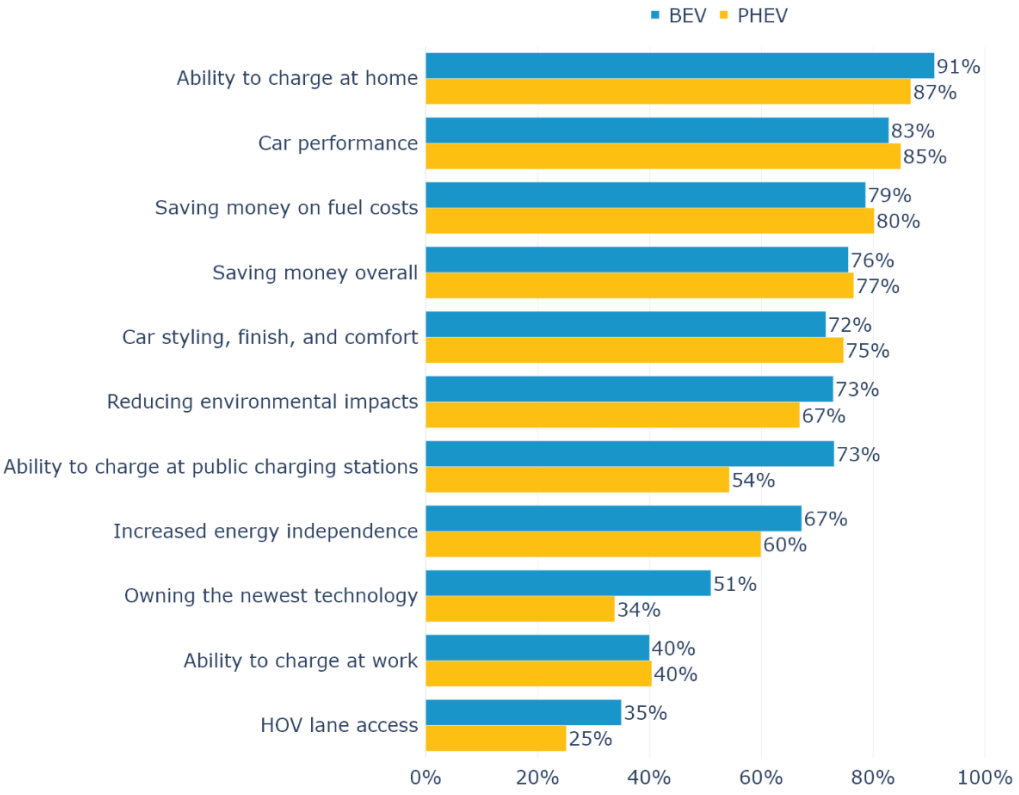
Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 199$, $p < 0.01$, $n = 6{,}526$).



Respondents were asked to rate the importance of various aspects of owning an electric car, from "Not at all important" to "Extremely important." Figure 18 shows the proportion of respondents who rated each factor "Very" or "Extremely Important." Across all respondents, the most important factors were "Ability to charge at home", "Car performance", and "Saving money on fuel costs". The importance of "Reducing environmental impacts" did not rank among the top three reasons for owning an electric car for a third year, indicating a potential shift from early adopters to a more mature market.

Figure 18. Important Aspects Of Electric Car Ownership By Technology Type (Percent Responding "Very" Or "Extremely Important")

Responses from PHEV and BEV consumers are significantly different for ability to charge at home (chi-squared test: $\chi 2 = 50$, $p < 0.01$, $n = 6{,}514$), car performance (chi-squared test: $\chi 2 = 10$, $p < 0.04$, $n = 6{,}510$), saving money on fuel costs (chi-squared test: $\chi 2 = 10$, $p < 0.04$, $n = 6{,}503$), car styling, finish, and comfort (chi-squared test: $\chi 2 = 16$, $p < 0.01$, $n = 6{,}510$), reducing environmental impacts (chi-squared test: $\chi 2 = 39$, $p < 0.01$, $n = 6{,}512$), ability to charge at public charging stations (chi-squared test: $\chi 2 = 343$, $p < 0.01$, $n = 6{,}510$), increased energy independence (chi-squared test: $\chi 2 = 56$, $p < 0.01$, $n = 6{,}503$), owning the newest technology (chi-squared test: $\chi 2 = 231$, $p < 0.01$, $n = 6{,}506$), and HOV lane access (chi-squared test: $\chi 2 = 131$, $p < 0.01$, $n = 6{,}501$). There was no significant difference for saving money overall ($n = 6{,}504$) and ability to charge at work ($n = 6{,}484$).



2.6 Program Performance

Survey respondents were very likely to be electric car promoters with 79% reporting that they would "probably" (30%) or "definitely" (49%) recommend electric car ownership to others. BEV respondents were more likely than PHEV respondents to indicate that they would "definitely" recommend electric car ownership (Figure 19). Across all respondents, 47% have had at least one family member or friend purchase an electric car since their own acquisition of an electric car. Figure 20 shows that BEV

respondents were more likely than PHEV respondents to report that a friend or family member had purchased an electric car.

Figure 19. Respondents Who Would Recommend Electric Car Ownership To Others By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 323$, $p < 0.01$, $n = 6{,}522$).

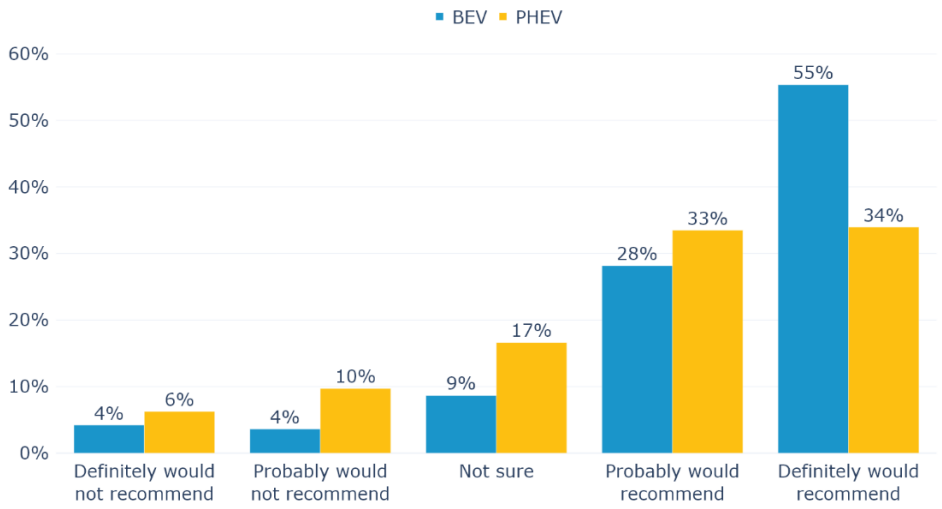
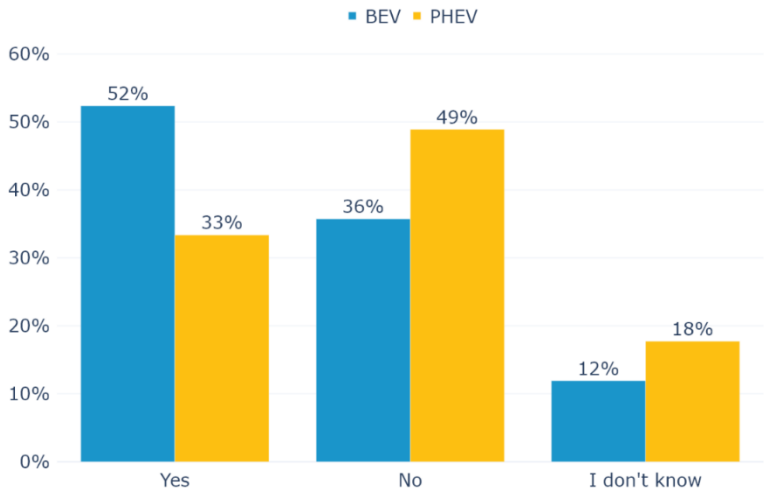


Figure 20. Respondents Whose Friends Or Family Purchased/Leased An Electric Car Since The Purchase Of Their Electric Car By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 199$, $p < 0.01$, $n = 6{,}532$).

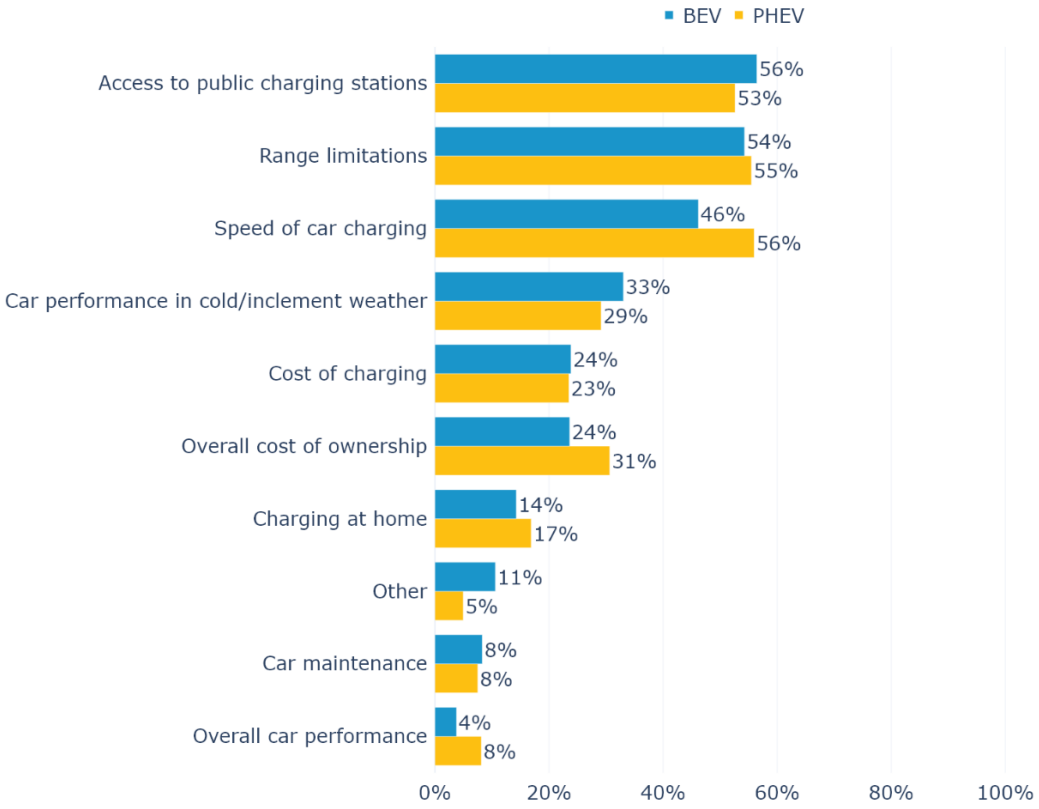


2.7 Participant Challenges

To understand the program participants' challenges, respondents were asked to select "the three greatest challenges to owning an electric car in New York" from a list of possible options. The challenges most frequently selected by respondents were "Access to public charging stations", "Range limitations", and "Speed of car charging" (Figure 21). PHEV respondents were more likely than BEV respondents to find the speed of car charging a challenging aspect of owning an electric car.

Figure 21. Greatest Challenges Of Owning An Electric Car In New York State By Technology Type

Responses from PHEV and BEV consumers are significantly different for access to public charging stations (chi-squared test: $\chi2 = 8$, $p < 0.01$, $n = 6,476$), speed of car charging (chi-squared test: $\chi2 = 51$, $p < 0.01$, $n = 6,476$), car performance in cold/inclement weather (chi-squared test: $\chi2 = 9$, $p < 0.01$, $n = 6,476$), overall cost of ownership (chi-squared test: $\chi2 = 35$, $p < 0.01$, $n = 6,476$), charging at home (chi-squared test: $\chi2 = 7$, $p < 0.01$, $n = 6,476$), other (chi-squared test: $\chi2 = 52$, $p < 0.01$, $n = 6,476$), and overall car performance (chi-squared test: $\chi2 = 52$, $p < 0.01$, $n = 6,476$). There was no significant difference for range limitations ($n = 6,476$), cost of charging ($n = 6,476$), and car maintenance ($n = 6,476$).



2.8 Charging

Twenty-two (22%) of respondents indicated they have access to charging to at their workplace, and Figure 22 shows the distribution between respondents that can charge for free and those that must pay to charge. Figure 23 shows that of the respondents who do have access to workplace charging, 69% of BEV respondents and 74% of PHEV respondents charge at work at least occasionally (did not select "Never").

Figure 22. Responses To "Do You Have Access To Charging At Your Place Of Work?"

Responses from BEV and PHEV consumers are not significantly different (n = 5,482).

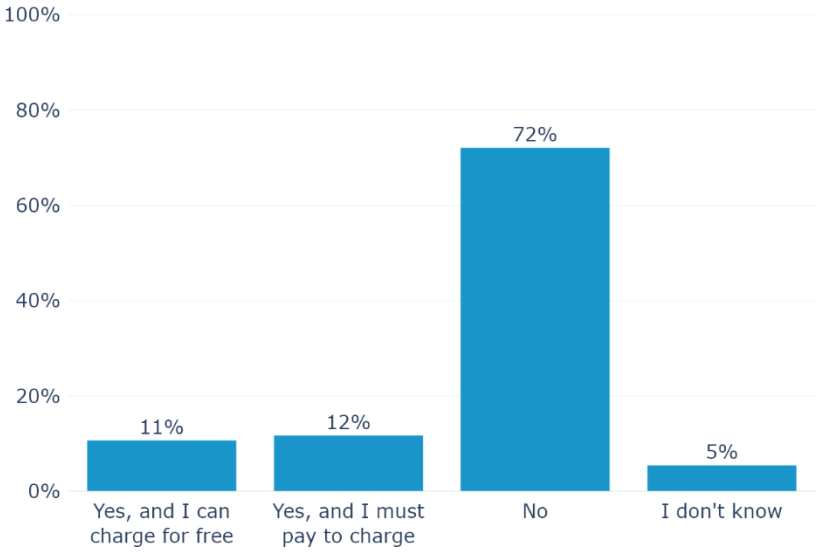


Figure 23. Frequency Of Charging At Given Locations By Technology Type

Responses from PHEV and BEV consumers are significantly different for home (chi-squared test: $\chi2 = 316$, $p < 0.01$, $n = 6,491$), on-site at work (chi-squared test: $\chi2 = 25$, $p < 0.01$, $n = 1,212$), off-site at work (chi-squared test: $\chi2 = 21$, $p < 0.01$, $n = 4,753$), public charging (chi-squared test: $\chi2 = 844$, $p < 0.01$, $n = 6,429$), and other (chi-squared test: $\chi2 = 146$, $p < 0.01$, $n = 5,672$).

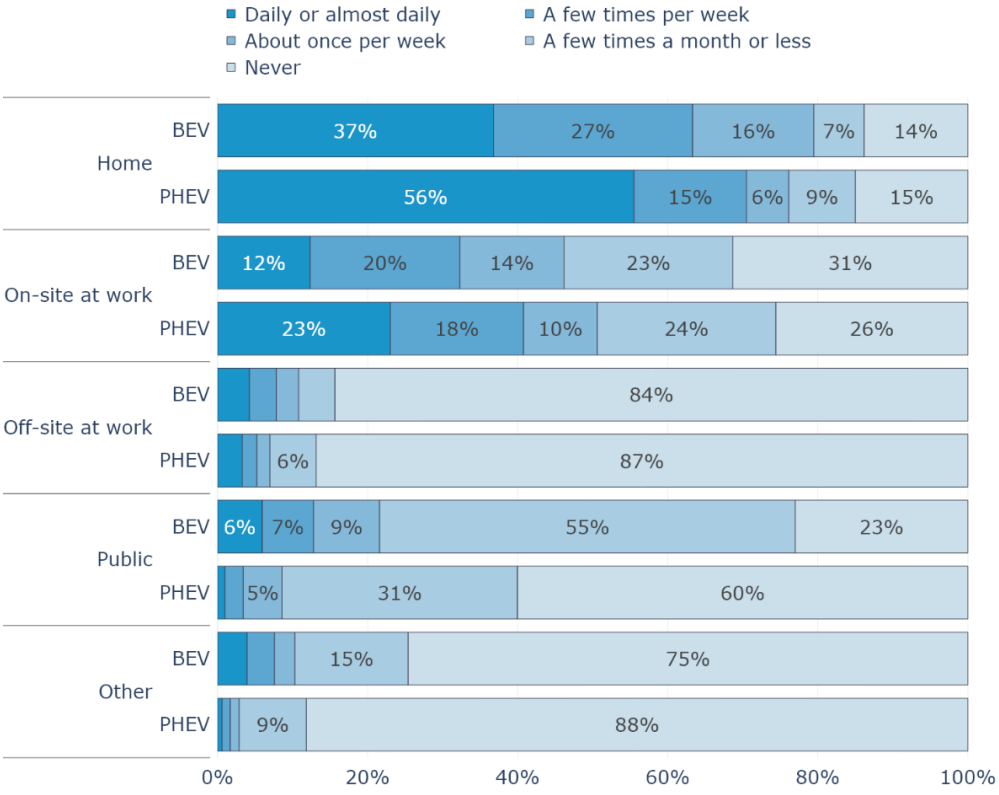
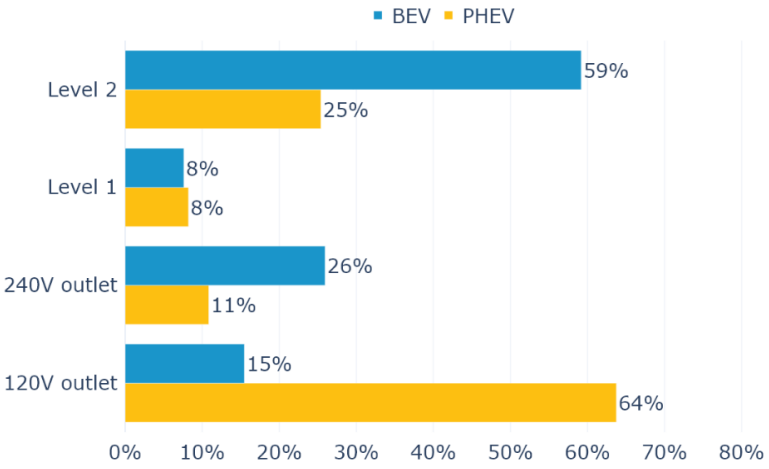


Figure 23 shows that almost all respondents charge their electric car at home, with only 14% of BEV and 15% of PHEV respondents stating they never charge at home. The share of BEV respondents who charge at home a few times per week or daily or almost daily was 64%, slightly lower than last year's survey results of 66%. PHEV respondents who charge at home daily or almost daily decreased compared to last year's survey results (56% versus 67%). BEV respondents were more likely than PHEV respondents to charge at public charging stations (77% versus 40%), with BEV being similar to last year's results (78%) whereas PHEV decreased compared to last year's results (46%). It is also important to note that many of the write-in responses for "Other" (N = 917) included public charging stations, a friend's or relative's home, and local businesses or malls, so the number of respondents who selected public charging may be an underestimate of the number who use them.

Figure 24 shows that PHEV respondents who charge at home are much more likely than BEV respondents to report using a standard 120V outlet (64% versus 15%), while BEV respondents were more likely to use a Level 2 charger (59% versus 25%).[12] The higher prevalence of Level 2 charging among BEV respondents is unsurprising given the larger battery size of these cars and the inability to fall back on gasoline if a battery is not adequately charged.

Figure 24. How Respondents Charge At Home By Technology Type

Responses from PHEV and BEV consumers are significantly different for 120V outlet (chi-squared test: $\chi 2 = 1271$, $p < 0.01$, $n = 5,470$), 240V outlet (chi-squared test: $\chi 2 = 154$, $p < 0.01$, $n = 5,470$), and Level 2 charger (chi-squared test: $\chi 2 = 521$, $p < 0.01$, $n = 5,470$). There was no significant difference for Level 1 charger ($n = 5,470$).



Seventy percent (70%) of respondents disagreed with the statement “There are enough public chargers”, with Figure 25 showing the distribution between BEV and PHEV respondents. This is the same percentage as last year’s results, indicating that this may be an ongoing concern amongst electric car owners.

Figure 25. Agreement/Disagreement With The Statement "There Are Enough Public Chargers" By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 84$, $p < 0.01$, $n = 6{,}473$).

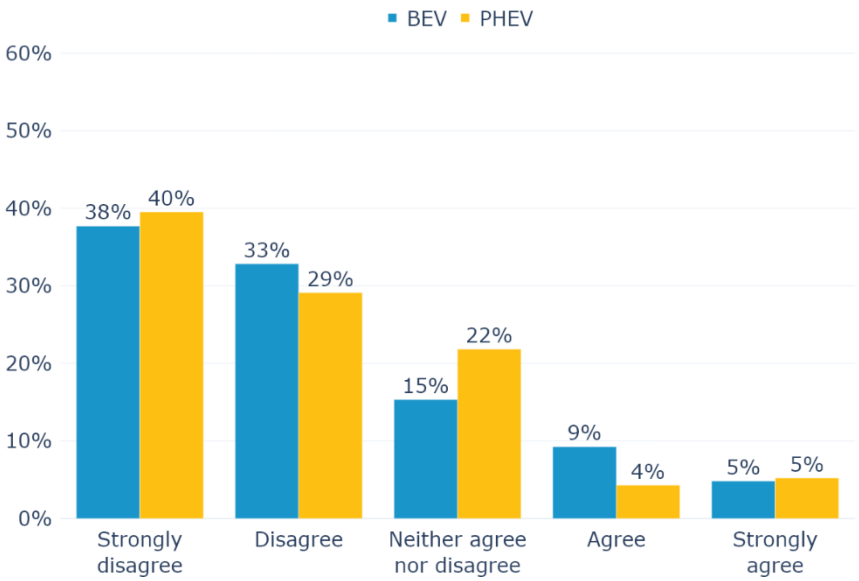
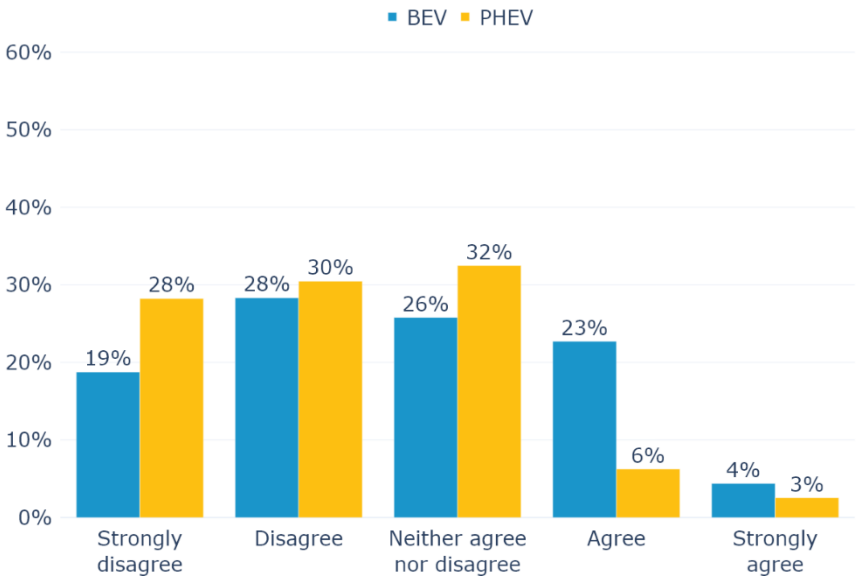


Figure 26. Agreement/Disagreement With The Statement "There Are Public Charging Stations In The Places Where I Need Them" By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 298$, $p < 0.01$, $n = 6{,}473$).



Echoing the top concerns reported by respondents, only 22% of respondents agreed with the statement, "There are public charging stations in the places where I need them" with BEV respondents more likely to agree with the statement than PHEV respondents as shown in Figure 26. The proportion of BEV respondents who selected "agree" or "strongly agree" stayed relative to last year's results (24% and 4%, respectively). Similar to last year's survey results (16% of BEV and 25% of PHEV respondents), 19% and 28% of BEV and PHEV respondents, respectively, strongly disagreed that there were public charging stations in the places where they need them.

For the next statement, "I frequently see gasoline-fueled cars parked in spaces with public electric car chargers," approximately 24% of respondents agreed or strongly agreed, with BEV respondents selecting this as a slightly more common concern (Figure 27).

Figure 27. Agreement/Disagreement With The Statement "I Frequently See Gasoline-Fueled Cars Parked In Spaces With Public Electric Car Chargers" By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 171$, $p < 0.01$, $n = 6{,}458$).

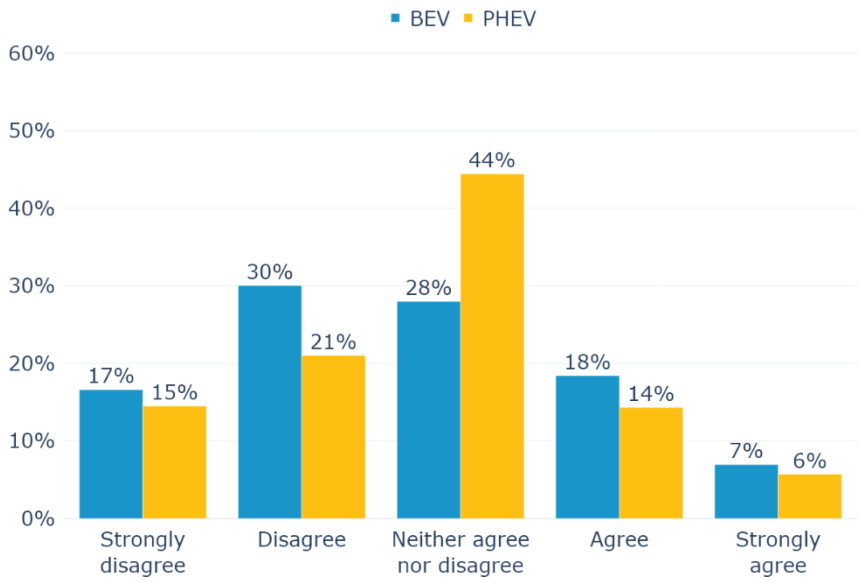


Figure 28. Agreement/Disagreement With The Statement "Public Charging Stations Are Often In Use By Others When I Want To Charge" By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 144$, $p < 0.01$, $n = 6{,}480$).

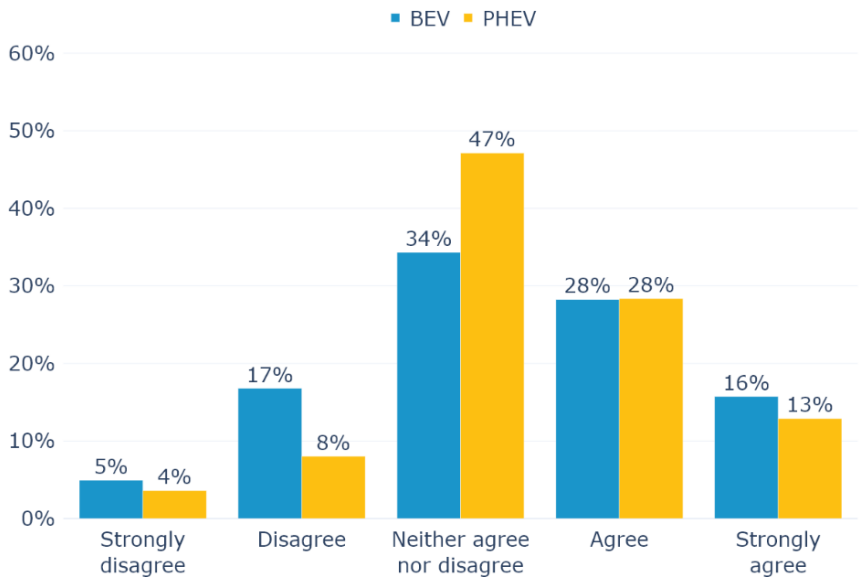


Figure 29. Agreement/Disagreement With The Statement "Public Charging Stations Are Often Not Working When I Want To Use Them" By Technology Type

Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 304$, $p < 0.01$, $n = 6{,}461$).

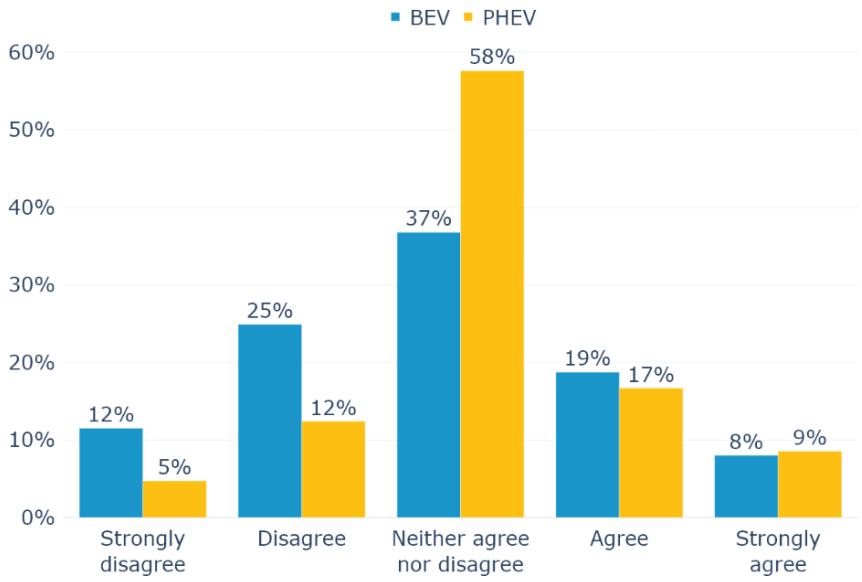


Figure 28 shows about 43% of respondents agreed or strongly agreed with the statement, "Public charging stations are often in use by others when I want to charge," while 19% disagreed or strongly disagreed. BEV respondents were more likely to disagree with the statement than PHEV respondents. Responses to the statement, "Public charging stations are often not working when I want to use them," has a higher percentage of disagreement (31%) than agreement (26%), with BEV respondents more likely to disagree with the statement than PHEV respondents (Figure 29).

2.9 Disadvantaged Communities Participation

Both economic and environmental burdens impact disadvantaged communities (DACs) and need to be prioritized to achieve environmental justice. On March 27, 2023, New York State finalized the criteria to define DACs.[13] Based on these criteria, DACs have a higher proportion of minority residents and lower household incomes relative to New York State. Approximately 36% of New York State residents live in a DAC.

Overall, 19% of Drive Clean Rebate individual participants with vehicles purchased in 2023 were within DACs. Individual participants within a DAC were almost proportionally represented among survey respondents, making up 16% of respondents (Figure 30). Respondents residing within and outside of DACs were nearly equally likely to purchase BEVs (76% and 70%, respectively) and PHEVs (24% and 30%, respectively (Figure 31).

Figure 30. Percentage Of Respondents Within A Disadvantaged Community

(n = 6,280)

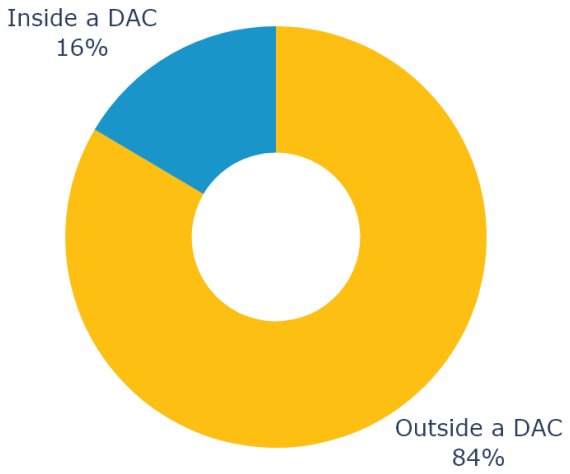
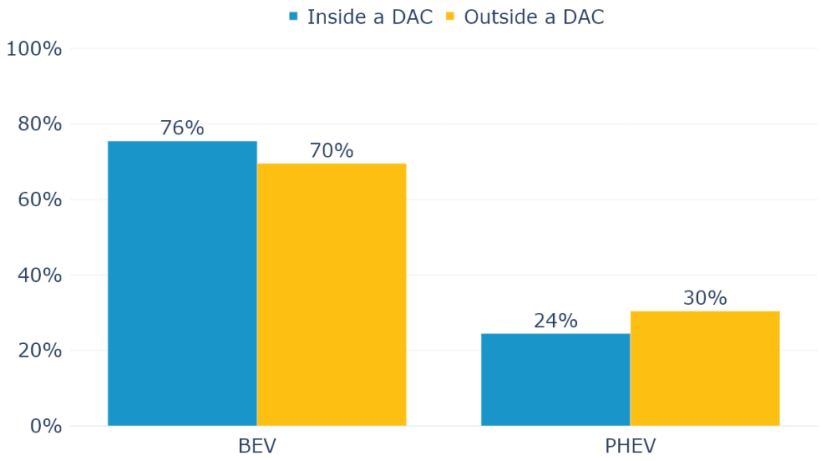


Figure 31. Technology Type By Disadvantaged Community Status

Responses from participants within a DAC and those outside a DAC are significantly different (chi-squared test: $\chi 2 = 15$, $p < 0.01$, $n = 6{,}280$).



Respondents residing within and outside a DAC reported similar satisfaction levels with owning an electric car (Figure 32) in addition to the likeliness to acquire another electric car (Figure 33).

Figure 32. Respondent Satisfaction With Owning An Electric Car By Disadvantaged Community Status

Responses from participants within a DAC and those outside a DAC are significantly different (chi-squared test: $\chi 2 = 26$, $p < 0.01$, $n = 6{,}239$).

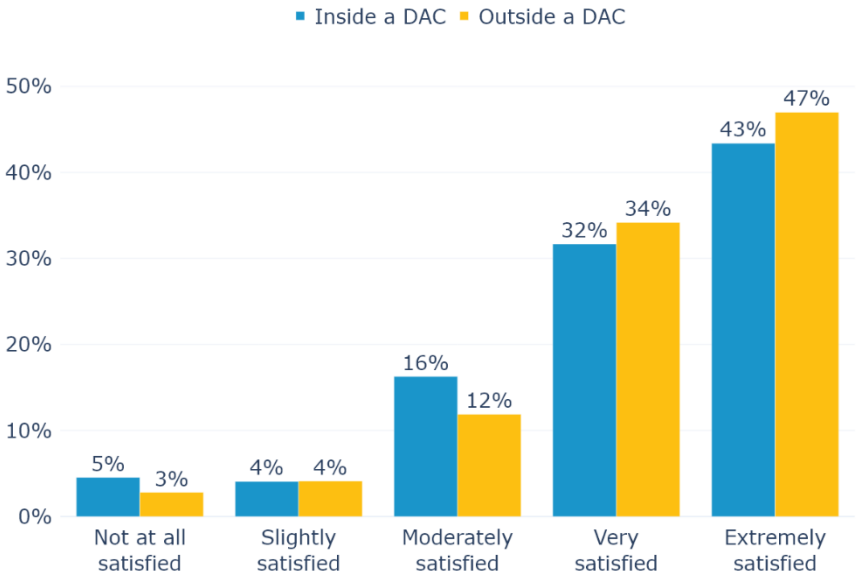
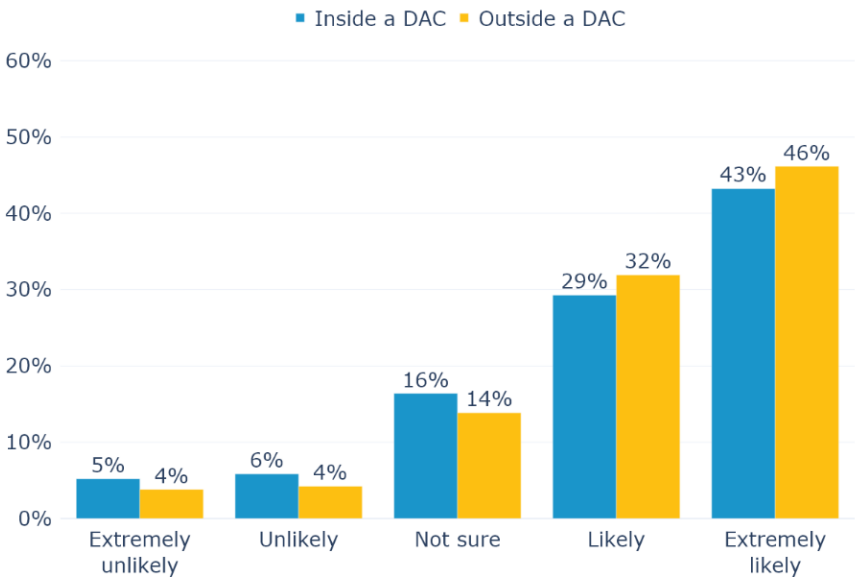


Figure 33. Responses To "How Likely Are You To Purchase/Lease Another Electric Car In The Future?" By Disadvantaged Community Status

Responses from participants within a DAC and those outside a DAC are significantly different (chi-squared test: $\chi 2 = 17$, $p < 0.01$, $n = 6{,}263$).



Respondents within a DAC were much less likely to live in a detached house than respondents outside a DAC (Figure 34). Results from Figure 35 show the median income is lower for respondents within a DAC, and Figure 36 suggests respondents within a DAC are less likely to identify as White or Caucasian.

Figure 34. Responses To "What Type Of Residence Do You Live In?" By Disadvantaged Community Status

Responses from participants within a DAC and those outside a DAC are significantly different (chi-squared test: $\chi 2 = 424$, $p < 0.01$, $n = 6{,}059$).

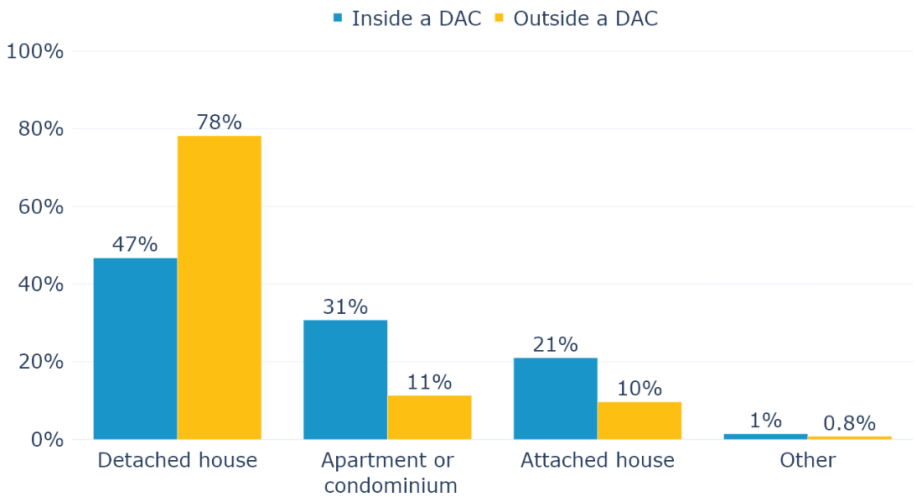


Figure 35. Annual Gross (Pre-Tax) Household Income From All By Disadvantaged Community Status

Responses from participants within a DAC and those outside a DAC are significantly different (chi-squared test: $\chi 2 = 183$, $p < 0.01$, $n = 5{,}166$).

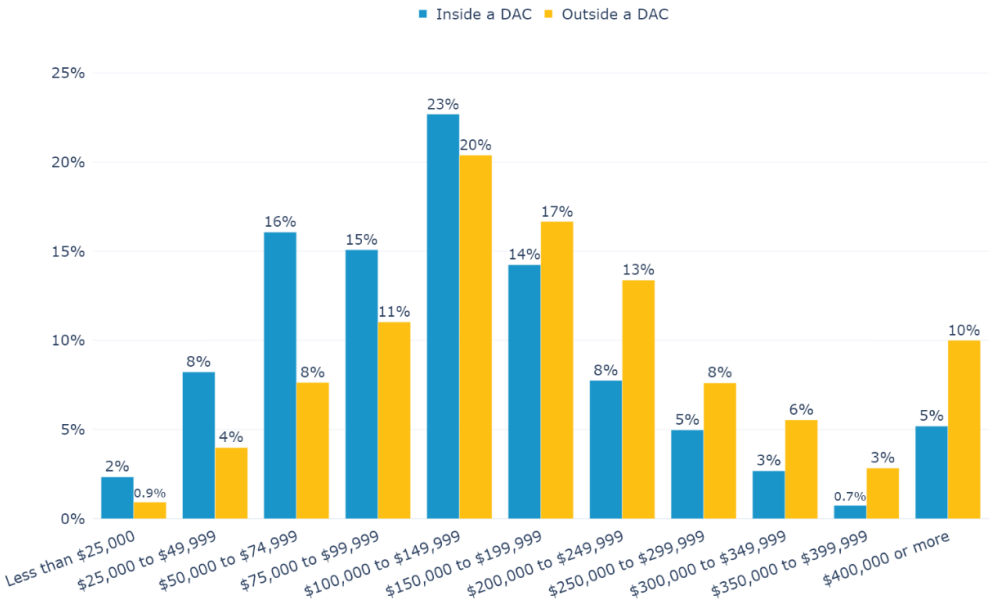
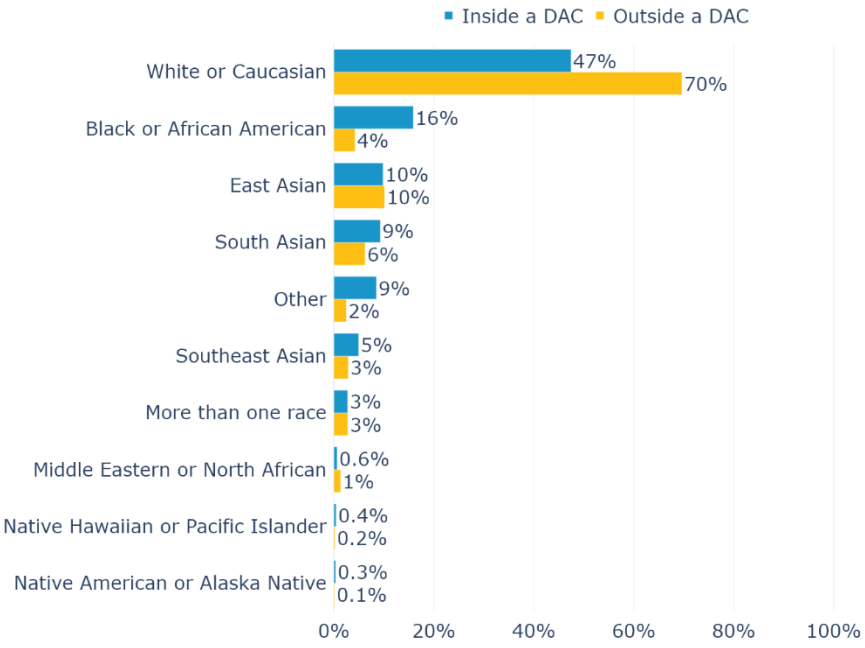


Figure 36. Responses To "How Do You Prefer To Describe Your Racial/Ethnic Identity?" By Disadvantaged Community Status

Responses from participants within a DAC and those outside a DAC are significantly different (chi-squared test: $\chi 2 = 305$, $p < 0.01$, $n = 5{,}177$).



3 Discussion

The Ownership Survey results provide multiple indications that participants continue to be satisfied with their electric cars. Most respondents (80%) said they were very or extremely satisfied and 79% said they would "probably" or "definitely" recommend electric car ownership to others. Respondents also reported a high likelihood of purchasing an electric car again, with 77% of participants saying they were likely or extremely likely to buy an electric car again.

While the overall satisfaction with electric car ownership was high, the survey highlighted some challenges electric car drivers face, and these challenges are consistent with last year's survey results. Issues related to charging infrastructure were frequently experienced by participants: 55% reported that access to public charging stations was one of the top challenges they've faced, and only 13% thought there were enough public chargers. In addition to a perceived lack of charging infrastructure, another concern was the speed of car charging. This issue was selected as a challenge by 56% of PHEV respondents and 46% of BEV respondents.

The percentage of BEV respondents who charge at home daily remain consistent as compared to last year's results (37% and 38%, respectively), whereas less PHEV respondents charge at home daily (56% and 67%, respectively). This may indicate home charging trends for BEVs may remain steady with the current battery life of electric cars, though further research is recommended to understand the changes in home charging trends for PHEVs. The frequency of using a public charger at least a few times a month is similar to last year's survey results for BEV respondents (77% and 78%, respectively) but slightly lower for PHEV respondents (40% versus 46% in last year's results).

Survey respondents were demographically similar to new car buyers in the Strategic Vision New Vehicle Experience Survey in terms of percentage indicating an age of 40 or older (76% in both Ownership Survey and NVES results), but were dissimilar otherwise. Survey respondents were far more likely to identify as male (74% vs 55%), to have a bachelor's degree or higher (75% vs 64%) and to have a household income greater than $100,000 (73% vs 55%).

The ownership survey provided insight into the electric car ownership experience of respondents and revealed some areas, like public charging infrastructure, that respondents find could be improved. Charging behavior continues to evolve among both BEV and PHEV drivers as battery capacities change and the electric car market matures.

Appendix A. Ownership Survey Questionnaire

A.1 Introduction

Welcome to NYSERDA's Drive Clean Rebate "Electric Car Ownership Survey"

Your participation in this 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 should be completed by the primary driver of the car. If you aren't the primary driver, we encourage you to have them 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:
Phone: (866) 595-7917
Email: NYDriveClean@energycenter.org

A.2 Car Status

Page exit logic: Skip / Disqualify Logic **IF:** #1 Question "According to our records, you received a rebate for a **[question('value'), id='17'] [question('value'), id='18']**. Does your household still have this electric car?" is one of the following answers ("No, but my household has a different electric car","No, my household no longer owns an electric car") **THEN:** Jump to page 11 - Disqualification - rebated car no longer in use

Logic: Show/hide trigger exists.

According to our records, you received a rebate for a **[question('value'), id='17'] [question('value'), id='18']**. Does your household still have this electric car?*

( ) Yes

( ) No, but my household has a different electric car
( ) No, my household no longer owns an electric car

Logic: Hidden unless: #1 Question "According to our records, you received a rebate for a [question('value'), id='17'] [question('value'), id='18']. Does your household still have this electric car?" is one of the following answers ("Yes","No, but my household has a different electric car")

Are you the primary driver of your electric car?

( ) Yes
( ) No

Logic: Hidden unless: #1 Question "According to our records, you received a rebate for a [question('value'), id='17'] [question('value'), id='18']. Does your household still have this electric car?" is one of the following answers ("No, but my household has a different electric car","No, my household no longer owns an electric car")

Please describe what happened to your rebated [question("value"), id="17"] [question("value"), id="18"].

( ) I sold it or traded it in.
( ) I donated it or gave it to someone else.
( ) It was damaged or stolen.
( ) Other, please specify:

A.3 Household Cars

Please tell us how many of each of the following cars your household currently owns (exclude motorcycles, RVs, and non-highway-capable cars).

Car Technology Type	0	1	2	3 or more
Gasoline car:	___	___	___	___
Conventional hybrid car (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 car:	___	___	___	___
Compressed natural gas car:	___	___	___	___

Flex-fuel (E85 ethanol) car:	___	___	___	___
Other alternatively fueled car:	___	___	___	___

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.

A.4 Satisfaction with Electric Car Ownership

Overall, how satisfied are you with your experience owning an electric car?

( ) Not at all satisfied
( ) Slightly satisfied
( ) Moderately satisfied
( ) Very satisfied
( ) Extremely satisfied

On a scale of 1 to 5 (with 1 representing "Not at all important" and 5 representing "Extremely important"), please indicate how important the following aspects of electric car ownership are to you.

Aspects of Electric Car Ownership	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 refueling	( )	( )	( )	( )	( )
Car performance	( )	( )	( )	( )	( )

Car styling, finish, and comfort	( )	( )	( )	( )	( )
Owning the newest technology	( )	( )	( )	( )	( )

Validation: Max. answers = 3 *(if answered)*

Logic: Hidden unless: (nyfueltype matches regex pattern "BEV" OR nyfueltype matches regex pattern "PHEV")

What are the three greatest challenges to owning an electric car in New York?

[ ] Cost of charging
[ ] Overall cost of ownership
[ ] Car performance in cold/inclement weather
[ ] Car maintenance
[ ] Overall car performance
[ ] Charging at home
[ ] Access to public charging stations
[ ] Speed of car charging
[ ] Range limitations
[ ] Other, please specify: _____

Validation: Max. answers = 3 *(if answered)*

Logic: Hidden unless: nyfueltype matches regex pattern "FCEV"

What are the three greatest challenges to owning an electric car in New York?

[ ] Cost of hydrogen fueling
[ ] Overall cost of ownership
[ ] Car performance in cold/inclement weather
[ ] Car maintenance
[ ] Overall car performance
[ ] Access to fueling stations
[ ] Functionality of fueling stations
[ ] Range limitations
[ ] Other, please specify: _____

A.5 Electric Car Driving

How often do you use your electric car to do the following?

Electric Car Usage	Never	A few times per month or less	About once per week	A few times per week	Daily or almost daily
Commute all the way to and from work	( )	( )	( )	( )	( )
Commute partway to or from work (e.g., driving to a park-and-ride lot)	( )	( )	( )	( )	( )
Run local errands (< 10 miles from home)	( )	( )	( )	( )	( )
Take long trips (>50 miles from home)	( )	( )	( )	( )	( )
As a car for ride sourcing services (e.g., Uber, Lyft)	( )	( )	( )	( )	( )

Validation: Min = 0 Max = 500 Must be numeric Whole numbers only Positive numbers only Min character count = 0

About how many miles do you drive your electric car per day?

_____

Validation: Min = 0 Max = 75000 Must be numeric Whole numbers only Positive numbers only

How many total miles have you driven your electric car so far?

_____

Validation: Min = 0 Max = 100

Logic: Hidden unless: nyfueltype matches regex pattern "PHEV"

What percent of your total miles driven have been **electric** miles?

0 _____[__]_____ 100

Please list the 5-digit ZIP code of your place of employment, if applicable.

Validation: Max character count = 5 Min character count = 5

Logic: Show/hide trigger exists.

ZIP code: _____

Logic: Show/hide trigger exists. Hidden unless: Question "ZIP code:"

OR select one of the following:

( ) I don't work
( ) I work at home
( ) My work location varies

Page entry logic: This page will show when: (nyfueltype matches regex pattern "PHEV" OR nyfueltype matches regex pattern "BEV")

A.6 Charging

Logic: Show/hide trigger exists. Hidden unless: Question "OR select one of the following:" is not one of the following answers ("I don't work","I work at home")

Do you have access to charging at your place of work?

( ) Yes, and I can charge for free.
( ) Yes, and I must pay to charge.
( ) No
( ) I don't know

How often do you charge at each of the following locations?

Charging Locations	Never	A few times a month or less	About once per week	A few times per week	Daily or almost daily
At my home:	( )	( )	( )	( )	( )
Onsite at my workplace:	( )	( )	( )	( )	( )
Where I park during work (I don't park onsite at work):	( )	( )	( )	( )	( )

At other public charging stations:	( )	( )	( )	( )	( )
Other	( )	( )	( )	( )	( )

Logic: Hidden unless: Question "Other" is one of the following answers ("A few times a month or less","About once per week","A few times per week","Daily or almost daily")

Please specify the other charging location

_____

Logic: Hidden unless: Question "At my home:" is one of the following answers ("A few times a month or less","About once per week","A few times per week","Daily or almost daily")

Which charging method(s) are you currently using 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
[ ] Using a level 2 (240V) charging station

How much do you disagree or agree with the following statements?

Statements	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
There are enough public chargers.	( )	( )	( )	( )	( )
Public charging stations are often in use by others when I want to charge.	( )	( )	( )	( )	( )
There are public charging stations in the places where I need them.	( )	( )	( )	( )	( )
Public charging stations are often not working when I want to use them.	( )	( )	( )	( )	( )
I frequently see gasoline-fueled cars parked in spaces with public electric car chargers.	( )	( )	( )	( )	( )

Logic: Hidden unless: #14 Question "Do you have access to charging at your place of work?" is one of the following answers ("Yes, and I can charge for free.","Yes, and I must pay to charge.")

How much do you disagree or agree with the following statements?

Statements	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
There are enough workplace chargers.	( )	( )	( )	( )	( )
Workplace charging stations are often in use by others when I want to charge.	( )	( )	( )	( )	( )
Workplace stations are often not working when I want to use them.	( )	( )	( )	( )	( )
I frequently see gasoline-fueled cars parked in spaces with workplace electric car chargers.	( )	( )	( )	( )	( )

Page entry logic: This page will show when: nyfueltype matches regex pattern "FCEV"

A.7 Fueling

How often do you refuel your fuel-cell electric car?

( ) Less than once per month
( ) About once per month
( ) A few times per month
( ) About once per week
( ) A few times per week
( ) Daily or almost daily

When you visit a fueling station, how often is it out of order?

( ) I have never encountered a station that was out of order
( ) Rarely
( ) Sometimes
( ) Frequently
( ) Almost always

A.8 Program Performance/Efficacy

Logic: Show/hide trigger exists.

Would you recommend electric car ownership to other people?

( ) Definitely would not recommend
( ) Probably would not recommend
( ) Not sure
( ) Probably would recommend
( ) Definitely would recommend

Logic: Hidden unless: #22 Question "Would you recommend electric car ownership to other people?" is one of the following answers ("Definitely would not recommend","Probably would not recommend")

Please share the main reason(s) why you wouldn't recommend an electric car.

_____

_____

Have any of your friends or family purchased/leased an electric car since you acquired your electric car?

( ) Yes
( ) No
( ) I don't know

How likely are you to purchase/lease another electric car in the future?

( )Not at all likely/Extremely unlikely
( ) Unlikely
( ) Not sure
( ) Likely
( ) Extremely likely

Would you purchase or lease another electric car if the New York State electric car rebate (Drive Clean Rebate) were not available?

( ) Yes
( ) No

A.9 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.

Do you own or rent your residence?*

( ) Own
( ) Rent
( ) Neither rent or own
( ) Prefer not to answer

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

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.

How many people live in your household, including yourself?

( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9 or more

What is your age?*

( ) 16–20

( ) 21–29
( ) 30–39
( ) 40–49
( ) 50–59
( ) 60–69
( ) 70–79
( ) 80+
( ) Prefer not to answer

What is your gender?*

( ) Female
( ) Male
( ) Non-binary/third gender
( ) Prefer to self-describe:: _____
( ) Prefer not to answer

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

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 $249,999
( ) $250,000 to $299,999
( ) $300,000 to $349,999
( ) $350,000 to $399,999
( ) $400,000 or more
( ) Prefer not to answer

Are you Hispanic or Latino/a?*

( ) Yes
( ) No
( ) Prefer not to answer

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

A.10 Other comments

Page exit logic: Skip / Disqualify Logic**IF:** #1 Question "According to our records, you received a rebate for a **[question('value'), id='17'] [question('value'), id='18']**. Does your household still have this electric car?" is one of the following answers ("Yes") **THEN:** Jump to page 12 - Thank You! Flag response as complete

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

Please be sure to click “Next” at the bottom of the page to complete the survey.

_____

_____

A.11 Disqualification - rebated car no longer in use

Unfortunately, you do not qualify for this survey at this time. You indicated that you no longer own the car associated with your survey invitation.

However, we welcome you to provide any feedback you have about the Drive Clean Rebate and your experience owning your electric car in the comment box below. Please be sure to select "Submit" so your comments are saved.

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

Please share any comments in the box below.

_____

_____

A.12 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] Program participants are invited to take the Ownership Survey once per quarter. Therefore, the time since they have acquired their vehicle ranges from 10.3 – 11.5 months.

[2] Defined as using their vehicle a few times per week or more.

[3] Program participants are defined as applicants who applied for and received a rebate for an electric car through NYSERDA's Drive Clean Rebate Program.

[4] For example, participants who purchased their car anytime during quarter one 2023 receive the survey invitation in the middle of quarter one 2024. Therefore, they may have been in possession of their car anywhere from 10.3 – 11.5 months.

[5] The weighting approach was developed in C. Johnson, B.D. Williams, C. Hsu, J.B. Anderson, Summary Documentation of the Electric Vehicle Consumer Survey, 2013–2015 Edition | Clean Vehicle Rebate Project, Center for Sustainable Energy (CSE), San Diego CA, 2017. https://cleanvehiclerebate.org/eng/content/summary-documentation-electric-vehicle-consumer-survey-2013-2015-edition (accessed February 5, 2020).

[6] 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.

[7] Similar segmentation methodology is used in B.D. Williams, J. Orose, M. Jones, J.B. Anderson, Summary of Disadvantaged Community Responses to the Electric Vehicle Consumer Survey, 2013–2015 Edition | Clean Vehicle Rebate Project, Center for Sustainable Energy (CSE), San Diego CA, 2018. https://cleanvehiclerebate.org/eng/content/summary-disadvantaged-community-responses-electric-vehicle-consumer-survey-2013–2015-edition (accessed July 1, 2020).

[8] Rao, J. N. K., and A. J. Scott. 1984. On chi-squared tests for multiway contingency tables with cell proportions estimated from survey data. Annals of Statistics 12: 46–60.

[9] The NVES sample does not include Tesla consumers. However, as the Drive Clean Rebate Program is a new-car program, new-car buyers are the appropriate baseline for comparison.

[10] Strategic Vision. (2022). *New Vehicle Experience Study (NVES), special New York data extraction, 2022* [Data set]. The Edwards Associates, Inc. dba Strategic Vision.

[11] Responses from BEV and PHEV consumers are significantly different (chi-squared test: $\chi 2 = 270$, $p < 0.01$, $n = 6{,}148$).

[12] Note that multiple options could be selected, so percentages do not add to 100%.

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