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Agency of Transportation

January 31, 2023

House Committee on Transportation
Senate Committee on Transportation
House Committee on Energy and Technology
Senate Committee on Finance

Vermont State House
115 State Street
Montpelier, VT 05633-5301

Re: Report on Vermont's Statewide Vehicle Incentive Programs

Members of the Committees,

The Vermont Agency of Transportation (AOT) respectfully submits the attached program summaries for the Incentive Program for New PEVs, MileageSmart, Replace Your Ride, and the eBike Incentive Program. For reference, also attached is the 2022 survey of past incentive recipients managed by the Vermont Energy Investment Corporation (VEIC).

In many ways, 2022 has marked a year of important transitions for the State of Vermont's vehicle incentive programs, with the full implications of these likely to be felt over the coming years. After a competitive solicitation was issued in the fall of 2021 to select a new third-party administrator, AOT was able to reach a grant agreement with the Center for Sustainable Energy, a non-profit organization based in California with significant experience in managing statewide rebate programs. The Incentive Program for New PEVs had previously been managed through the use of no-cost contracts with Vermont's distribution utilities and coordination efforts of VEIC, but these tasks were transitioned to CSE who assumed full responsibility for the program on July 1, 2022 after months of preparation. A subcontractor on the grant agreement, VEIC has still remained involved in the incentive programs, playing a key role in facilitating a mostly smooth transition of New PEVs, leading communication and outreach activities with consumers, dealerships, and other local partners, and serving in a valuable advisory capacity with its institutional knowledge of prior programming and ongoing electrification initiatives.

The new team of CSE and VEIC has indeed been critical to streamlining the administration of the New PEV program, resulting in more customer-friendly online application processes and transparent program dashboards found on the Drive Electric Vermont website. Although payment processing was slower in the beginning than hoped for, both CSE and AOT have worked to improve systems for these to ensure timely payments to dealerships and consumers receiving rebates directly. The program administrator also supported the launch of two new programs this year—the first statewide e-bike incentive program in the nation, as well as two phases of the

Replace Your Ride program, an additional incentive to replace older, inefficient vehicles with cleaner transportation options.

Meanwhile, Capstone Community Action has continued to manage MileageSmart, the State's used efficient vehicle program for households with low to moderate incomes at or below 80% of State Area Median Income. In 2022 alone, there have been multiple amendments to AOT's grant agreement with Capstone as program and funding changes have necessitated them, including the change last year allowing Capstone to be reimburse for a greater percentage (15% up from 10%) of its costs to deliver the program. However, the Agency's amendment process and what Capstone feels are burdensome reporting requirements have at times caused frustration that there cannot be a "clean contract" without the complex layers of multiple amendments to navigate. The Agency and Capstone will therefore work together in the coming year on how a simplified agreement might be achieved while remaining consistent with State and Agency granting policies and guidelines.

As part of the scope of work for its prior Multi-pronged Vehicle Electrification Strategy ("MUVES") agreement with VEIC, AOT included funding to evaluate its Incentive Program for New PEVs. Accordingly VEIC's Drive Electric Vermont designed and released a survey to past recipients of the PEV incentives in order to gain insights about how the state incentives have impacted leases/purchases across demographic groups. The results of this survey work became available in March 2022 and are attached here for committee members to explore. It is expected that future surveys will build upon this initial effort to build greater understanding of what the optimal incentive amounts and guidelines will be to reach the state's vehicle electrification, carbon reduction, and transportation equity goals.

Additionally, AOT has worked with CSE to conduct an incentive program optimization analysis for New PEVs, MileageSmart, and Replace Your Ride. That effort is described in more detail in CSE's annual report and the results of the analysis are due out in mid-February 2023 to likewise help guide potential programmatic changes.

While the Center for Sustainable Energy has submitted an annual report with a detailed look at the incentive programs, I offer a brief snapshot of the programs below:

Incentive Program for New PEVs:

SFY23 Authorization: \$12 million (\$3 million in SFY22)

Incentive Funds Remaining: \$9,322,000

- In FFY2022 (October 2021 – September 2022), 583 vehicles were incentivized, down slightly from the prior federal fiscal year.
- 300 incentives worth \$912,500 have been issued in the last six months of SFY23, representing an increasing pace, but not nearly enough to meet EV adoption targets
- 54% of the incentives and 67% of the incentive funding has been directed to the lower-income bracket of eligible individuals or households, an increase of 9% and 7% respectively
- 73% of the incentives and 80% of incentive funding has gone toward all-electric vehicles (vs. plug-in hybrids), an increase of 13% and 10% respectively

By these simple measures, the Incentive Program for New PEVs is working as intended, in benefitting those Vermonters who need it most and encouraging the lease or purchase of vehicles where the climate impacts are greatest. However, program changes will likely be necessary in order to both quicken the pace and increase the volume of vehicles incentivized.

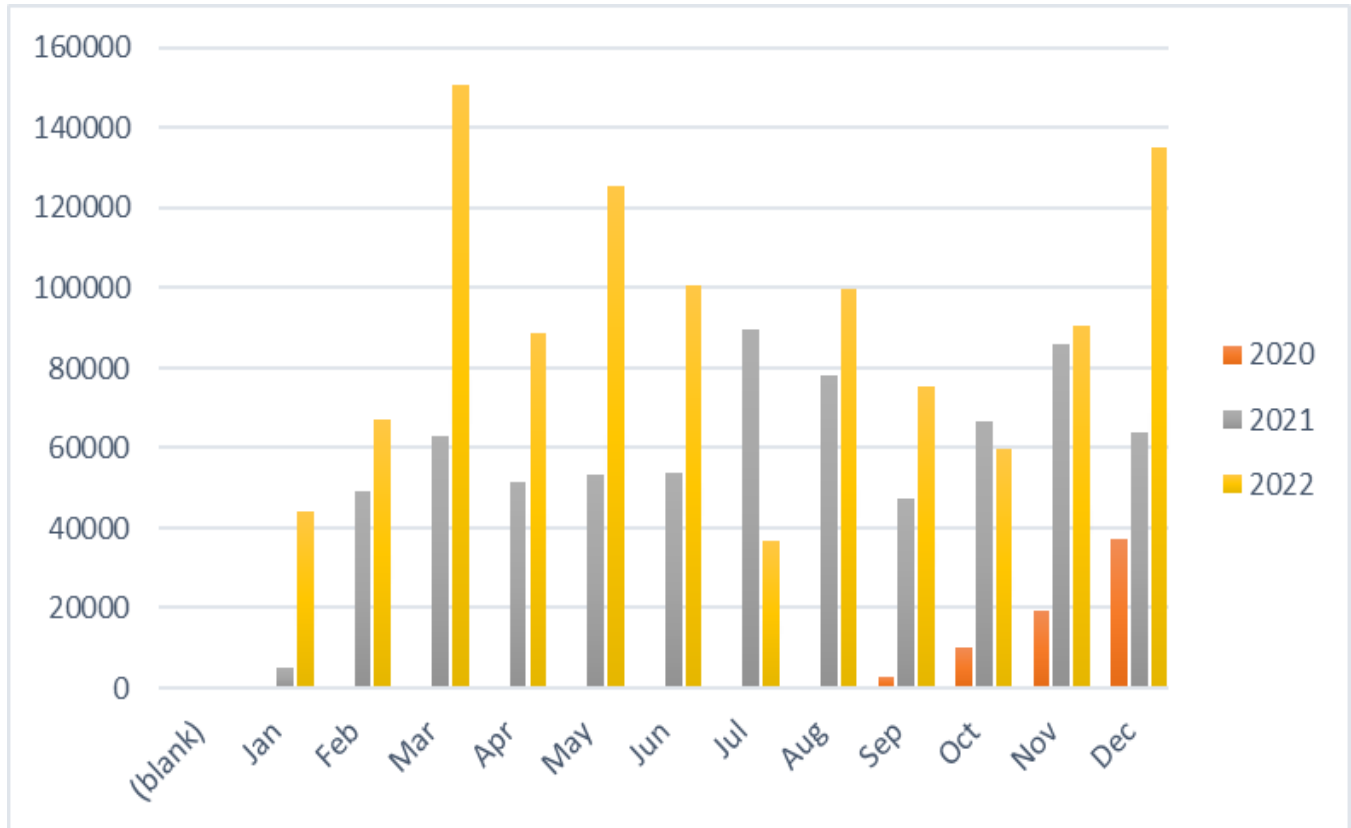
MileageSmart:

SFY23 Authorization: \$3 million (\$1.25 million in SFY22)

Incentive Funds Remaining: \$2,967,000

- In FFY2022, 228 vehicles were incentivized
- In first six months of SFY23, 114 incentives worth \$498,000 have been issued
- Roughly 43% of participants purchased a plug-in electric vehicle

MileageSmart Historical Incentive Funds Issued



Capstone applicants continue to struggle to find affordable, suitable used vehicles in Vermont matching their wants and needs, with over 1,000 currently approved for an incentive but still awaiting a vehicle. The average time to complete a transaction has increased significantly due to supply constraints and inflationary pressures. Vehicle incentives are only available at the point-of-sale through participating Vermont dealerships which does not allow for applicants to shop out-of-state for cheaper, otherwise qualifying vehicles. With the Incentive Program for New PEVs, post-sale consumer rebates account for nearly a third of incentives issued. However, MileageSmart’s program structure is designed to protect participants from incurring tax liability that may impact eligibility for other forms of public assistance, as well as to provide consumer protection through oversight of dealerships where there is enforcement authority and state licensing nexus in Vermont.

eBike Incentive Program:

SFY23 Authorization: \$50,000 (\$50k in SFY22)

Incentive Funds Remaining: \$482

- In SFY23, 279 e-bikes were incentivized with \$92,018

- Similar to participation rates with new PEVs, 56% of recipients had lower incomes, with 67% of program funds directed to those with lower incomes
- 21% received their rebate at the point-of-sale at a local dealership, while 79% used a post-sale rebate (primarily for online purchases)

Replace Your Ride:

SFY23 Authorization: \$3 million (\$1.5 million in SFY22)

Incentive Funds Remaining: \$3,804,000

- Only 7 incentives have been issued as of December 2022 because of a later launch and structural issues—very specific vehicle attributes, as well as an incentive level (\$3000) which limits the potential pool of qualifying vehicles and participants

Because of the program's complexities, Replace Your Ride was launched in two phases—the first to align with existing incentive programs; the second to create a prepaid mobility card system that could restrict purchases to eligible expenses within the State like bikes, e-bikes, electric motorcycles, carsharing, bike carsharing, etc.) More adjustments will be needed to increase interest and uptake in the program.

Looking Ahead:

Inflationary pressures and tight supply have certainly impacted the participation of Vermonters in our statewide incentive programs in 2022. There are some signs that these pressures may ease up a bit in 2023 as new production increases and used vehicle prices begin to normalize. The passage of the Inflation Reduction Act, a modified EV tax credit program, has changed eligibility for participants, vehicles (new and used), and credit amounts in ways that will likely stack well with state and local incentives to help EV adoption in Vermont over the long-term. The Investment in Infrastructure and Jobs Act (IIJA) has provided needed momentum towards a national public fast charging network at the same time that the State of Vermont has invested millions of dollars more into both corridor and community charging. And adoption of Advanced Clean Cars II rules will allow Vermont to benefit from an increasing supply of electric vehicles in the future to meet our state greenhouse gas reduction requirements.

Some programs are certainly new and need more exposure to increase incentive uptake. VEIC is currently working on a concerted marketing and outreach plan for the upcoming year to build awareness of the programs, particularly among populations who might benefit most from incentives to make the transition to electric. In addition, the Agency will be proposing a number of potential program adjustments for the legislature's consideration from new income and vehicle price guidelines to higher incentive amounts and performance standards for PHEVs. AOT also sees an opportunity to more quickly increase EV adoption and build a larger used vehicle market through a new Electrify Your Fleet incentive program which could encourage commercial, municipal and other tax-exempt fleets to make the switch for light-duty cars and trucks. The Agency looks forward to discussing continual improvements to Vermont's incentive programs and working in partnership with the legislature to meet collective climate goals on behalf of all Vermonters.

Please feel free to reach out with any questions.

Yours sincerely,

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State of Vermont PEV Incentive Programs Annual Report - 2022

January 27, 2023



Center for
Sustainable
Energy™

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Acronyms

ACH: Automated Clearing House

AGI: Adjusted Gross Income

BEV: Battery Electric Vehicle, also referred to as all-electric vehicles

CBO: Community-Based Organization

CSE: Center for Sustainable Energy

DEV: Drive Electric Vermont

DU: Distribution Utilities

E-Bike: Electric Bicycle

EVT: Efficiency Vermont

EV: Electric Vehicle

EEU: Energy Efficient Utilities

FPL: Federal Policy Level

GHG: Greenhouse Gas

ICE: Internal Combustion Engine

IRA: Inflation Reduction Act

MSRP: Manufacturer's Suggested Retail Price

PHEV: Plug-in Hybrid Electric Vehicle

PEV: Plug-in Electric Vehicle

RYS: Replace Your Ride

VEIC: Vermont Energy Investment Corporation

VTrans: Vermont Agency of Transportation

ZEV: Zero Emissions Vehicle

i. Executive Summary

This first Annual Report summarizes progress and curates insights and recommendations since the Center for Sustainable Energy (CSE) assumed administration of Vermont's New Plug-in Electric Vehicle (New PEV) incentive program in July 2022. The New PEV program was previously administered by the State's electric distribution utilities (DUs) and Vermont Energy Investment Corporation (VEIC) since its launch in 2019. This report also summarizes progress to date on the electric bicycle (E-Bikes) and Replace Your Ride (RZR) incentive programs, which were launched in July and September 2022, respectively.

For the period from July 1 through November 30, 2022, the New PEV program has issued \$796,500 in incentives for 264 PEVs, and the E-Bikes program has issued \$92,018 in incentives for 279 e-bikes. The more recently launched Replace Your Ride (RZR) program has issued a total of seven incentives for \$21,000, four of which were stacked with a New PEV incentive, while three have been stacked with a MileageSmart incentive for used vehicles.

Most approved applications for the New PEV and E-Bike programs have been for income-qualified Enhanced rebates, representing 53% and 56% of approved applications, respectively. Program participation has been spread across the state, with Washington County having the higher per capita participation in the New PEV program and Orange County having the highest per capita participation in the E-Bikes program.

Marketing, Education and Outreach efforts, led by partner VEIC, have primarily focused on updating the Drive Electric Vermont (DEV) website with information about the re-launch of the New PEV program and the initial launch of the RZR and E-Bike Programs, as well as engagement with auto dealers and e-bike retailers to orient them to new program application processes.

CSE provides the following key recommendations by program:

New PEV – Increase base MSRP caps for BEVs to \$50,000 and PHEVs to \$45,000 to incorporate popular models like the Toyota RAV4 Prime and Tesla Model 3

Replace Your Ride – Consider increasing rebate levels to make participation more attractive relative to the residual value of vehicles.

E-Bikes – Allocate additional funding in response to strong demand, and invest additional resources to research and analysis to understand e-bike use patterns and resultant GHG emissions impacts.

ii. Program Financial Expenditures

New PEV Incentive Expenditures

CSE re-launched the New PEV incentive program on July 1, 2022, with a total incentive budget of \$648,700 remaining from the utility-administered program. This was supplemented by an additional \$10,200,000 from the 2022 Transportation Bill, for a total incentive budget of \$10,848,700. Since that time, CSE has approved 264 incentive applications for a total of \$796,500. **Table 1** below shows a breakdown of New PEV incentives approved by month through November 30, 2022, including incentives that were stacked with the RYR program.

Month	Applicant Post-Purchase		Dealer Point-of-Sale		Total	
	Count	Sum	Count	Sum	Count	Sum
Jul	18	\$54,000	0	\$0.00	18	\$54,000
Aug	19	\$60,000	51	\$153,500	70	\$213,500
Sep	13	\$41,500	40	\$121,500	53	\$163,000
Oct	7	\$20,000	31	\$91,500	38	\$107,500
Nov	25	\$64,500	60	\$190,000	85	\$238,500
Grand Total	82	\$240,000	182	\$556,500	264	\$796,500

Table 1 New PEV Approved Incentives through November 30, 2022

The New PEV program offers an Enhanced Rebate for customers below a certain income. **Table 2** below shows the applications approved by rebate level. Further description of the distribution between battery-electric (BEV) and plug-in hybrid electric (PHEV) applications is provided in *Section V. Summary of Incentive Volumes and Figures*.

Month	Enhanced Rebate	Standard Rebate	Grand Total
Jul	8	10	18
Aug	39	31	70
Sep	31	22	53
Oct	17	21	38
Nov	46	39	85
Grand Total	141	123	264

Table 2 New PEV Approved Applications through November 30, 2022, by Rebate Level

Replace Your Ride Incentives Expenditures

The RYR program launched in two phases and includes three different application pathways. These pathways are described in *Section iii. Summary of Incentives Process*. RYR launched with an initial program budget of \$1,500,000 from the 2021 Transportation Bill, which was supplemented with an additional \$3,000,000 from the 2022 Transportation Bill, for a total three-year program budget of \$4,500,000.¹

Table 3 below details the incentive totals from the initial launch on September 14th, 2022, which began with the option to scrap an existing internal combustion engine (ICE) vehicle and replace it with a New or Used PEV. These incentives could only be claimed at the point-of-sale through participating dealerships. On December 2nd, 2022, the second phase of the RYR program launched to include consumer claims for mobility cards, which has not had any submissions as of December 15th, 2022.

Month	RYR + New PEV		RYR + Used PEV		Total	
	Count	Sum	Count	Sum	Count	Sum
Oct	1	\$3,000	0	\$0	1	\$3,000
Nov	3	\$9,000	3	\$9,000	6	\$18,000
Grand Total	4	\$12,000	3	\$9,000	7	\$21,000

Table 3 RYR Incentive Totals from Initial Launch on September 14, 2022

¹ Program budgets allow for up to 15% for administrative costs.

E-Bikes Incentive Expenditures

Table 4 below summarizes the dollar value and count of incentives approved by month from program launch, broken out between claim type: Retailer Point-of-Sale and Consumer Post-Sale. The E-Bike Program launched on July 21, 2022, with \$92,500 in total incentive funding. This funding was fully exhausted in mid-September, at which point the program stopped accepting new applications. All applications were closed out in early November and the information below shows that 79% of applications were Consumer Post-Sale claims, with the remaining 21% being claimed by retailers as reimbursement from point-of-sale offerings.

Month	Consumer Post-Sale		Retailer Point-of-Sale		Total	
	Incentive Funds	Count	Incentive Funds	Count	Incentive Funds	Count
Jul-22	\$5,600	17	\$1,200	3	\$6,800	20
Aug-22	\$36,384	110	\$10,250	29	\$46,634	139
Sep-22	\$28,194	87	\$8,300	26	\$36,494	113
Oct-22	\$1,190	4	\$0	0	\$1,190	4
Nov-22	\$900	3	\$0	0	\$900	3
Grand Total	\$72,268	221	\$19,750	58	\$92,018	279

Table 4 E-Bikes Count and Dollar Value of Approved Incentives

Administrative Expenditures

A total of \$623,634 in administrative expenses for all three programs were incurred from the start of the contract March 1, 2022, through November 30, 2022, against a total three-year administrative budget of approximately \$2,342,000. Administrative expenses by program are as follows in **Table 5** below:

Program	Incentives issued to date (\$)	Administrative expense to date (\$)	Total expenditures to date (\$)	Administrative expense as % of total expenditures to date
New PEV	\$796,500	\$438,529	\$1,235,029	35.5%
RYP	\$21,000	\$180,105	\$201,105	89.6%
E-Bikes	\$92,018	\$5,000	\$97,018	5.2%
Grand Total	\$909,518	\$623,634	\$1,533,152	

Table 5 Incentive and Administrative Expenditures by Program

Higher administrative expenditures relative to incentives paid are due to front-loaded costs related to program design and launch, as well as configuration of the online application portal, and are expected to normalize over time.

iii. Summary of Incentive Process

New PEV

The New PEV program re-launched under CSE's administration on July 1st, 2022. Buyers/lessors who wish to participate in the program must be Vermont residents and meet certain income requirements to be eligible. Additionally, Vermonters are limited to one incentive per year. The incentive is only available to approved plug-in hybrid or all-electric PEVs that meet the required base Manufacturer Suggested Retail Price (MSRP) caps, as outlined in the Program Guidelines.

Consumers have two pathways to receive an incentive: 1) at the dealership point-of-sale, or 2) direct to the consumer post-purchase. Through either claim, an account must be created, and a corresponding application submitted, through the online application portal with the following supporting documentation attached:

- a. Signed Consumer Attestation Form,
- b. Complete copy of the purchase/lease agreement,
- c. Proof of residency, generally a legible copy of a current Vermont driver's license, and
- d. Vehicle registration

CSE staff reviews this documentation for accuracy within 7-10 business days of submittal. Applications that have all correct documentation and meet all eligibility criteria are approved. If additional documentation is needed, CSE contacts the applicants or dealerships for more information.

Consumers applying through the post-purchase pathway must be in possession of their vehicle prior to applying. There is a 60-day window to apply after the purchase or lease of an eligible PEV. Once approved, consumers are mailed an incentive check within 6-8 weeks.

Dealerships wishing to offer point-of-sale or -lease incentives are required to have a Participating Dealer Agreement on file. Once this agreement is approved, dealerships are given a link to enroll as an administrator on the online application portal and submit Automated Clearing House (ACH) information prior to being able to submit applications. Once an account is set up, dealerships apply the corresponding incentive amount to the down-payment on eligible Vermonter's purchases/leases. If the incentive cannot be itemized on the contract, dealerships have the option to use the down payment verification template in the Program Guidelines, or an itemized OEM incentive sheet. Dealerships have 15 days from the date of sale/lease to apply for reimbursement. Once approved, dealerships receive incentive funding through ACH payment.

For both point-of-sale and consumer post-purchase applications, CSE batches approved applications and submits an invoice to VTrans monthly for the approved incentives amount. Once CSE receives payment from VTrans, CSE remits payment to applicants, either via ACH for enrolled dealerships, or via check for consumer post-purchase applications.

Replace Your Ride

The Replace Your Ride (RZR) program launched September 14th, providing a \$3,000 incentive to income-eligible consumers to replace an eligible ICE vehicle. The vehicle replacement must be combined with the purchase/lease of a new PEV, used PEV, or a request for a prepaid clean mobility card. The three RZR incentive pathways include:

1. **New PEV - Point-of-Sale Claim Only:** When scrapping and replacing with a new vehicle, the \$3,000 RZR rebate must be stacked with the New PEV Program incentive application.
2. **MileageSmart - Point-of-Sale Claim Only:** When scrapping and replacing with a used vehicle, the \$3,000 RZR rebate will only be approved if accompanied by a MileageSmart Used EV Incentive Program Commitment Letter.
3. **Other Clean Mobility Options - Preapproved Consumer Claim Only:** When scrapping and replacing with a prepaid clean mobility card, the \$3,000 RZR rebate is offered through a prepaid card to be used at eligible businesses that reduce or avoid vehicle miles traveled in single occupancy automobiles. These will be approved in accordance with Act 55 of Vermont Legislature. This component of the program launched on December 2, 2022.

Consumers interested in combining the RZR incentive with a New or Used PEV or Used PEV may only claim the incentive at a participating dealership as a point-of-sale claim on their down payment. For RZR plus New PEV incentives, the process for receiving the incentive and for dealership reimbursement is the same as described for New PEVs but with four additional documentation requirements, including:

1. A Replaced Vehicle Attestation Form
2. Scrapped Vehicle Registration
3. Scrapped Vehicle Title, and
4. Bill of sale (for the scrapped vehicle to the dealership)

For RZR plus Used Vehicle incentives, dealerships must still have a Participating Dealer Agreement and enroll through the application portal, but submissions are sent to CSE via email:

vermontPEV@energycenter.org. Supporting documentation required includes:

1. A Consumer Attestation Form
2. A Replaced Vehicle Attestation Form
3. Proof of residency, generally a legible copy of a current Vermont driver's license,
4. Scrapped Vehicle Registration
5. Scrapped Vehicle Title
6. Bill of sale (for the scrapped vehicle to the dealership), and

7. A MileageSmart Used EV Incentive Program Commitment Letter

Consumers interested in receiving the RYR incentive directly have the option to get preapproved and utilize a participating scrapping partner to scrap their ICE vehicle. Consumers submit applications for preapproval to CSE via email: vermontPEV@energycenter.org. Supporting documentation required includes:

1. A Consumer Attestation Form
2. Proof of residency, generally a legible copy of a current Vermont driver's license,
3. Scrapped Vehicle Registration
4. Scrapped Vehicle Title, and a
5. Copy of the vehicle's Inspection Sticker

The documentation outlines the intended scrapping partner that CSE will reach out to prior to confirming preapproval. Once preapproved, consumers have 30 days to scrap their ICE vehicle at their chosen scrapping partner and submit their final document for approval:

6. Bill of Sale/Receipt showing proper transfer of the vehicle to the eligible scrapping partner.

Once approved, consumers are mailed a prepaid VISA card from PEX, a third-party service provider that offers a platform to distribute and manage prepaid debit cards. CSE works with PEX to create a whitelist of participating clean mobility partners at which participants can utilize the VISA card. Upon application approval, CSE loads the applicant's information and the \$3,000 incentive amount onto the card, and initiates mailing of the card to the recipient. Once the recipient confirms receipt of the card, CSE activates the card, allowing use at whitelisted participating partners. CSE's administrative PEX dashboard allows issuance of replacement cards as needed, returning the remaining card balance funding back into the account. Mobility card information, including some limited transaction information, is tracked within the PEX dashboard, while raw application information, such as applicant submission data, processing documents, and application status is tracked outside of the PEX platform.

E-Bikes

The E-Bikes program provides an incentive to income-eligible Vermont individuals for a maximum of one electric bicycle rebate over the life of the program. E-bikes must be equipped with a battery supplying 750 watts of power or less and must be sold as new. E-bike incentive amounts vary by rebate type (Standard or Enhanced) and by purchase price. For Standard rebate applicants, the incentive amount is either \$250 for e-bikes with a purchase price equal to or greater than \$833.33, or 30% of the sale price for e-bikes with a purchase price of less than \$833.33. Enhanced rebate applicants receive an incentive of \$400 for e-bikes with a purchase price equal to or greater than \$800, and receive an incentive of 50% of the sale price for e-bikes with a purchase price of \$800 or less.

There are two options to receive the rebate: 1) at the point-of-sale for participating retailers, or 2) through a consumer post-sale application. Participating retailers apply the incentive amount directly to

the sale after collecting a complete and signed Consumer Attestation Form and confirming proof of residency. Retailers then submit an application through the E-Bikes Application Portal within 15 days of sale, including all supporting documentation. CSE reviews applications for accuracy. Once approved, retailers are mailed checks for incentives monthly. Alternatively, consumers can apply directly after purchase and delivery of an eligible e-bike if choosing to purchase their e-bike online or through another retailer. Consumers follow a similar submission process but have 60 days to submit their application post-sale. For both types of claims, supporting documentation includes an online application submission with the following documents attached:

1. Consumer E-bike Attestation Form,
2. Proof of residency, generally a legible copy of a current Vermont driver’s license, and
3. Sales Receipt

iv. Summary of Incentive Volume and Figures

New PEV

Participation by Rebate Level and Application Type

From July 1, 2022, through November 30, 2022, the New PEV program approved 264 applications. 31% of approved applications were consumer post-purchase and 69% were dealer point-of-sale, with 47% of applications receiving the Standard Rebate and 53% receiving the Enhanced Rebate (**Table 6**). The proportion of Standard Rebates received at the dealer point-of-sale (67%) was approximately equivalent to the proportion of Enhanced Rebates received at the dealer point-of-sale (70%), indicating that the point-of-sale pathway was preferable for both type of applicants.

Application Pathway	Standard Rebate	Enhanced Rebate	Total Approved Applications
Consumer post-purchase	40	42	82
Dealership point-of-sale	83	99	182
Grand Total	123	141	264

Table 6 Approved Applications by Application Pathway and Type

Figure 1 below shows approved applications by month from July 1 through November 30, 2022, with a monthly average of 53 applications.

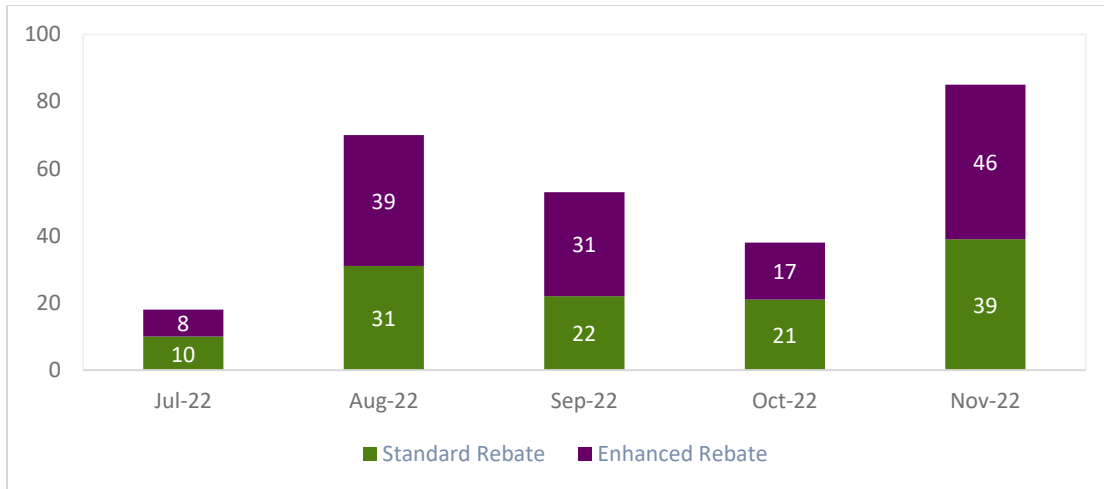


Figure 1 Approved Application by Date Approved and Rebate Level

Participation by Vehicle Category

BEVs were the most popular vehicle type by volume, representing 72% of approved applications compared to 28% PHEVs (**Table 7**).

Vehicle Category	Approved Applications
BEV	189 (72%)
PHEV	75 (28%)
Total	264

Table 7 Approved Applications by Vehicle Category

This trend was consistent for both the Standard and Enhanced Rebates, where BEVs made up 68% and 74% of approved applications, respectively (**Figure 2**).

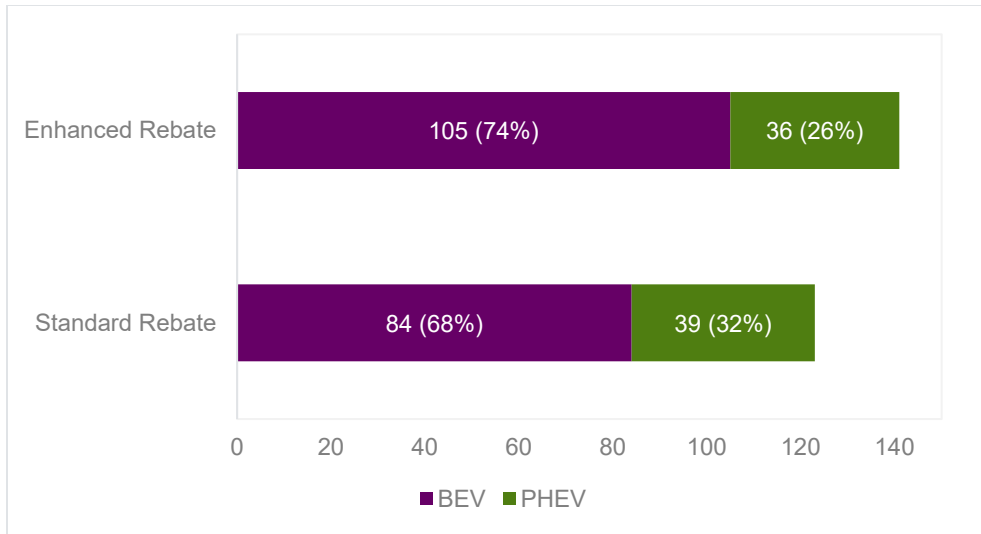


Figure 2 Approved Applications by Vehicle Category

Participation by Vehicle Make

The most popular vehicle make was Chevrolet with 35% of all approved applications, all of which were BEVs (Table 8). Toyota was the second most popular make, with 18% of applications, all of which were PHEVs.

Vehicle Make	Approved Applications
Chevrolet	92 (35%)
Toyota	48 (18%)
Volkswagen	33 (13%)
Hyundai	33 (13%)
Nissan	28 (11%)
Ford	12 (5%)
Kia	9 (3%)
MINI	4 (2%)
Subaru	3 (1%)
Tesla	1 (0.4%)
Mitsubishi	1 (0.4%)
Grand Total	264

Table 8 Applications by Vehicle Make

Figure 3 below shows participation by vehicle make and Standard versus Enhanced rebates. The top five manufacturers, Chevrolet, Toyota, Volkswagen, Hyundai, and Nissan constituted 89% of all approved applications. Chevrolet was the most popular make for Enhanced rebates, accounting for 40% (n=56) of all Enhanced rebate applications compared to 19% (n=27) of Enhanced rebate applications for Toyota.

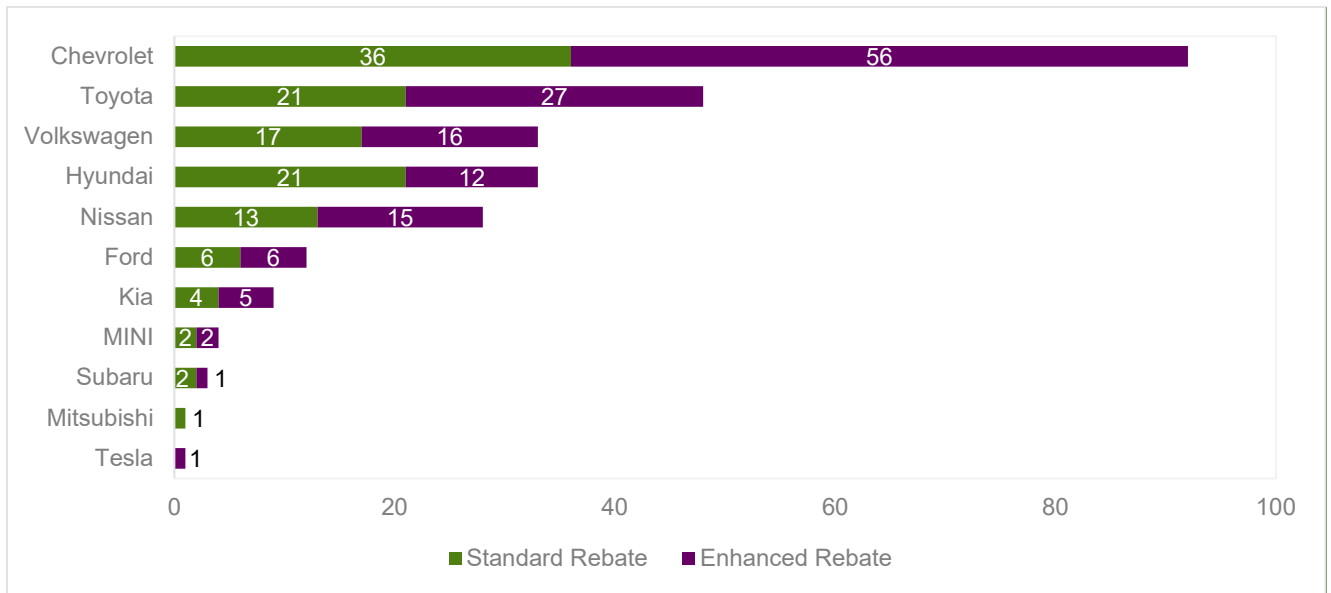


Figure 3 Approved Applications by Vehicle Make and Rebate Type

Participation by Vehicle Model

Chevrolet Bolt EUV (n=66) was the most popular vehicle model followed by the Volkswagen ID.4 (n=33) and Toyota RAV4 Prime (n=28). This trend was consistent for both Standard and Enhanced rebate applications (**Figure 4**).

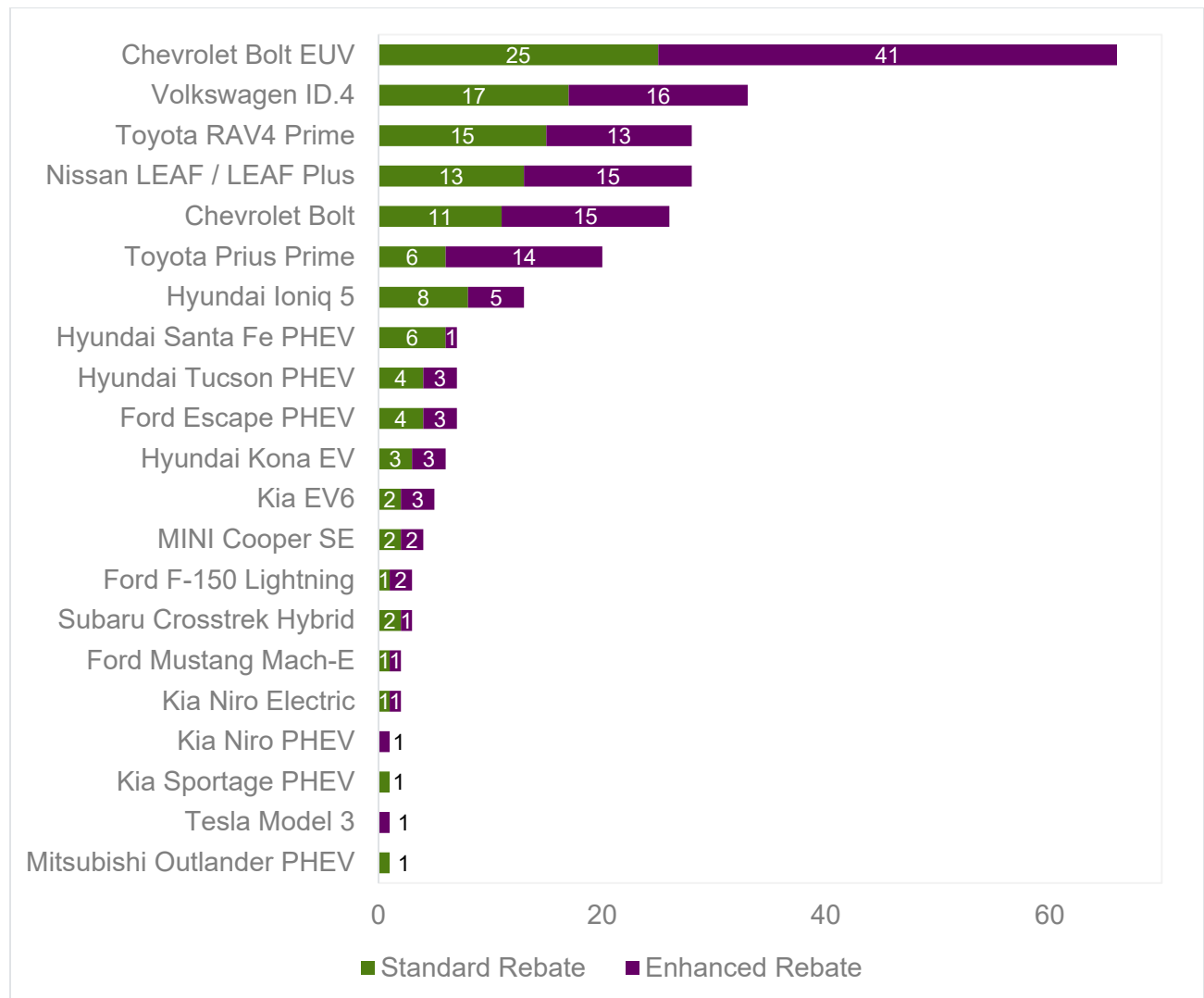


Figure 4 Applications by Vehicle Make/Model and Rebate Type

The most popular BEV vehicle model was the Chevrolet Bolt EUV (25%), and the most popular PHEV vehicle model was the Toyota RAV4 Prime (11%), despite the fact that the Toyota RAV4 Prime became ineligible in early June due to an increase in its MSRP (**Table 9**).

BEV	Approved Applications
Chevrolet Bolt EUV	66 (25%)
Volkswagen ID.4	33 (13%)
Nissan LEAF / LEAF Plus	28 (11%)
Chevrolet Bolt	26 (10%)
Hyundai Ioniq 5	13 (5%)
Hyundai Kona EV	6 (2%)
Kia EV6	5 (2%)
MINI Cooper SE	4 (2%)
Ford F-150 Lightning	3 (1%)
Ford Mustang Mach-E	2 (1%)
Kia Niro Electric	2 (1%)
Tesla Model 3 ²	1 (0.4%)
PHEV	Approved Applications
Toyota RAV4 Prime ³	28 (11%)
Toyota Prius Prime	20 (8%)
Ford Escape PHEV	7 (3%)
Hyundai Santa Fe PHEV	7 (3%)
Hyundai Tucson PHEV	7 (3%)
Subaru Crosstrek Hybrid	3 (1%)
Kia Niro PHEV	1 (0.4%)
Kia Sportage PHEV	1 (0.4%)
Mitsubishi Outlander PHEV	1 (0.4%)
Grand Total	264

Table 9 Applications by Vehicle Model and Category

Participation by Geography

Figure 5 shows program participation by County. The highest number of approved applications were from Chittenden County (25%) followed by Washington County (17%) and Windsor County (11%). Applications are relatively well spread across the state, with strong participation from counties with High Environmental Disparity Index scores, like Rutland and Addison County.⁴ Rutland and Addison County also had disproportionately high participation in the Enhanced rebate (Figure 6).

² Model 3 ordered/purchased on/before 10/5/2021

³ RAV4 Primes ordered/purchased on/before 6/3/2022

⁴ Qing Ren and Bindu Panikkar (2021, Vermont Environmental Disparity Index, University of Vermont. Accessible at: <https://www.arcgis.com/apps/webappviewer/index.html?id=68a9290bde0c42529460e1b8deee8368>

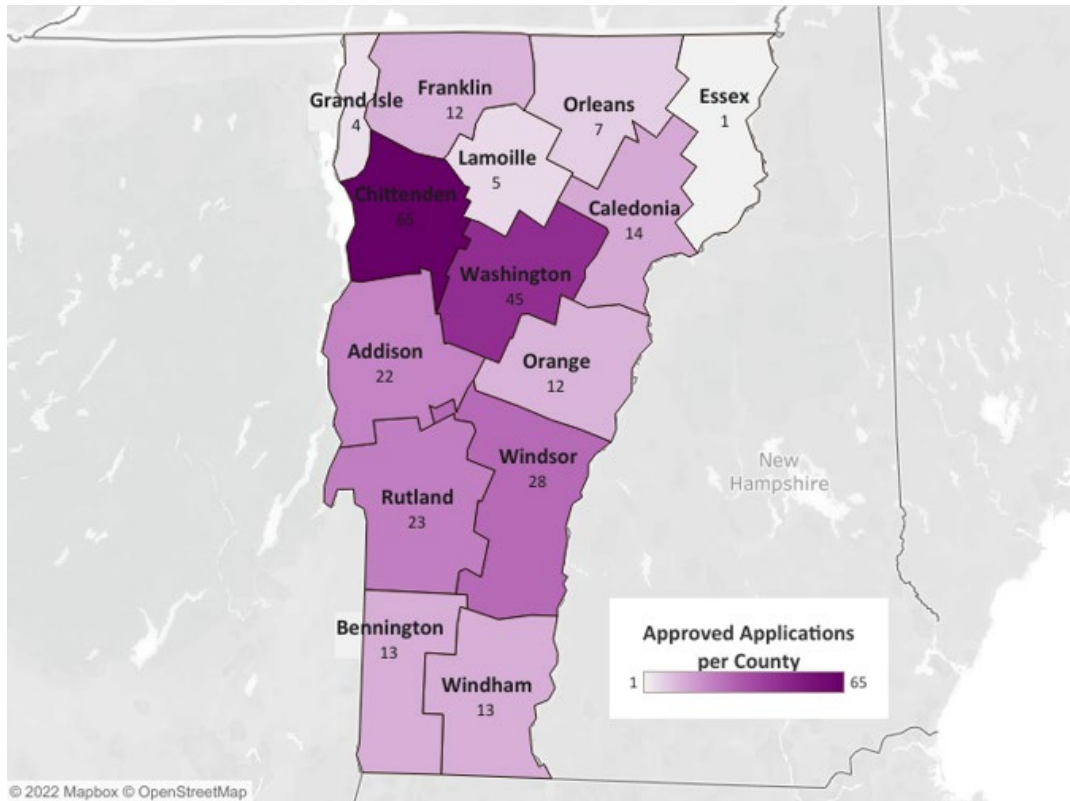


Figure 5 Approved Applications by County

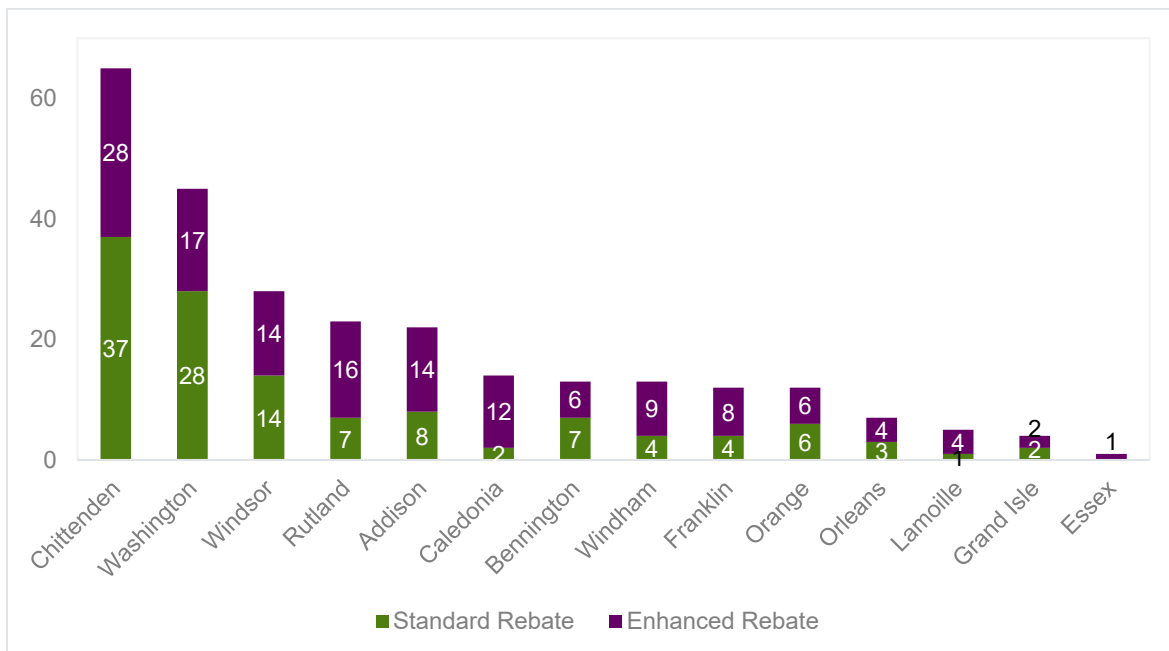


Figure 6 Participation by County and Rebate Type

Normalizing for population, **Figure 7** shows that Washington County received the highest per capita incentive funding at \$21,235 per 10,000 people, while Lamoille County received the lowest amount of incentive funds per capita.

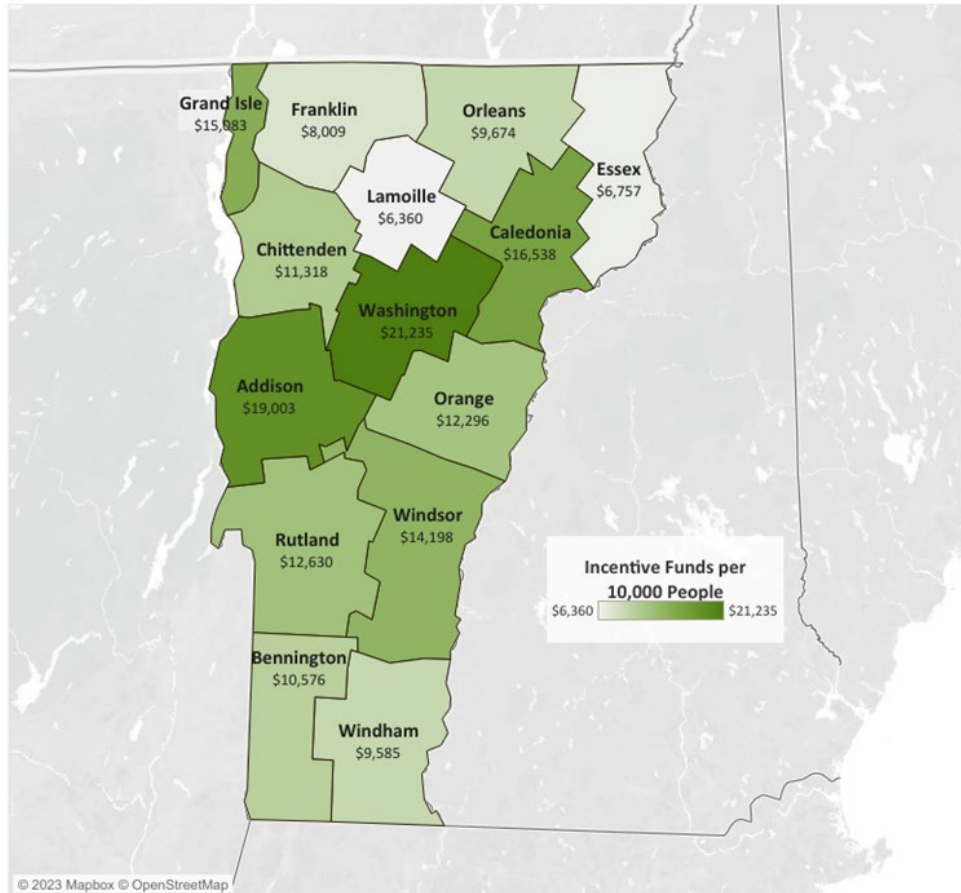


Figure 7 New PEV Incentive Expenditure per Capita by County

Replace Your Ride

The RYR program launched in mid-September and has recently begun to see participation pick up in November. To date, seven RYR applications have been approved – four of these applications paired the RYR incentive with a New PEV incentive, and three paired the RYR incentive with a MileageSmart Used PEV purchase (**Figure 8**).

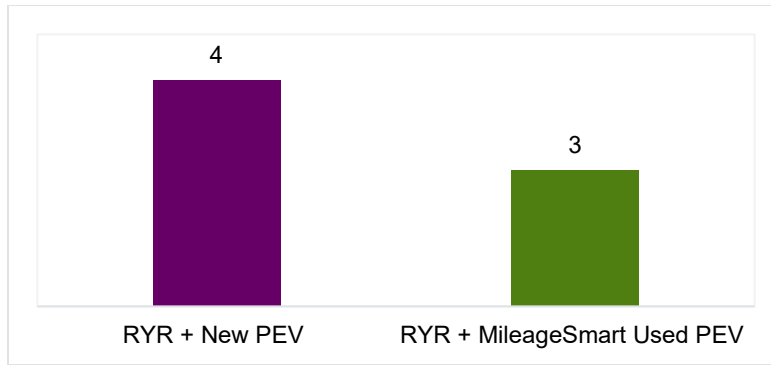


Figure 8 RYR Applications Paired with New PEV and MileageSmart

RYR incentives paired with New PEV incentives have been used exclusively for BEVs, including three Nissan Leafs and one Chevrolet Bolt, while the RYR incentives paired with a used PEV purchase have been used for two PHEVs (Chevrolet Volt and Kia Optima) and one BEV (Kia Niro). **Table 10** below details this below:

Submission Date	Scrapped Vehicle			Replacement Vehicle		
	Make/Model	Model Year	Odometer (miles)	Vehicle Type	Make/Model	Model Year
10/26/2022	Chevrolet Cruze	2011	57,840	Used PHEV	Chevrolet Volt	2017
11/15/2022	Nissan VRS	2008	92,793	Used PHEV	Kia Optima	2017
11/18/2022	Mazda MZ3	2008	138,061	Used BEV	Kia Niro	2020
10/13/2022	Subaru Legacy	2005	215,162	New BEV	Nissan Leaf	2023
10/24/2022	Volvo V70	2006	204,990	New BEV	Chevrolet Bolt	2023
11/3/2022	Honda Civic	2008	195,671	New BEV	Nissan Leaf	2023
11/16/2022	Honda Pilot	2008	201,884	New BEV	Nissan Leaf	2023

Table 10 Vehicle Model Scrapped and Replacement Vehicles

E-Bikes

Participation by Rebate Level and Application Type

The Vermont E-Bike Incentive Program approved a total of 279 applications between July 27, 2022, and September 22, 2022. Of these approved applications, 79% were consumer post-purchase claims compared to 21% retailer point-of-sale claims, and 56% of applications were income-qualified Enhanced rebates, compared to 44% Standard rebates (**Table 11**).

Application Pathway	Standard Rebate	Enhanced Rebate	Total Approved Applications
Consumer post-purchase	101	120	221
Retailer point-of-sale	23	35	58
Total	124	155	279

Table 11 E-bike Applications by Application Pathway

Participation by E-Bike Purchase Price and Incentive Amounts

Table 12, below shows approved applications and incentive amount by e-bike purchase price. 118 of 124 Standard Rebate applications received a rebate of \$250 for e-bikes with a purchase price greater than \$833.33 and six applications received a rebate amount between \$180 and \$210 for e-bikes with a purchase price less than \$833.33. 146 of 155 Enhanced rebate applications received a \$400 rebate for e-bikes with a purchase price greater than \$800 and nine Enhanced rebate applications received a rebate amount between \$250 and \$395 for e-bikes with a purchase price less than \$800.

Rebate Type	E-bike Purchase Price (Before sales tax)	Incentive Amount	Approved Applications	Average Incentive
Standard Rebate	Less than \$833.33	30% of sale price	6	\$247.77
Standard Rebate	At or greater than \$833.33	\$250	118	
Enhanced Rebate	Less than \$800.00	50% of sale price	9	\$395.45
Enhanced Rebate	At or greater than \$800.00	\$400	146	

Table 12 Applications by E-bike Purchase Price

Distribution of Applications by E-Bike Purchase Price

Figure 9 below shows the distribution of applications by E-bike purchase price. The majority of applicants purchased an E-bike ranging between \$1500.00 and \$1999.99.

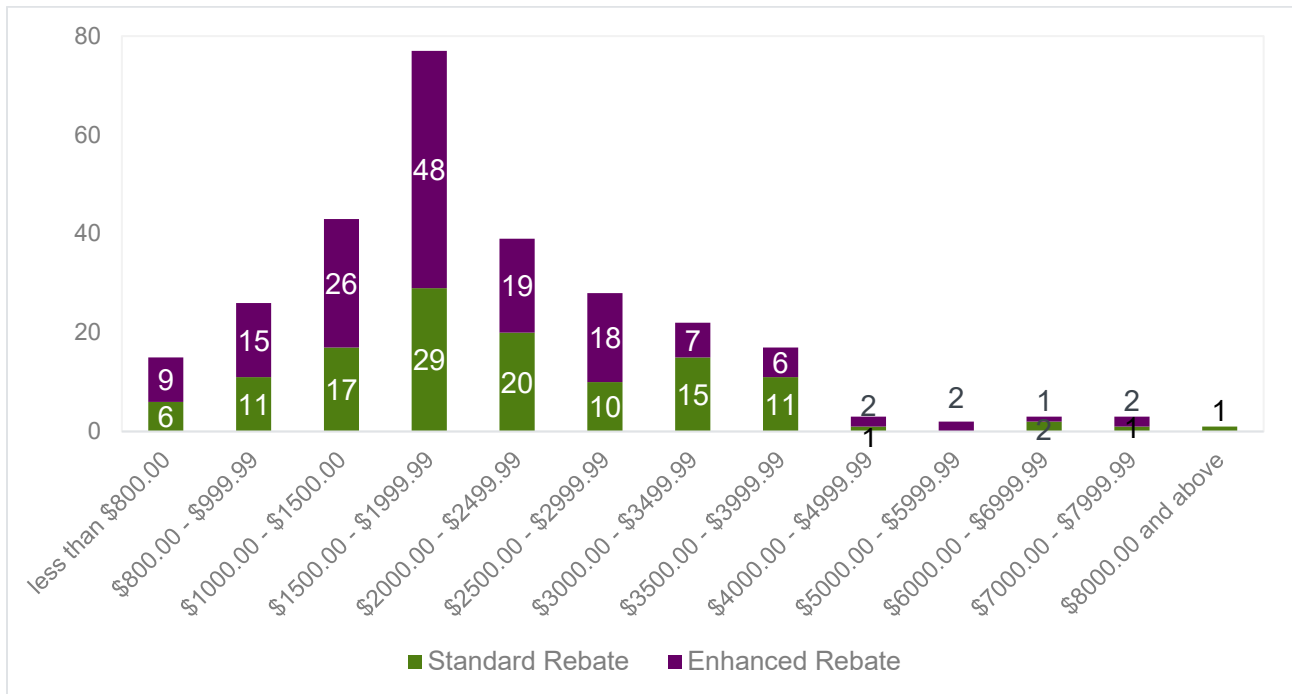


Figure 9 Distribution of Applications by E-bike Purchase Price

The average E-bike purchase price for all applications was \$2175.06, with Standard rebate applications having a higher average purchase price (\$2,328) compared to Enhanced rebate applications (\$2,053; **Table 13**). On average, the Standard rebate covered 14% of the e-bike purchase price and the Enhanced rebate covered 24% of the e-bike purchase price.

Rebate Level	Average E-bike Purchase Price	Average Incentive % of Purchase Price
Standard Rebate	\$2327.58	14%
Enhanced Rebate	\$2053.05	24%
Overall	\$2,175.06	20%

Table 13 Average E-bike Purchase Price by Rebate Type

Participation by E-Bike Manufacturers

Figure 10 below shows the top ten e-bike manufacturers by application number. The most popular manufacturers were Rad Power Bikes, with 18% of approved applications, followed by Aventon at 7% and Gazelle at 7%. The program approved applications for 62 different e-bike manufacturers, representing a broad selection of offerings for potential e-bike customers.

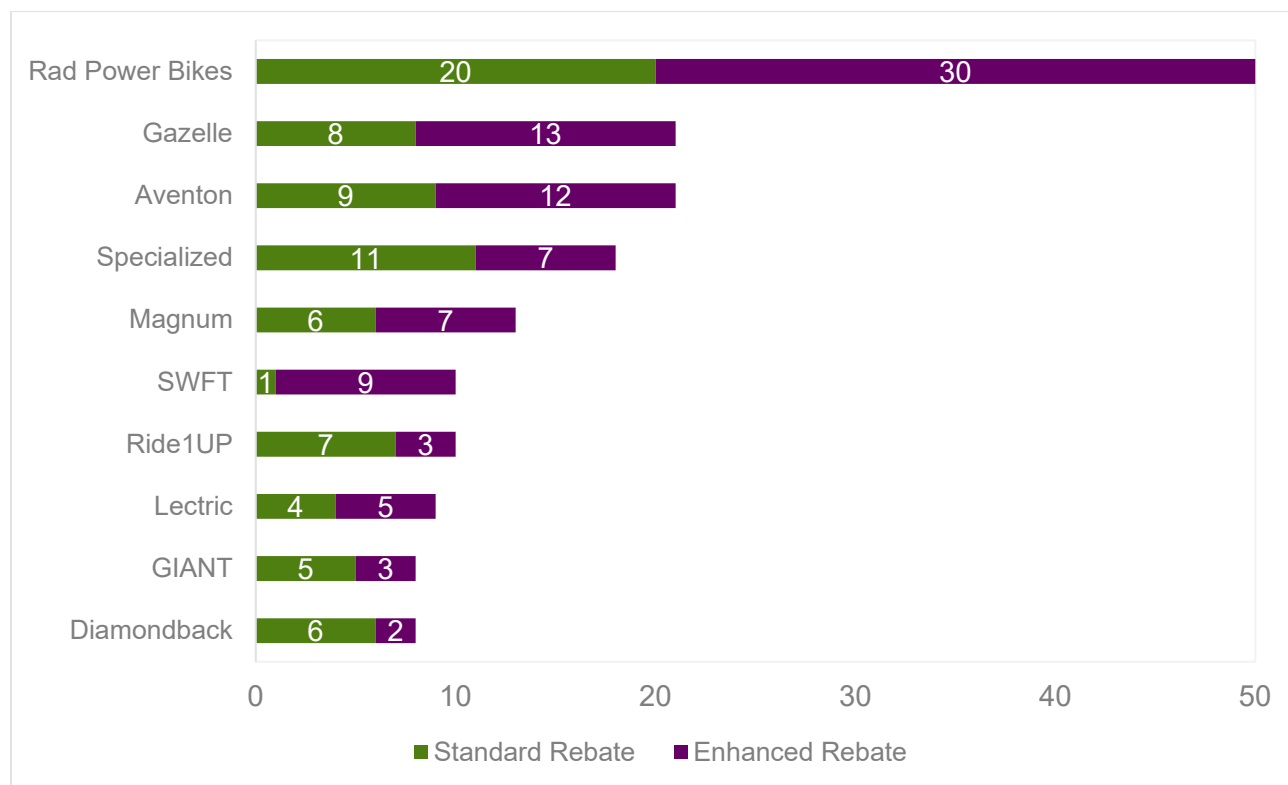


Figure 10 Top 10 E-Bike Manufacturers by Rebate Type

E-Bike Program Participation by Geography

Figure 11 below shows E-Bike Program participation by County. The highest number of approved applications were from Chittenden County at 28% followed by 13% in Washington County and 9% in

Rutland County. **Figure 12** on the next page shows the breakdown of program participation by rebate level received by an applicant.

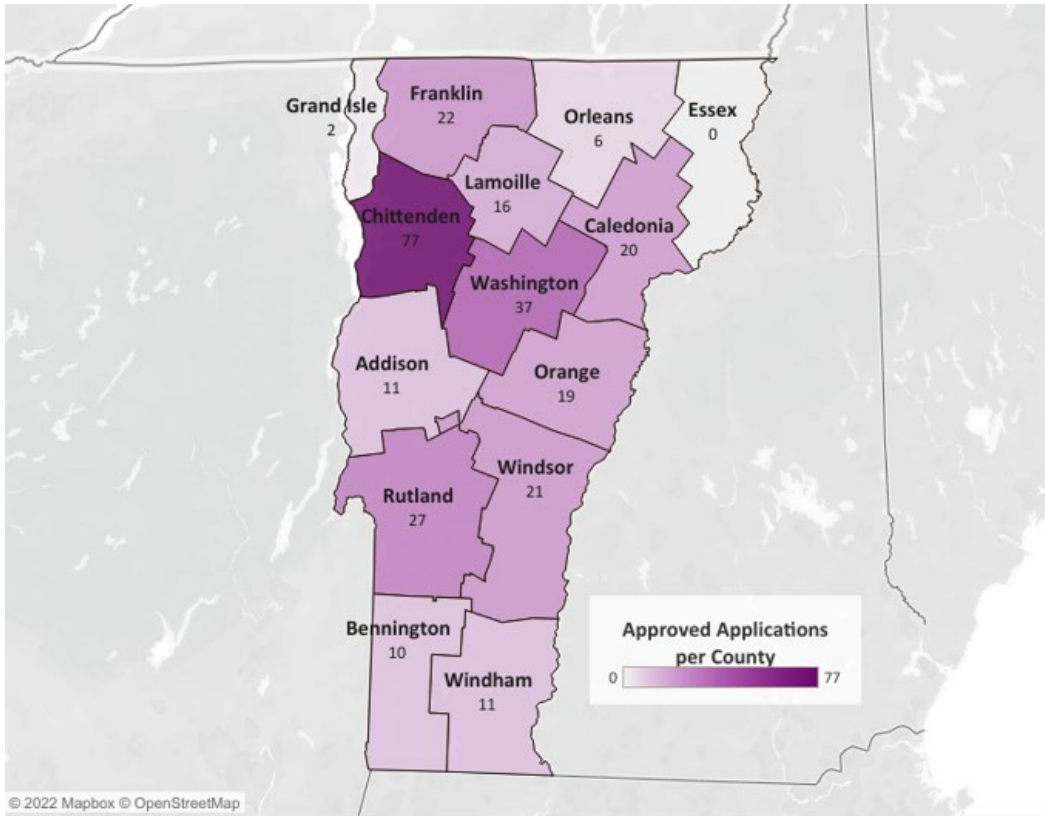


Figure 11 Approved E-bike Applications by County

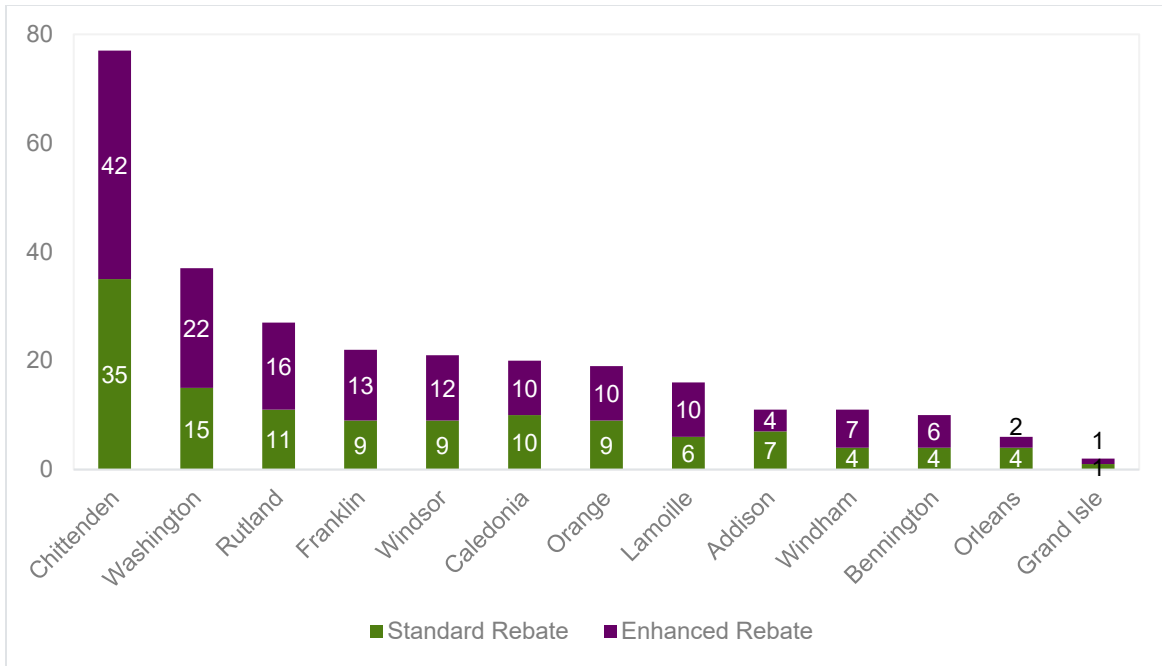


Figure 12 E-bike Rebate Type by County

Figure 13 below shows E-Bike Program incentive expenditures per capita by County. Orange County received the highest per capita incentive funding at \$2,135 per 10,000 people. Essex County did not have any e-bike applications and thus had the lowest per capita incentive expenditure.

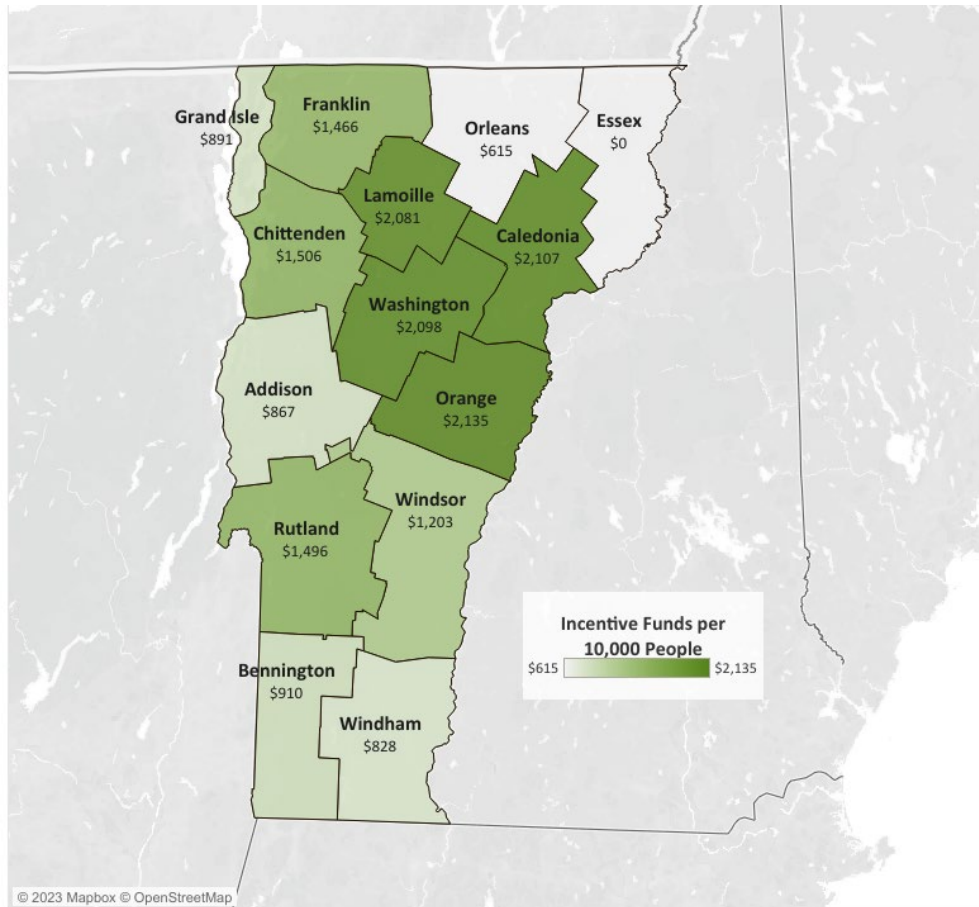


Figure 13 E-Bike Program Incentive Expenditure per Capita by County

Participation by Approved Retailers

The E-Bikes Program approved 58 retailer point-of-sale applications across nine participating retailers, representing 21% of total approved e-bike applications. Hanover Adventure Tours and North Star Sports were leading retailers, together accounting for 38% of all retailer applications (**Figure 14**).

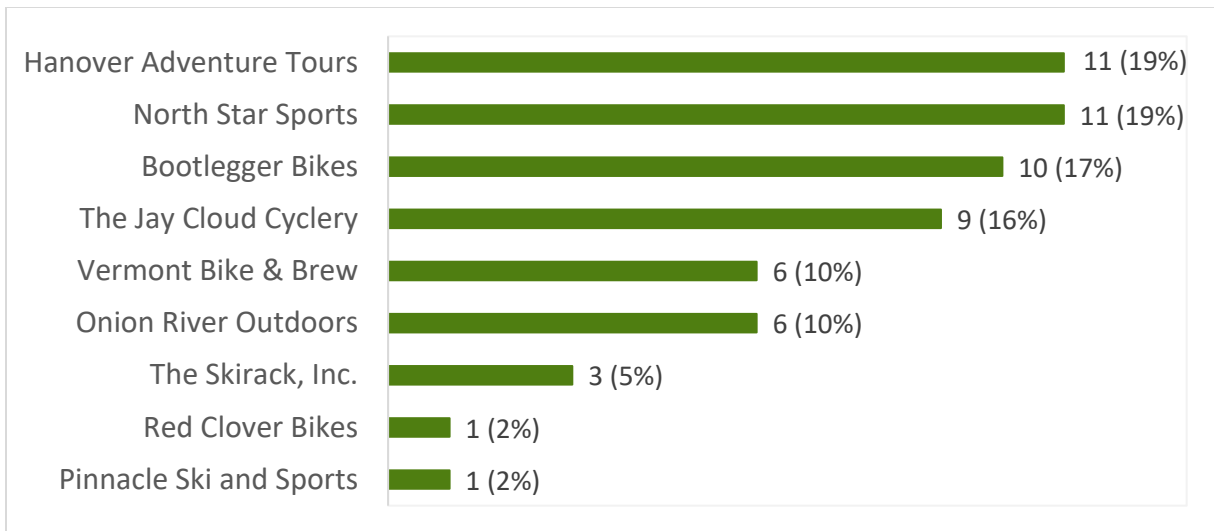


Figure 14 Approved E-bike Applications by Participating Retailer

v. Summary of Marketing and Outreach Efforts

CSE partners with VEIC to support local engagement and outreach for the New PEV, RYR and E-Bikes programs. VEIC coordinates the Drive Electric Vermont (DEV) program and operates the Efficiency Vermont energy efficiency utility. A primary channel for outreach on the incentive offerings is the DEV website. VEIC redesigned the DEV incentive resources to include a new page for State incentive information. CSE has also worked with VTrans to issue press releases announcing important milestones in program availability, resulting in significant earned media value. VEIC is developing a marketing and outreach plan anticipated to be completed in February 2023. This guide will be used to guide 2023 engagement efforts now that all three incentive programs have launched.

Through the end of 2022, VEIC spent approximately \$44,500 on outreach and education activities through its subcontract with CSE covering the State incentive programs. About 30% of that cost (\$13,200) covered dealer/retailer support and community-based organization (CBO) engagement, with the remaining funding going to support broader community education and engagement on these programs. This included several updates to DEV website resources on State of Vermont incentives as well as direct outreach to Vermonters at events and other consumer and stakeholder engagement opportunities as described in the sections below covering the New PEV, RYR and E-Bike programs.

New PEV

VEIC'S marketing and outreach efforts focused on supporting the re-launch of the New PEV incentive program and disseminating information on incentive offerings through the DEV website.

In addition to website updates, VEIC engaged dealer and retailer stakeholders, facilitated retailer training sessions on each of the State incentive programs and helped recruit dealers to participate in point-of-sale incentive offerings. For the New PEV program, VEIC led outreach to the dealer community

prior to program launch. The Vermont Vehicle and Automotive Distributors Association (VADA) supported VEIC's efforts to notify new car dealers of the change in administration and application process. VEIC delivered training on the new process for dealership point-of-sale incentives in June 2022 with 49 individual attendees. This session was recorded and provided to all participants and additional dealer staff as needed following the program launch. As of January 2023, 56 new car dealers signed up to participate in the New PEV point-of-sale incentive program.

The partnership with dealers to offer incentives at the point-of-sale streamlines program administration and provides a better customer experience. Lower income purchasers especially benefit in taking advantage of point-of-sale offerings as they increase up-front equity in vehicle purchases or leases, improving financing options and reducing financing costs associated with a mail-in rebate arriving up to two months following incentive application submittals. As discussed in *Section iv. Summary of Incentive Volume and Figures*, 70% of Enhanced rebates were applied at the point-of-sale.

Complementary Initiatives

Separate from VEIC's subcontract with CSE funded by VTrans, VEIC has supported general consumer outreach on PEV purchases through Efficiency Vermont's (EVT) ongoing PEV consumer education and awareness activities. This includes EVT's multi-channel PEV marketing campaign advanced through their Act 151 program activities. Act 151 was enacted by the Vermont Legislature in 2020 and provides electric energy efficiency utilities (EELs) the opportunity to support transportation electrification. Act 151 authorized these activities for a three-year period, ending at the close of 2023. EVT is investing approximately \$500,000 per year into EV marketing activities that support traffic to the Drive Electric Vermont website, which contains information on the State's clean transportation incentive offerings. Efficiency Vermont PEV Campaign tactics have included:

- Web display advertisements
- Broadcast and online video ads
- Radio live reads
- Social media ads
- Front Porch Forum posts
- Audio ads for radio and audio streaming
- Bus wraps
- BTV airport EV installation
- Seven Days sponsored articles promoting State PEV Incentives
- EEN EV dealer point-of-sale materials

Pageviews to the DEV website incentive resource increased 8,695% since the campaign launched. Top traffic sources were organic (a testament to DEV's search engine optimized web content), direct traffic supported by out-of-home tactics, Google ads, and referrals.

VEIC discussed the opportunity to leverage the EVT campaign in support of PEV incentive awareness with CSE and VTrans and determined the scale of the EVT investment would make further efforts for a

VTrans-funded State PEV incentive marketing campaign unnecessary while the EVT Act 151 campaign remains active.

VEIC facilitates quarterly Drive Electric Vermont (DEV) stakeholder meetings where updates regarding RYR, E-bikes, and PEV incentives are shared. The DEV stakeholder contact list includes 250 individuals, representing more than 130 organizations, most of which are based in Vermont. VEIC also supported 16 in-person PEV-focused events between July and October 2022. These were often sponsored by local Town Energy Committees, and they provided opportunities to promote the State incentives. For the seven events VEIC was unable to attend in-person, hosts were sent brochures and flyers containing State incentive information for distribution. VEIC also supported a paid partnership with LiveGreenVT which provided opportunities to share insights via their outreach channels.

Replace Your Ride

VEIC completed updates to the DEV website with information to support the initial launch of RYR as well as phase 2 with consumer direct options for a prepaid mobility card. The DEV site includes a listing of RYR participating dealers, retailers, and scrapping partners. A press release was issued on the launch of the program with many local and national sources reporting on the new offering. A Seven Days article published in November through EVT sponsorship included promotion of all State incentives including RYR. VEIC also collaborated with the Green Savings Smart program on LMI PEV incentive offerings, including a webinar covering PEV incentives available to Vermonters.

VEIC organized a training session for dealers in September 2022 on RYR incentive processing with 29 registrants and 16 attendees. This session was also recorded and distributed to the dealer community to provide opportunities for managers and sales staff to understand the program requirements and opportunities to support their customers. As of January 5, 2023, 18 dealers had signed the necessary participating dealer agreement to offer RYR incentives at the point-of-sale.

E-Bikes

VEIC completed updates to the DEV website with information on the E-bike incentive offerings and supported outreach to bike retailers to encourage participation in the point-of-sale incentives. E-bike incentive funding was exhausted before additional outreach efforts were made. VEIC developed content for an informational sheet for participating retailers that could be used if additional funds are appropriated for the program in 2023.

VEIC also organized outreach to bicycle retailers selling E-bikes across the state. Staff contacted 52 retailers with information on the program and an invitation to attend an online training session in July 2022 with 30 registrants and 18 attendees. This session was recorded and made available following the session. Fifteen retailers were signed on to offer point-of-sale E-bike incentives at the close of program funding availability.

vi. Summary and Key Findings from Consumer Survey

VEIC developed an Incentive Recipient Consumer Survey⁵ for 1,134 Vermont New PEV program participants prior to CSE’s administration of the program between February 2019 and January 2022. The survey was launched in February 2022, and key findings are included here.

The consumer survey asked program participants questions on motivations and concerns related to PEV purchase, experience applying for the rebate, and demographic and household information of the rebated participants. Almost all respondents to this survey indicated the state incentive had some importance in making their purchase of a PEV possible. Lower income respondents were more likely to indicate that the incentive was “extremely important” than higher-income Vermonters (**Figure 15**).

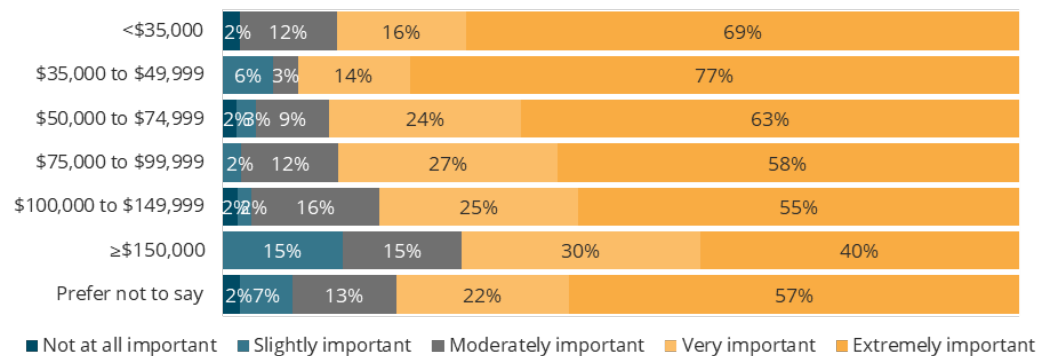


Figure 15 Importance of State Incentive to PEV Purchase Decision, by Income Range

Most respondents were satisfied with the process of applying for and receiving the incentive. Those who received the incentive through their dealer were particularly satisfied with the process. Half of respondents reported learning about the state incentive from either their salesperson (25%) or the Drive Electric Vermont website (25%). Other relatively common sources included their electrical utility, a friend or family member who drives a PEV, or a non-profit organization.

The Vermont Public Service Department engaged Cadmus to conduct an additional consumer survey of program participants. CSE will conduct additional consumer surveys in winter 2023, the results of which will be included in future Annual Reports. Additionally, CSE will conduct an E-Bike program consumer survey in February 2023. The survey is designed to understand applicants’ general demographics, measure program satisfaction, understand factors motivating the e-bike purchase decision, and measure the initial change in recipients’ travel patterns as a result of acquiring an e-bike.

⁵ The full report is available at: <https://www.drivetricelectricvt.com/Media/Default/docs/reports/veic-state-of-vermont-ev-incentive-recipient-survey-march-2022.pdf>

vii. Caret Analysis of New PEV, Replace Your Ride, and MileageSmart

Caret-EV[®] Planner is a patent-pending modeling tool developed by CSE to analyze the impacts of EV incentives. Analysis is underway that models the impact of Vermont's EV rebates (New PEV, MileageSmart and RYR) and federal EV tax credits through the Inflation Reduction Act of 2022 (IRA) on EV adoption and GHG emissions reductions in Vermont. The three scenarios under analysis are as follows:

Scenario 1 – Projected progress towards the Advanced Clean Cars II goal that 100% of all new passenger cars, trucks and SUV's sold will be zero-emissions vehicles (ZEV) by 2035, under current Vermont state EV rebate and federal tax credit policy, with a \$20,000 per vehicle non-compliance penalty.

Scenario 2 – This scenario will explore the impact of changing several features of the current Vermont EV rebate policy and then holding them steady over time: the New PEV incentive amount, the vehicle MSRP cap, and the purchaser income cap. Analysis for this scenario will comprise approximately 10 different projections for each of the three features, illustrating the trend over time in outcomes resulting from changing each of them.

Scenario 3 – This scenario explores the impact of changing (i.e. lowering) the New PEV incentive amount during the course of the program duration, as the EV market becomes more mature. For example, providing a higher incentive in earlier years to spur adoption, and a lower incentive in later years may result in more rapid EV adoption at a lower lifetime program cost as EV costs decline and consumer preferences evolve.

In all three scenarios, CSE will use program data to explore the impact of actual program participation, which can be influenced by factors such as vehicle supply vis-a-vis projected demand for EVs resulting from available rebates and tax credits. Caret projections reflect a general trend toward phaseout of PHEVs, which is reflective of national purchasing behavior and announced plans by major OEMs to move to fully electric vehicles.

Outcomes of all model projection scenarios will be presented in a separate document and compared with the state's various goals:

- **VT NEVI State plan:** Increase total registrations of EVs across all vehicle classes to 27,000 by 2025 and 126,000 by 2030 to achieve GHG reduction goals.
- **Advanced Clean Cars II:** Increase annual percentage of new passenger car, truck and SUV sales to 100% ZEVs by 2035.
- **Climate Action Plan:** Achieve net zero emissions by 2050 across all sectors.
- **Global Warming Solutions Act of 2020 (GWSA):** The Act requires reductions in Vermont's GHG emissions tied to three time periods: 2025, 2030, and 2050. Vermont is required to reduce total

transportation GHG emissions by no less than 26% below 2005 GHG emission levels by January 1, 2025; by no less than 40% below 1990 GHG emission levels by January 1, 2030; and no less than 80% below 1990 GHG emission levels by January 1, 2050.

viii. Challenges and Recommended Program Improvements

New PEV

Since re-opening to applications in July 2022, the New PEV program has issued an average of approximately 53 applications per month. While participation is relatively strong on a per capita basis compared to other northeast EV incentive programs (**Table 14**), this puts the program on pace to allocate just over \$5,000,000 of incentive funds through April 2025, well short of the total incentive budget.

Program/State	2022 population	Approved applications (July '22 – Nov. '22)	Approved applications per 1,000 residents
CHEAPR (CT)	3,626,205	583	0.16
MOR-EV (MA)	6,981,974	1,267	0.18
Charge Up New Jersey (NJ)	9,261,699	1,293	0.14
Drive Clean (NY)	19,677,151	12,518	0.64
Vermont New PEV (VT)	647,064	264	0.41

Table 14 EV Incentive Program Application Rates by State Using U.S. Census Bureau Data⁶

The analysis performed in Caret EV Planner suggests there is more than sufficient demand for EVs in Vermont under current program conditions, assuming full program participation. Low participation rates are likely a result of a combination of factors including 1) lack of dealer inventory and excessive wait times for EVs, discouraging buyers who cannot defer a vehicle purchase, 2) recent inflation-related price increases that have rendered popular EV models ineligible under New PEV program rules, and 3) low awareness of the program on the part of consumers and auto dealers. EV inventory is expected to improve in 2023 as supply chain constraints ease and manufacturers increase production capacity.

CSE offers two recommendations to ensure sustained participation in the New PEV program, and progress towards Vermont’s EV adoption goals.

⁶ Annual Estimates of the Resident Population for the United States, Regions, States, District of Columbia, and Puerto Rico: April 1, 2020, to July 1, 2022 (NST-EST2022-POP). U.S. Census Bureau. December 2022

- 1. Increase the MSRP cap** – CSE recommends increasing the MSRP cap to at least \$45,000 for PHEVs, and \$50,000 for BEVs. The New PEV program currently has one of the strictest MSRP caps of any CSE-administered program (**Table 15**).

Program	Price Cap
CHEAPR (Connecticut)	\$50,000 MSRP
MOR-EV (Massachusetts)	\$50,000 (PHEV); \$55,000 (BEV & FCEV) Purchase Price
Charge Up New Jersey	\$55,000 MSRP
Drive Clean (New York)	\$42,000 base model MSRP; MSRP >\$42,000 eligible for reduced rebate (\$500)
Vermont New PEV	\$40,000 (PHEV); \$45,000 (BEV) base model MSRP

Table 15 Price Caps by EV Incentive Program

As vehicle prices have increased recently due to inflation, popular models like the Toyota RAV4 Prime and Tesla Model 3 have become ineligible. These models constitute a sizable proportion of applications in other EV incentive programs in the northeast (**Table 16**), and the RAV4 Prime was a popular model in the Vermont program when it was eligible.

Model	Vehicle Category	Base MSRP	% of rebates by vehicle category (2022)			
			CHEAPR (CT)	Drive Clean (NY)	MOR-EV (MA)	Charge Up NJ
Toyota RAV4 Prime	PHEV	\$41,590	52%	34%	48%	54%
Tesla Model 3 RWD	BEV	\$46,990	23%*	24%	16%**	25%

*Tesla Model 3 only became eligible for CHEAPR in July 2022 when the program MSRP cap increased to \$50,000

**MOR-EV utilized a purchase price cap of \$50,000 until November 2022, limiting Model 3 eligibility

Table 16 Percent of Rebates by Vehicle Category (BEV vs. PHEV) for Two Popular Models by EV Incentive Program

The MSRP cap is enshrined in the 2022 Transportation Bill, and would thus require a legislative change. However, increasing the MSRP cap would ensure sustained growth of the EV market in Vermont by reinstating eligibility for some of the most popular EV models and ensuring that the Vermont New PEV program keeps pace with evolving market conditions. Additionally, CSE recommends that the legislature consider granting VTrans the authority to establish a public process by which they may adjust MSRP caps periodically to ensure that the New PEV program is able to remain flexible in response to the evolving EV market.

- 2. Prioritize Marketing and Outreach** - While VEIC has successfully promoted the program through the DEV website and EVT’s PEV awareness campaign, as well as enrolling auto dealers, much of this effort was focused on launching new programs and helping dealers become acquainted with new application processes. With all these programs now launched, additional outreach and promotion of the programs to both auto dealerships and consumers will improve overall awareness of the availability of incentives and increase dealer engagement.

The New PEV program has seen strong participation in the Enhanced rebate, and outreach should prioritize lower income households and disadvantaged communities, as these consumers are typically less likely to be considering an EV and may not be aware of both the benefits of EV ownership, as well as the availability of incentives. Success in this income tier is crucial to meeting Vermont's goals for a just transition to lower transportation greenhouse gas emissions. Specific strategies, tactics and metrics of success will be included in the forthcoming Marketing and Outreach Plan, expected in February 2023.

- 3. Operational Improvements** – CSE has also identified operational improvements that can ensure smooth program operations and a positive customer experience. Primary among these is ensuring timely payment of incentives. Delays in incentive payments following the program's re-launch caused some frustration on the part of auto dealers and post-sale consumer applicants alike. These operational issues have since been remedied, with CSE and VTrans establishing ACH payments for incentives, enabling CSE to make incentive payments to auto dealers more expeditiously. The timeliness of payments will continue to be monitored closely, with a goal of dealers participating in the point-of-sale rebate program receiving payment within 60 days of application approval, and post-purchase consumer applicants receiving payment in 6-8 weeks once their application has been approved.

Replace Your Ride (RZR)

The RZR program launched more recently and has just begun to see participation pick up. As described in *Section vii. Caret Analysis of New PEV, Replace Your Ride, and MileageSmart*, the RZR program may continue to face challenges in garnering high levels of participation, due to the relatively high residual value of vehicles as compared to the RZR incentive.

- 1. Consider increasing RZR rebate levels** – A higher RZR rebate level may have the dual benefit of both increasing participation in the program, while simultaneously resulting in the retirement of ICE vehicles earlier in their life cycle. As potential EV buyers assess the market value of their current vehicle, a higher RZR rebate will naturally encourage more consumers to scrap their current vehicle, rather than trading it in or selling it on the used EV market. From the GHG emissions point of view, while it may seem intuitive that a scrap-and-replace program should target the oldest, least efficient vehicles, these vehicles have, in fact, already emitted much of their lifecycle GHGs. It is, therefore, beneficial to retire vehicles earlier in their lifecycle, with higher residual values.
- 2. Prioritize Marketing and Outreach** – As with the New PEV program, marketing and outreach efforts since July have focused on the launch of the RZR program and updates to information on the program website. These efforts will now shift to increasing awareness among dealers and consumers of RZR incentives. Specific strategies, tactics and metrics of success will be included in

the forthcoming Marketing and Outreach Plan.

E-Bikes

The E-Bike program was extremely popular, with incentives being exhausted in the first two months of opening. While this level of interest in the program bodes well for the future of micromobility in Vermont, the rate of exhaustion of funds and relatively limited administrative budget did pose some operational challenges.

CSE recommends the following:

1. **Consider allocating additional funding for the E-Bike program, depending on results of the forthcoming e-bike survey** - The E-Bikes program was immensely popular, and funds were fully subscribed within the first two months of launch. CSE recommends the State of Vermont consider appropriating additional funds to continue to promote e-bike adoption if cost-effective GHG reduction potential can be shown.
2. **Incorporate E-bikes into the online application portal** – Due to the relatively limited administrative budget, e-bike rebate applications were managed manually through an email-based submission process, and updates to the online funding dashboard needed to be made manually. CSE is currently developing an e-bikes module for its Caret EV Administrator platform, which is anticipated to be complete by mid-2023. Future rounds of E-Bike program funding could potentially be managed within this application portal, providing a better user experience for participating retailers and post-purchase consumers alike, while allowing for real-time updates to available funding.
3. **Allocate sufficient funding for further e-bike evaluation** – CSE will administer a consumer survey of E-Bike program participants that will provide useful information on applicant demographics, motivation for purchasing an e-bike, and e-bike usage. Nevertheless, much remains to be understood about e-bike use patterns and their potential to displace single occupancy vehicles and reduce GHG emissions.



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State of Vermont Electric Vehicle Incentive Program Incentive Recipient Survey Report



March 2022

Introduction

On behalf of the Vermont Agency of Transportation (VTTrans), VEIC developed and fielded survey research to understand the motivations, experiences, and demographics of Vermonters who received the state’s incentive for new plug-in electric vehicle (PEV) purchases.¹ This incentive was available to income-qualified Vermonters purchasing or leasing a new PEV with a base price of \$40,000 or less.

This report describes the research method and summarizes key findings from the research. It includes two appendices: Appendix A includes the survey instrument and Appendix B contains detailed survey response data for all questions.

Response data are cross tabulated with factors of interest (e.g., household income, PEV vehicle type, etc.) in instances the research team found differences correlated with factors that may be relevant to future incentive program designs.

Method

The survey represents recipients of the State of Vermont incentive for new PEVs between February 2019 and January 2022. The survey was fielded in February 2022. The survey instrument is in Appendix A.

As of the time of survey fielding, 1,134 incentive recipients had email addresses on file, 20 had no email address on file but did have a phone number, and 35 had neither a phone number nor an email address on file. All 1,134 incentive recipients with an email address on file were sent an email invitation to take the survey. Recipients who did not respond to this invitation were sent up to two follow up email invitations. This yielded 491 complete responses (41% of incentive recipients). After those reminder emails, VEIC staff made attempts to complete the survey by phone with 181 of the 663 remaining incentive recipients (643 with email who did not respond, 20 with a phone number and no email). This yielded 46 complete responses over the phone (4% of incentive recipients) and 11 responses from incentive recipients who completed the survey online after phone contact (1%). The overall response rate was 46%.

Table 1. Response rate

Contact information available	Email and phone	Phone only	Neither phone nor email	Total
# of incentive recipients	1134	20	35	1189
# of online responses	502	0	0	502
# of phone responses	43	3	0	46
Response rate	48%	15%	0%	46%

¹ The survey did not include recipients of the separate State-funded MileageSmart incentive program administered by Capstone Community Action supporting used high-efficiency vehicle purchases by income-qualified Vermonters.

Using phone call follow ups with a sample of the incentive recipients who did not respond to the email invitation allows for management of nonresponse bias (i.e., skew in data if people who did not respond are systematically different than people who did respond). The data in this report are weighted by survey completion method, except where indicated, so as not to overrepresent the population that was responsive to the email invitation. For example, incentive recipients who did not respond to the email invitation had a higher likelihood of having an annual household income of less than \$35,000. Weighting the data gives this lower-income group, which is underrepresented in the data from online survey completions, more accurate representation.

The margin of error for questions asked to all respondents is $\pm 3\%$ at a 95% confidence interval. Margin of error for each question varies with sample size for that question.

Key findings

Demographics

Compared to the Vermont population², incentive recipients are...

- Older (85% of incentive recipients are 40 or more years, 68% of adult Vermonters are 40 or more years old).
- More likely to have an annual household income³ between \$50,000 and \$149,999 (68% of incentive recipients vs. 49% of the Vermont population), and about half as likely to have an annual household income of less than \$35,000 (15% of incentive recipients vs. 28% of the Vermont population).
- More likely to live in a single-family home (81% of incentive recipients vs. 70% of the Vermont population) and to own this home (86% of incentive recipients vs. 71% of the Vermont population).
- More likely to live in Chittenden County (37% of incentive recipients vs. 25% of the Vermont population).

² Vermont population data source: 2019 American Community Survey

³ Income reported in this survey is annual household income at the time of the survey. Eligibility for the State of Vermont PEV incentive was based on individual or joint adjusted gross income (AGI) at the time of the application.

Table 2. Annual household income

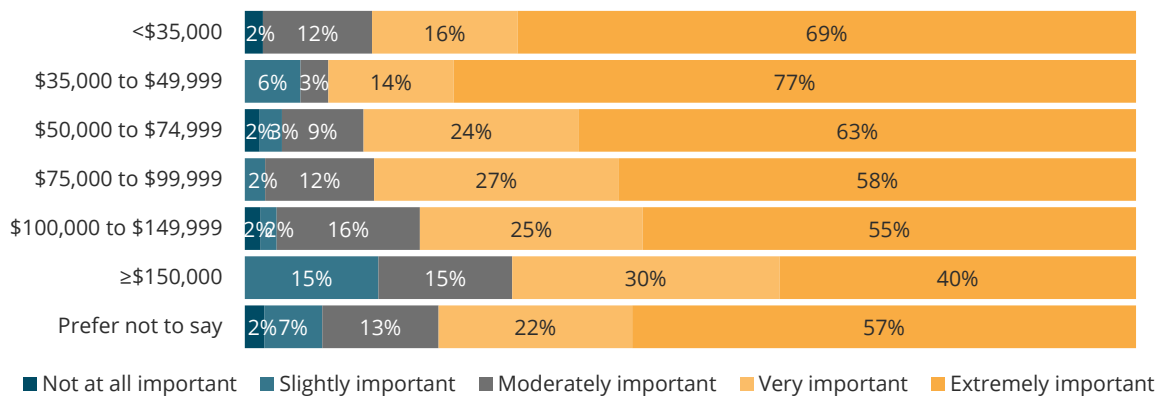
Income category	Vermont population	Incentive recipients
Less than \$10,000	5%	0%
\$10,000 to \$14,999	5%	1%
\$15,000 to \$24,999	9%	3%
\$25,000 to \$34,999	9%	11%
\$35,000 to \$49,999	12%	13%
\$50,000 to \$74,999	19%	23%
\$75,000 to \$99,999	14%	24%
\$100,000 to \$149,999	16%	22%
\$150,000 or more	11%	3%
<i>8% of respondents did not report their income</i>		

Appendix B includes a full report of demographic data collected via this survey.

State incentive

Almost all respondents indicated the state incentive had some importance in making their purchase of a PEV possible. Lower income respondents were more likely to indicate that the incentive was “extremely important” than higher-income Vermonters.

Figure 2. Importance of State incentive to PEV purchase decision, by income range



A majority of respondents were satisfied with the process of applying for and receiving the incentive. Those who received the incentive through their dealer were particularly satisfied with the process.

Figure 3. Satisfaction with incentive process, by incentive payment method



Dissatisfaction with the process typically centered on challenges with the pre-approval process, which was required for all consumer-direct incentives.

This pre-approval is ridiculous. Most people don't know about it until they are at the dealer buying the car.

It was not clear up front that I needed to get pre-approval.

I felt like the process of getting approved for a rebate and then applying for the rebate was redundant.

Half of respondents reported learning about the state incentive from either their salesperson (25%) or the Drive Electric Vermont website (25%). Other relatively common sources included their electrical utility, a friend or family member who drives a PEV, or a non-profit organization.

Other incentives

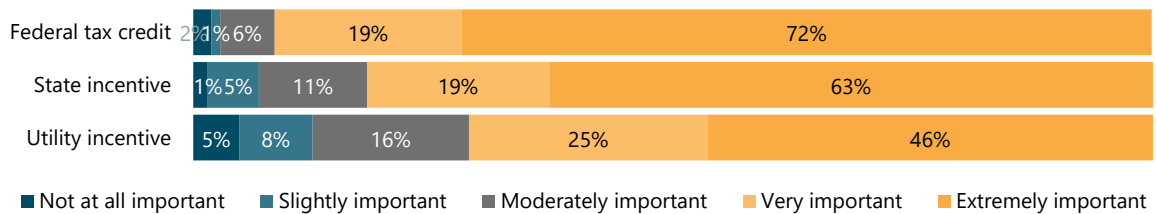
Most recipients of the State of Vermont PEV incentive also received an incentive from their utility and the federal government tax credit. More respondents indicated uncertainty about their participation in the federal tax credit program than in their utility's incentive program.

Figure 4. Participation in utility incentive and federal tax credit programs



The degree to which respondents reported each incentive was important to enabling their purchase of a PEV correlates with the maximum size of that incentive (e.g., the federal tax credit was rated as “extremely important” more than either other incentive and it has the largest potential value). At the time this survey was fielded, the maximum value of the federal tax credit was \$7,500 and the maximum value of the state incentive was \$4,000. The value of utility incentives varied. Green Mountain Power, the largest utility in the state, offered an incentive with a maximum value of \$2,500.

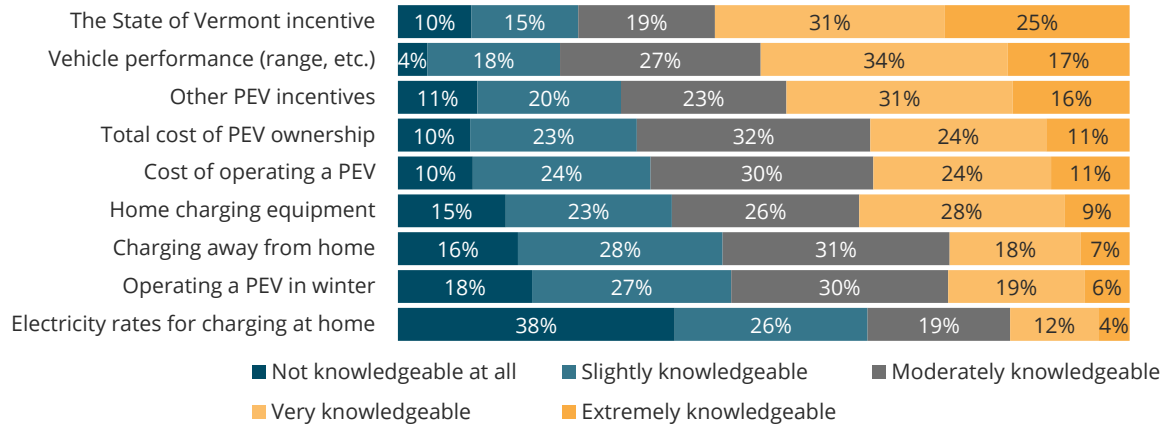
Figure 5. Importance of incentive to PEV purchase decision, by incentive



Salesperson experience

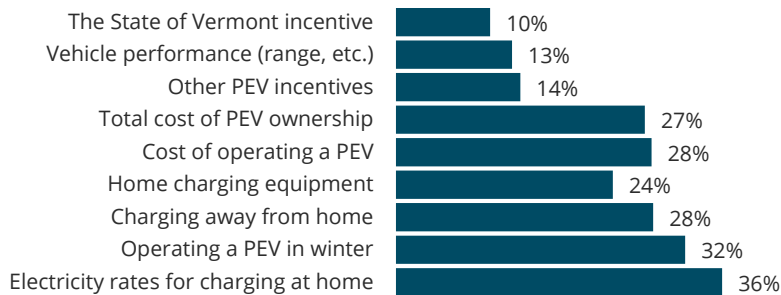
Respondents report working with salespeople who, on average, have a moderate understanding of PEV-related topics. The chart below shows data from respondents who discussed the listed topics with their salesperson.

Figure 6. Salesperson knowledge of topics discussed with respondents



This chart shows the proportion of respondents who did not discuss the topics listed below with their salesperson.

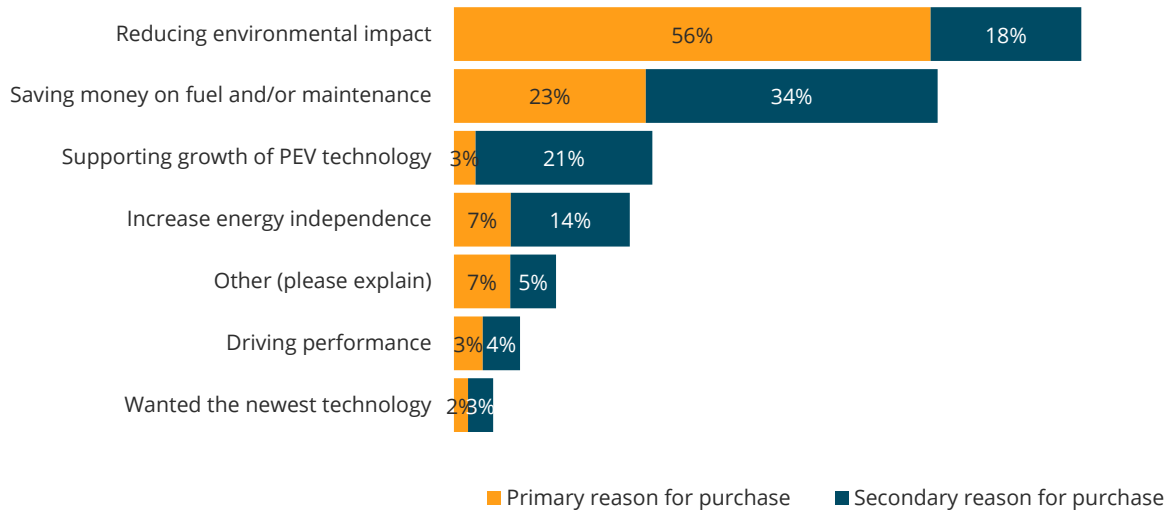
Figure 7. Respondents who did not discuss a topic with their salesperson



Motivations and concerns related to PEV purchase

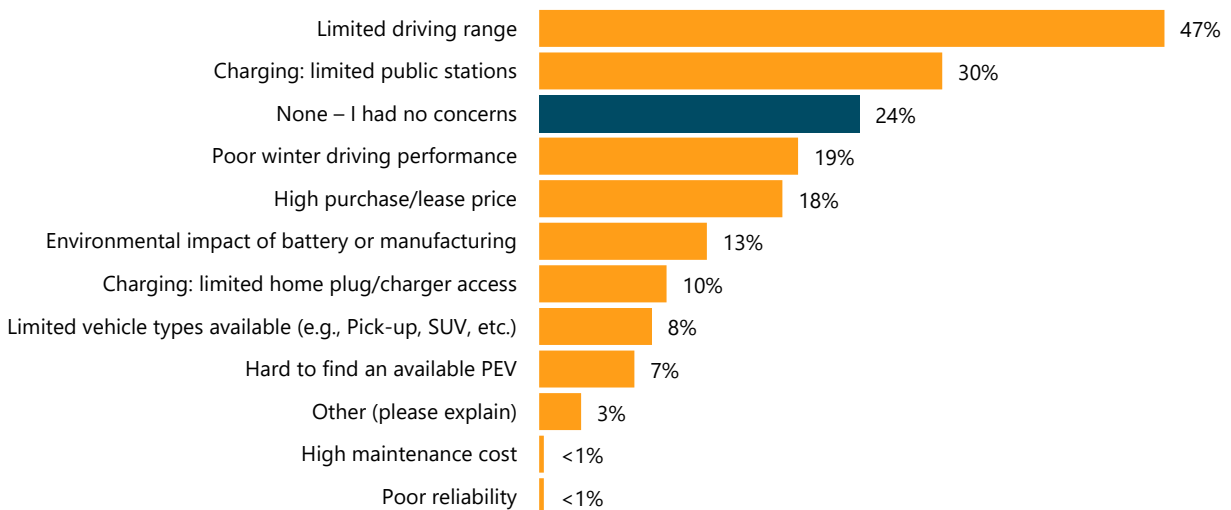
Environmental concerns and ongoing operational costs were the most cited reasons for choosing a PEV. Many of the “other” responses related to incentive availability, low lease price, or indicated “all of the above.”

Figure 8. Motivations for choosing a PEV



Respondents' concerns about PEVs related primarily to driving range and charging in public. Nearly a quarter of respondents indicated they had no concerns choosing a PEV rather than an internal combustion vehicle. "Other" concerns related to cargo space and a range of other topics.

Figure 3. Concerns about choosing a PEV



Few (17%) of respondents considered purchasing a pre-owned PEV. The most commonly cited reasons for preferring a new PEV related to the relatively low incentivized prices to purchase or lease a new PEV ("Price for pre-owned PEV was higher than new PEV with incentives," "Monthly

payment was too high on pre-owned"), a preference for the longer range offered by current-generation PEVs, and limited availability of suitable used PEVs (which may relate in part to the preference for the longer ranges of current-generation PEVs).

Almost all respondents were satisfied with their vehicle (92% for all-electric vehicle owners, 97% for plug-in hybrid vehicle owners).

Appendix A: Vermont PEV Incentive Participant Survey Instrument

This survey instrument is written to achieve research objectives described by VTTrans and, when possible, do so using questions that allow comparison with results from the California Clean Vehicle Rebate Project survey.⁴ Questions preceded by * are questions taken from that survey, with minor language modifications.

Values preloaded from incentive data

- Incentive type: Lease, Purchase, Preapproval
- Incentive option: Customer Direct, Dealer
- Incentive Amount: [various]
- City: [various]
- County: [various]
- Electric Utility: [various]
- Dealership: [various]
- Date of sale: [various]
- Car Model: [various, format: brand model (e.g., Nissan LEAF Plus)]
- Vehicle Type: AEV, PHEV
- Purchase Price: [various]
- Date Of Sale: [various]
- Age: [various]
- Gender: [various]
- IncomeType: LowAGI, LowWx, Moderate

Email invitation

[VTTrans logo]

Dear [Customer Name],

The Vermont Agency of Transportation would like to hear about your experience purchasing your [Car Model] for which you received a discount or rebate. At least part of this plug-in electric vehicle (PEV) discount or rebate was funded by the State of Vermont. Your feedback on your car shopping experience and the importance of the discount or rebate you received will inform how the State of Vermont supports Vermonters to purchase PEVs in the future.

⁴ Center for Sustainable Energy. California Clean Vehicle Rebate Project EV Consumer Survey Instrument. 2015. <https://cleanvehiclerebate.org/sites/default/files/docs/nav/transportation/cvrp/survey-results/EV%20Consumer%20Survey%20Dashboard%20Questions.pdf>

This short survey will take about 7 minutes. Your response will be confidential. As a thank you, you will be entered in a drawing for one of three \$50 gift cards once you finish the survey.

To take the survey, follow this link or copy and paste it into your web browser: [SURVEY LINK]

If you have questions about this survey, please contact [CONTACT DETAILS] and reference the "Vermont Electric Vehicle Rebate Survey."

Survey

Thank you for sharing your experience purchasing your plug-in electric [Car Model]. Your feedback will be confidential. You will be entered into a drawing for one of three \$50 gift cards once you finish the survey.

When answering the following questions, please consider only your experience shopping for and purchasing the [Car Model] you purchase on or around [Date of Sale].

The first few questions are about how you decided to acquire a plug-in electric vehicle (PEV) rather than a gas-powered vehicle.

1. Do you own or lease your [Car Model]?
 - a. Own
 - b. Lease

2. *Which of the following statements best describes your interest in acquiring a plug-in electric vehicle (PEV) when you started your search for a new vehicle?
 - a. I did not know PEVs existed
 - b. I had no interest in a PEV
 - c. I had some interest in a PEV
 - d. I was very interested in a PEV
 - e. I was ONLY interested in a PEV

3. *How important was information from the following sources in your decision to acquire a plug-in electric vehicle (PEV) rather than a similar gas-powered vehicle? *If you did not obtain information from a source please select "NA."* (Extremely important, Very important, Moderately important, Only slightly important, Not at all important, NA)
 - a. Friend/family member who does not drive a PEV
 - b. Friend/family member who drives a PEV
 - c. Car salesperson

- d. PEV manufacturer website
 - e. Drive Electric Vermont website
 - f. PEV test drive event
 - g. Electric utility
 - h. Online discussion forums
 - i. YouTube PEV videos
 - j. News story (newspaper, radio, TV, etc.)
 - k. Advertisement (newspaper, radio, TV, etc.)
 - l. Non-profit organization (e.g., Efficiency Vermont, Sierra Club, etc.)
 - m. Government agency (e.g., Agency of Transportation, etc.)
4. *Which of the following best describes the **most important** reason you chose a plug-in electric vehicle (PEV) rather than a similar gas-powered vehicle?
- a. Saving money on fuel
 - b. Saving money on maintenance
 - c. Reducing environmental impact
 - d. Increase energy independence
 - e. Wanted the newest technology
 - f. Driving performance
 - g. Supporting growth of PEV technology
 - h. Other (please explain)
5. Which of the following best describes the **second-most important** reason you chose a plug-in electric vehicle (PEV) rather than a similar gas-powered vehicle?
- a. [Display list from previous question without response selected in previous question]
6. The following are reasons some people say they would **not** choose a plug-in electric vehicle (PEV). Which of these, if any, **caused you to hesitate** when choosing a PEV rather than a gas-powered vehicle? If you had no hesitations about choosing a PEV rather than a gas-power vehicle, please select "None – I had no concerns."
- a. Environmental impact of battery or manufacturing
 - b. High purchase/lease price
 - c. High maintenance cost
 - d. Poor reliability
 - e. Limited driving range
 - f. Poor winter driving performance
 - g. Charging: limited public stations
 - h. Charging: limited home plug/charger access

- i. Limited vehicle types available (e.g., Pick-up, SUV, etc.)
- j. Hard to find an available PEV
- k. Other (please explain)
- l. None – I had no concerns

The next few questions are about rebates for plug-in electric vehicles.

7. ***[If Incentive option: Customer Direct]** You received a check for [Incentive Amount] after purchasing your plug-in electric vehicle from the State of Vermont through your electric utility. How important was this rebate in making it possible to acquire a plug-in electric vehicle?
- a. Extremely important
 - b. Very important
 - c. Moderately important
 - d. Slightly important
 - e. Not at all important

***[If Incentive option: Dealer]** As part of a State of Vermont program that works with car dealers, you received an incentive of [Incentive Amount] when purchasing your plug-in electric vehicle through [Dealership]. How important was this rebate in making it possible to acquire a plug-in electric vehicle?

- a. Extremely important
 - b. Very important
 - c. Moderately important
 - d. Slightly important
 - e. Not at all important
8. How did you first hear about this State of Vermont rebate?
- a. Friend/family member who does not drive a PEV
 - b. Friend/family member who does drive a PEV
 - c. Car salesperson
 - d. PEV manufacturer website
 - e. PEV test drive event
 - f. Online discussion forums
 - g. Blogs (not on manufacturer websites)
 - h. New story (newspaper, radio, TV, etc.)
 - i. Advertisement (newspaper, radio, TV, etc.)
 - j. Non-profit organization (e.g., Drive Electric Vermont, Efficiency Vermont, etc.)

- k. Government agency (e.g., Department of Transportation, etc.)
 - l. Electric utility
 - m. Other (please describe)
 - n. Not sure
9. How satisfied or dissatisfied were you with the process of applying for and receiving this State of Vermont rebate?
- a. Very satisfied
 - b. Somewhat satisfied
 - c. Neither satisfied nor dissatisfied
 - d. Somewhat dissatisfied
 - e. Very dissatisfied
10. **[If dissatisfied]** How could the process of applying for and receiving this rebate have been better?
- a. (Open end)
11. How many of your friends and family know that the State of Vermont offers this rebate for purchasing a PEV?
- a. (0-100% slider with a "Don't know" checkbox)
12. Did/will you receive a rebate from either of the following for purchasing your [Car Model]?
- a. Your electrical utility (Yes, No, Not sure)
 - b. The federal government as a tax credit (Yes, No, Not sure)
13. *[If at least one rebate = Yes] How important was each of the following in making it possible to acquire a plug-in electric vehicle?
- a. **[If electrical utility = Yes]** Rebate from your electrical utility (Extremely important, Very important, Moderately important, Slightly important, Not at all important)
 - b. **[If federal government = Yes]** Tax credit from the federal government (Extremely important, Very important, Moderately important, Slightly important, Not at all important)
14. *How knowledgeable was the salesperson you worked with about each of the following? If the salesperson did not discuss a topic please select "NA."
- a. The State of Vermont rebate
 - b. Other rebates (electric utility, federal)

- c. Total cost of PEV ownership (fueling, maintenance, etc.)
- d. Electricity rates for charging at home
- e. Home charging equipment
- f. Charging away from home (public, workplace, etc.)
- g. Vehicle performance (range, battery life, etc.)
- h. Cost of operating a PEV
- i. Operating a PEV in winter

You're making great progress! The next questions are about charging and driving your PEV.

15. Where do you charge your [Car Model]? Please select all that apply.

- a. Home
- b. Work
- c. Public chargers

16. **[If charge at home]** What type(s) of charger do you use at home?

- a. Level 1 charger / standard wall outlet
- b. Level 2 charger (240 V)
- c. Not sure

17. **[If charge at home AND if Level 2 is installed]** Who installed your Level 2 home charger?

- a. Installed it myself / friend or family member installed it
- b. Electrician
- c. Landlord
- d. Other (please describe)
- e. Not sure

18. **[If charge at home]** Does your electrical utility offer a special rate for charging EVs at off-peak times of day?

- a. Yes, and I am signed up for it
- b. Yes, but I am not using it
- c. No
- d. Not sure

19. **[If charge at home AND signed up for off-peak utility rate]** When charging at home, about how often do you charge during an off-peak time of day?

- a. (0-100% slider with a "Not sure" checkbox)

20. **[If charge at work]** What type(s) of charger do you use at work?
- Level 1 charger / standard wall outlet
 - Level 2 charger
 - DC fast charger
 - Not sure
21. **[If charge at public]** What type(s) of charger do you use at public charging stations?
- Level 1 charger / standard wall outlet
 - Level 2 charger
 - DC fast charger
 - Not sure
22. Are there specific locations you'd like to have more public charging available? If not, please leave this blank.
- (open end)
23. When you purchased your [Car Model], was this replacing a vehicle or adding to the number of vehicles in your household?
- Replaced a vehicle
 - Added a vehicle
24. **[If replaced a vehicle]** What type of vehicle did your [Car Model] replace?
- Gas-powered (not a hybrid)
 - Hybrid that didn't plug in to charge
 - Hybrid that plugged in to charge
 - All-electric (no gas)
25. About how many times per week do you commute to a job?
- None
 - 1
 - 2
 - 3
 - 4
 - 5
26. **[If commute > 0]** About how many miles is your commute roundtrip?
- (Open end, force numeric response)
27. About how many times per year do you drive more than 100 miles in a day?
- (Open end, force numeric response)

28. Any additional comments about acquiring or using your [Car Model] or the State of Vermont PEV incentive program?
- (open end)

You're almost done! These last questions help to make sure the State of Vermont is serving all Vermonters.

29. Do you own or rent your primary residence?
- Own
 - Rent
 - Other (please describe)

30. Which of the following best describes your primary residence?
- Single family home
 - Duplex
 - Condo, with about this many units: (open end)
 - Multi-family apartment, with about this many units: (open end)

31. [IF residence is Condo or Multifamily] Where do you normally park your vehicle at night?
- Garage
 - Carport
 - Dedicated outdoor parking space
 - Shared outdoor parking space
 - On-street parking
 - Other (please describe)

32. Are there solar panels at your primary residence?
- Yes
 - No

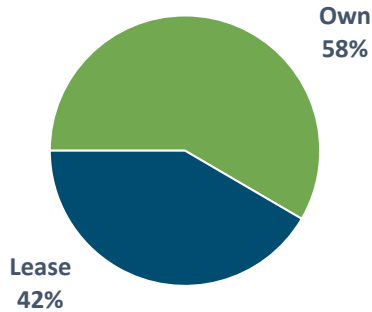
33. Which of the following best describes your annual household income before taxes?
- Less than \$10,000
 - \$10,000 to \$14,999
 - \$15,000 to \$24,999
 - \$25,000 to \$34,999
 - \$35,000 to \$49,999
 - \$50,000 to \$74,999
 - \$75,000 to \$99,999
 - \$100,000 to \$149,999

- i. \$150,000 to \$199,999
 - j. \$200,000 or more
 - k. Prefer not to say
34. Are you of Hispanic, Latino, or Spanish origin?
- a. Yes
 - b. No
 - c. Prefer not to say
35. What is your race? Please select all that apply.
- a. White
 - b. Black or African American
 - c. American Indian or Native Alaskan
 - d. Asian
 - e. Native Hawaiian or Pacific Islander
 - f. Other (please describe)
 - g. Prefer not to say
36. **[If Age is empty]** What is your age?
- a. (open end, force numeric response)
37. **[If Gender is empty]** Which of the following best describe your gender?
- a. Male
 - b. Female
 - c. Non-binary
 - d. Other
 - e. Prefer not to say

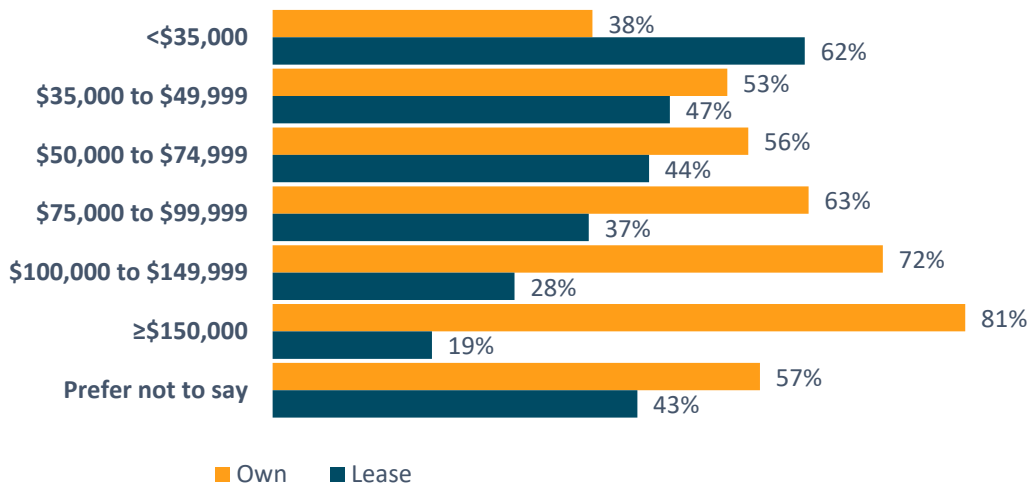
Thank you for completing this survey. Click "Submit survey" to submit your response and enter the drawing for one of three \$50 gift cards.

Appendix B: Detailed Survey Results

Q1 | Do you own or lease your [Car Model]?

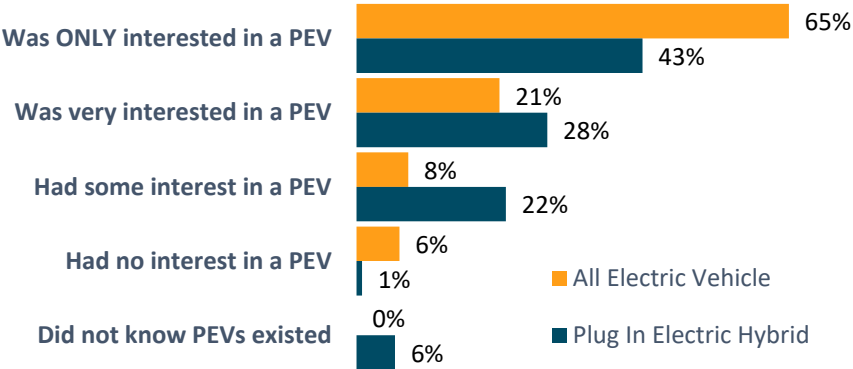


Own	60%
Lease	40%



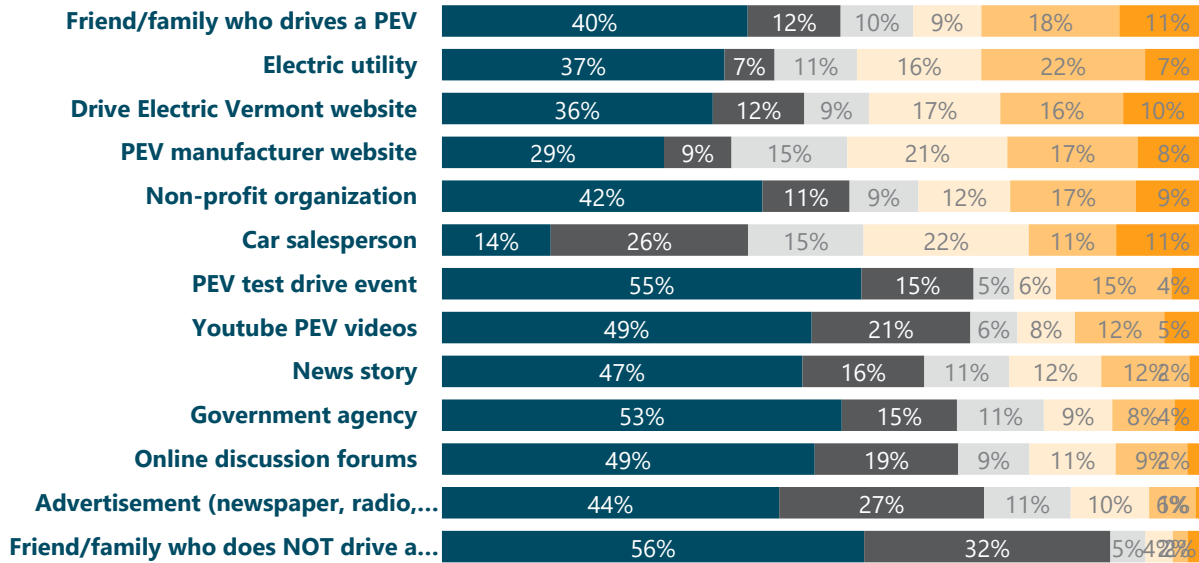
	Own	Lease
<\$35,000	38%	62%
\$35,000 to \$49,999	53%	47%
\$50,000 to \$74,999	56%	44%
\$75,000 to \$99,999	63%	37%
\$100,000 to \$149,999	72%	28%
≥\$150,000	81%	19%
Prefer not to say	57%	43%

Q2 | Which of the following statements best describes your interest in acquiring a plug-in electric vehicle (PEV) when you started your search for a new vehicle?



	All-Electric	Plug-in Hybrid
I was ONLY interested in a PEV	65%	43%
I was very interested in a PEV	21%	28%
I had some interest in a PEV	8%	22%
I had no interest in a PEV	6%	1%
I did not know PEVs existed	0%	6%

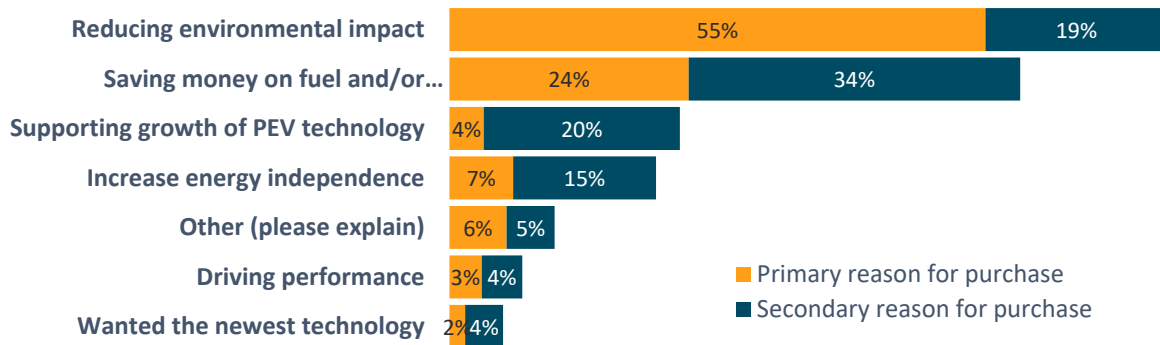
Q3 | How important was information from the following sources in your decision to acquire a plug-in electric vehicle (PEV) rather than a similar gas-powered vehicle? If you did not obtain information from a source please select "N/A."



■ N/A ■ Not at all important ■ Slightly important ■ Moderately important ■ Very important ■ Extremely important

	N/A	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Friend/family who drives a PEV	41%	12%	9%	11%	17%	10%
Electric utility	37%	7%	11%	17%	20%	7%
Drive Electric Vermont website	36%	11%	8%	17%	17%	11%
PEV manufacturer website	30%	9%	15%	20%	17%	9%
Non-profit organization	42%	11%	9%	14%	16%	8%
Car salesperson	15%	25%	15%	22%	11%	12%
PEV test drive event	54%	15%	5%	5%	15%	6%
YouTube PEV videos	48%	20%	6%	9%	12%	5%
News story	49%	16%	11%	11%	11%	2%
Government agency	52%	15%	11%	10%	8%	3%
Online discussion forums	49%	18%	10%	12%	9%	2%
Advertisement (newspaper, radio, etc.)	45%	28%	11%	10%	6%	1%
Friend/family who does NOT drive a PEV	54%	33%	5%	4%	2%	2%

Q4-5 | Which of the following best describes the most important reason and the second most important reason you chose a plug-in electric vehicle (PEV) rather than a similar gas-powered vehicle?

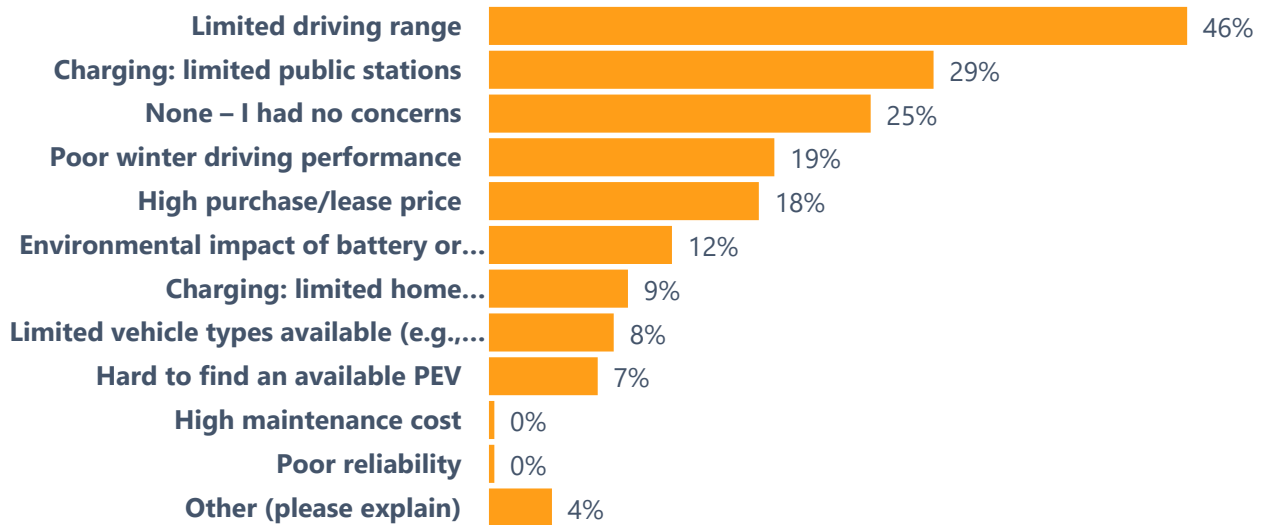


	Reducing Environmental Impact	Saving Money on Fuel and/or Maintenance	Supporting Growth of PEV Technology	Increase Energy Independence	Other (please explain)	Driving performance	Wanted the Newest Technology
Q4: Primary reason for purchase	55%	24%	4%	7%	6%	3%	2%
Q5: Secondary reason for purchase	19%	34%	20%	15%	5%	4%	4%

Q4 | Other (please explain):

Other (please explain)
All of the above
Nissan offered a two year lease and there were many rebates
The incentives made the vehicle was much more affordable
I owned a 2013 PEV and couldn't continue to use it as my only car due to range.
have been looking for hybrid, but couldn't find one and needed to trade in my car
Discounts and incentives made it the best value
Have solar panels that were generating more electricity than I was using.
Rebates
All of the above!
Big factory discounts and state incentives and \$3000.00 Costco incentive.
The rebate helped me to afford a car at all.
Car was less expensive than a gas powered
All of the above!
Incentives
All the above
Work for XXX so peer pressure!
Rebates-affordability
5th 9ne
Low monthly payment
good deal on purchase
and rebates really were important
best deal with dealership.
wanted cheapest car
payment on car
incentives

Q6 | The following are reasons some people say they would *not* choose a plug-in electric vehicle (PEV). Which of these, if any, caused you to *hesitate* when choosing a PEV rather than a gas-powered vehicle?



	%
Limited driving range	46%
Charging: limited public stations	29%
None – I had no concerns	25%
Poor winter driving performance	19%
High purchase/lease price	18%
Environmental impact of battery or manufacturing	12%
Charging: limited home plug/charger access	9%
Limited vehicle types available (e.g., Pick-up, SUV, etc.)	8%
Hard to find an available PEV	7%
High maintenance cost	0%
Poor reliability	0%
Other (please explain)	4%

Q6 | Other (please explain)

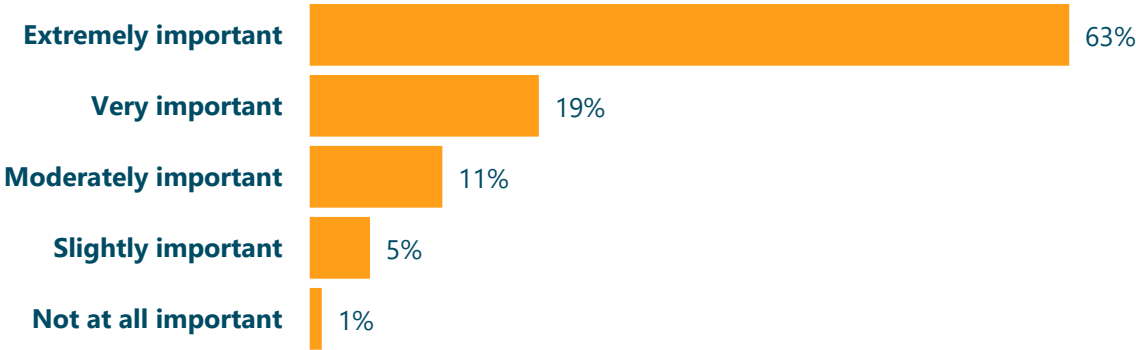
Other (please explain)
How long you have to charge car to get full charge
last Prius wasn't as good. And didn't entirely trust incentives.
likes having gas back up. Hybrid has higher HP than gas model
Bolt Recall - Reduced Usability
small trunk size due to battery size
Limited cargo space, only 2 wheel drive
No Tesla Service Centers in Vermont
Small trunk space
concern about having to replace the battery
Low-frequency electromagnetic radiation emitted at high levels by EV
Cargo space
No nearby Tesla dealer for service
High insurance cost

Q7 | How important was this [State of Vermont] rebate in making it possible to acquire a plug-in electric vehicle?

Survey-takers saw one of the following prompts depending on how they received their incentive.

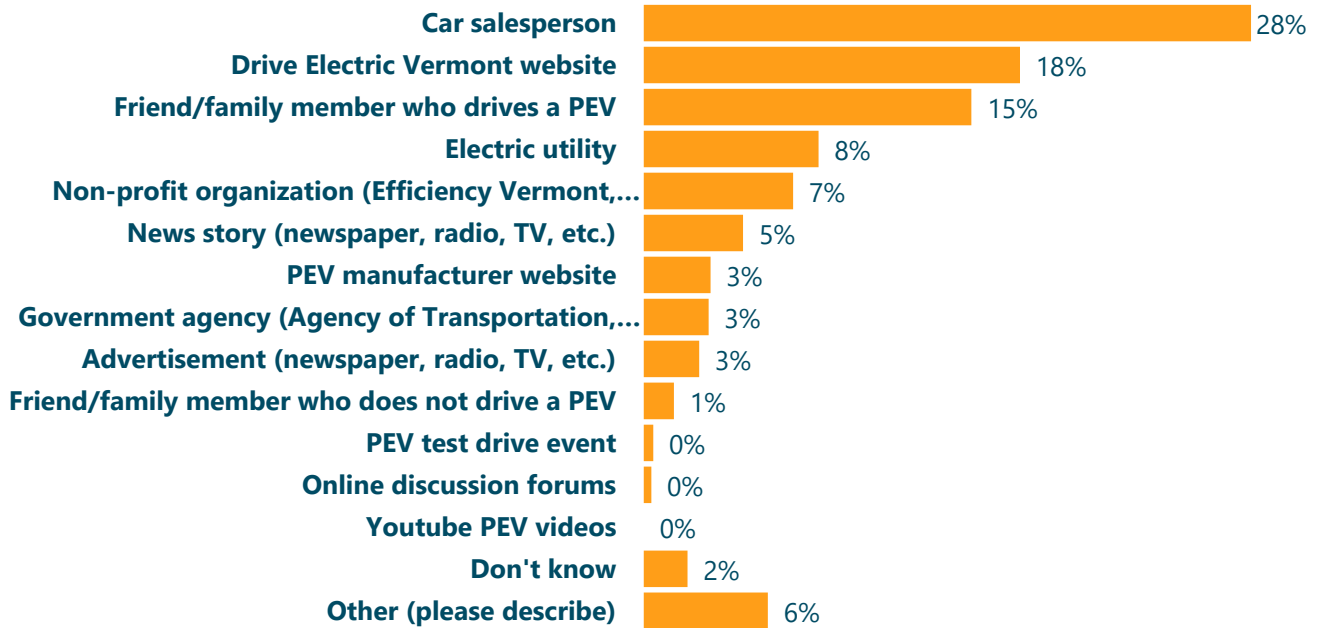
[Version 1] You received a check for [Incentive Amount] after purchasing your plug-in electric vehicle from the State of Vermont through your electric utility.

[Version 2] As part of a State of Vermont program that works with car dealers, you received an incentive of [Incentive Amount] when purchasing your plug-in electric vehicle through [Dealership].



	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Q7: How important was this rebate in making it possible to acquire a plug-in electric vehicle?	1%	5%	11%	19%	63%

Q8 | How did you first hear about this State of Vermont rebate?

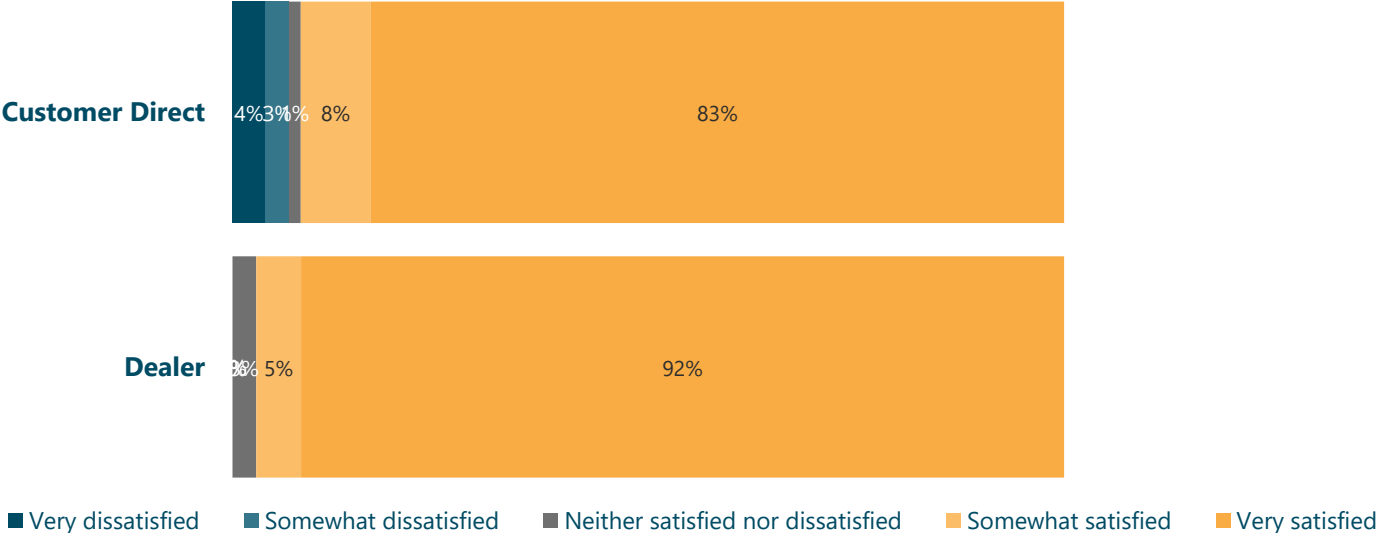


Car Salesperson	28%
Drive Electric Vermont website	18%
Friend/family member who drives a PEV	15%
Electric Utility	8%
Non-profit organization (Efficiency Vermont, Sierra Club, etc.)	7%
News story (newspaper, radio, TV, etc.)	5%
PEV manufacturer website	3%
Government agency (Agency of Transportation, etc.)	3%
Advertisement (newspaper, radio, TV, etc.)	3%
Friend/family member who does not drive a PEV	1%
PEV test drive event	0%
Online discussion forums	0%
YouTube PEV videos	0%
Don't know	2%
Other (please describe)	6%

Q8 | Other (please describe)

Other (please describe)
Google Search
doesn't remember
google search
googled it
work for solar company, and pay attention to incentives. Do my own research.
husband
web search
I am a photojournalist for the Bennington Banner and attended Drive Electric Week to report on the event.
Coworkers
Didn't get rebate
Mollie Burke, state Rep.
had a previous PEV
I researched online to learn about government rebates that are currently available.
Not sure which to select. There was a Drive Electric VT event in Waterbury in 2021 that I attended and was what convinced me we could afford an EV.
online car ratings/reviews
Work in policy - heard through state house
My Subaru mechanic
saw the car while waiting for safety recall
didn't know about it. did research
Experience in my career in energy efficiency
My job
I honestly do not recall - I work at XXXX so it may have been something I learned of at work. It may have been from Drive Electric Vermont - I am on several email lists from EV related advocacy groups.
Previous ownership and tax info
My job at the time
I may have also seen it on Drive Electric
Front Porch forum

Q9 | How satisfied or dissatisfied were you with the process of applying for and receiving this State of Vermont rebate?



	Customer Direct	Dealer
Very Dissatisfied	4%	0%
Somewhat dissatisfied	3%	0%
Neither satisfied nor dissatisfied	1%	3%
Somewhat satisfied	8%	5%
Very satisfied	83%	92%

Q10 | [If dissatisfied] How could the process of applying for and receiving this rebate have been better?

I want to preface this feedback that I'm very grateful for the refund and thankful they allowed it even though I wasn't pre-approval before purchase. Hoping sharing my experience will make it better for others. Clearer instructions about the pre-approval process. More accurate and timely updates on the application process. I received an email that said approved, then when I checked in 4 weeks later was told documents were missing. It was unclear from the approval email I needed to take further action. I still haven't received a check from the state.

Just make it easier..this preapproval is ridiculous most people dont know about it until they are at the dealer buying the car. The dealers wont mention the pre approval. Cant blame them.

It was not clear upfront that I needed to get pre-approval. The process was more onerous than necessary. Dealership was not aware of rebate or what was needed to get the rebate (Tesla sales are done out of state).

There was an extremely long wait for all the documentation from an out of state dealership so it took forever for my application to be processed.

Dealerships were extremely unhelpful -- they could be better informed about the process. We ended up purchasing the car from a dealership 60 miles away rather than the one in our hometown because the local dealer seemed incompetent

Never received a check. They kept asking for more info and then stopped returning my emails.

I thought it was a tax credit initially, and I think I thought I had missed the deadline, but they still worked it out for me, for which I was grateful.

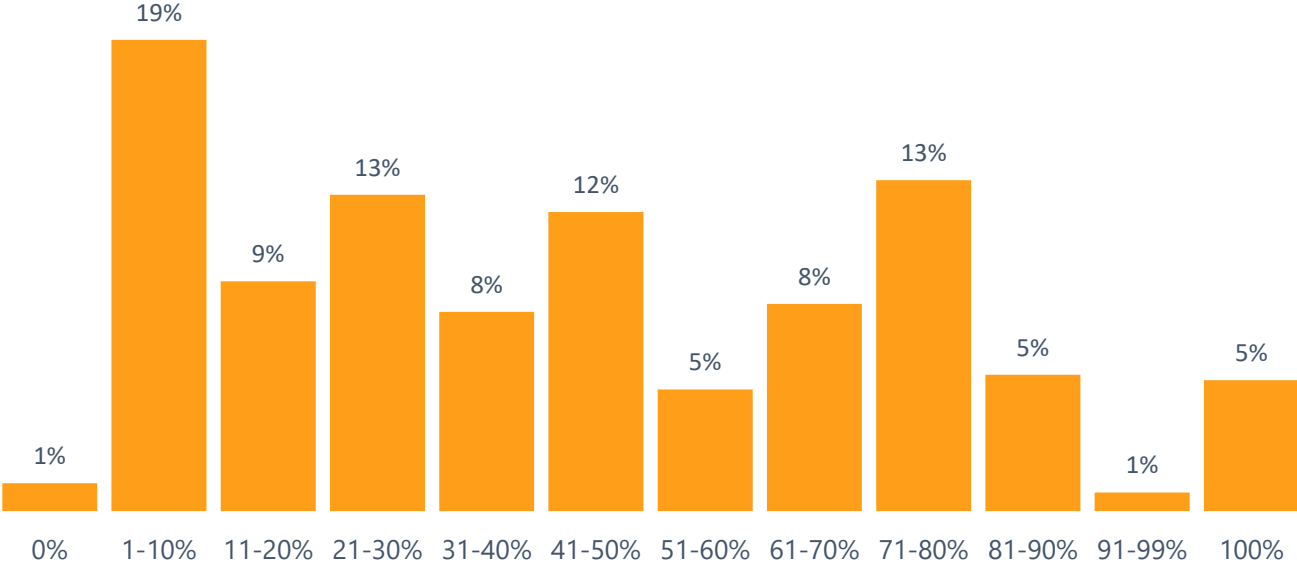
I never received my check.

I felt like going through the process of getting approved for a rebate and then applying for the rebate was redundant.

Clarity about first applying for eligibility for the rebate before purchasing the vehicle. I didn't understand that applying for the rebate was a 2-step process: first apply for eligibility, then apply for the rebate. It all worked out but I was really worried that I'd disqualified myself when I want to apply for the rebate and realized I'd missed a step. This rebate was VERY important in our decision to purchase the Kona.

No one knew at the dealer how to get the rebate. Was supposed to be done through dealer, but they didn't know how to do it. It was a very confusing process. Not a seamless process. Although Drive Electric they told us about utility rebate.

Q11 | About how many of your friends and family know that the State of Vermont offers this rebate for purchasing a PEV?

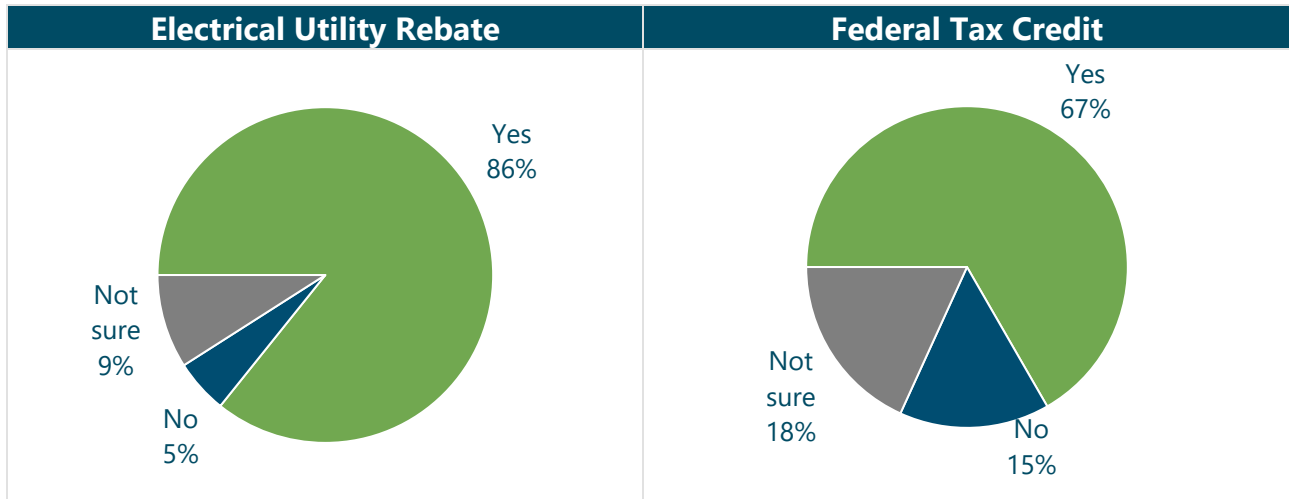


Percent of friends/family estimated to be aware of incentive

Percent of friends/family estimated to be aware of incentive	%
0%	1%
1%-10%	19%
11%-20%	9%
21%-30%	13%
31%-40%	8%
41%-50%	12%
51%-60%	5%
61%-70%	8%
71%-80%	13%
81%-90%	5%
91%-99%	1%
100%	5%

Q12 | Did/will you receive a rebate from either of the following for purchasing your [Car Model]?

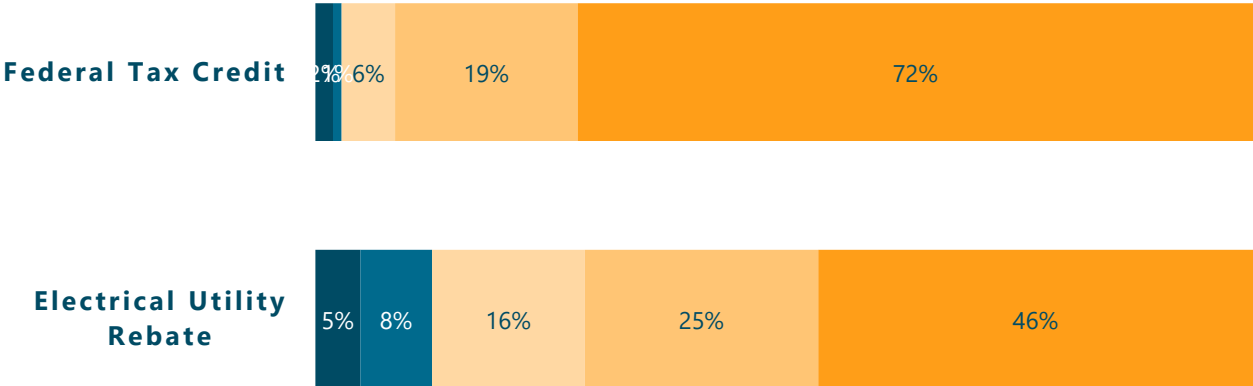
- a. Your electrical utility (Yes, No, Not sure)
- b. The federal government as a tax credit (Yes, No, Not sure)



	Electrical Utility Rebate	Federal Tax Credit
Yes	85%	67%
No	5%	15%
Not Sure	9%	18%

Q13 | How important was each of the following in making it possible to acquire a plug-in electric vehicle?

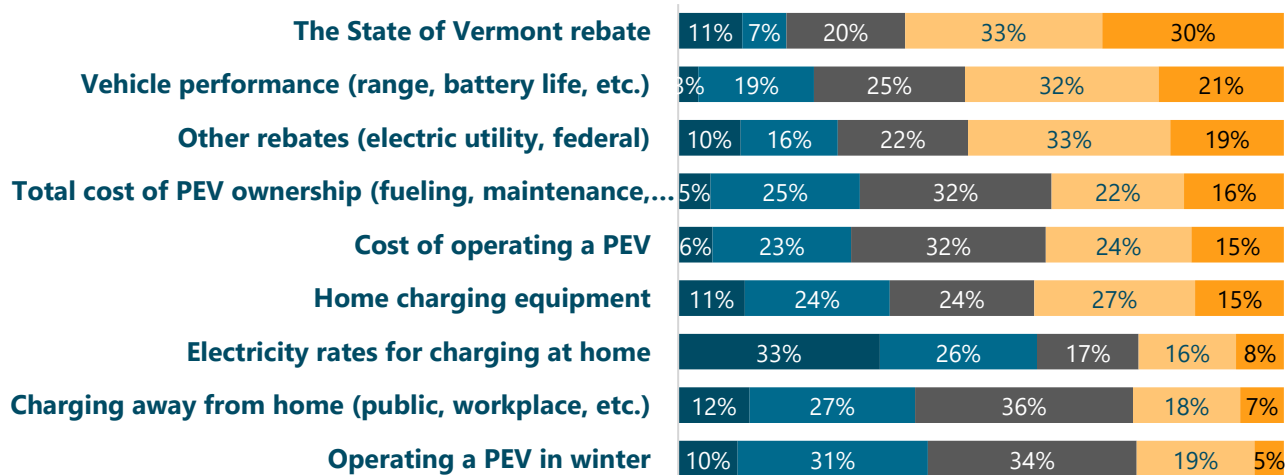
- a. Rebate from your electrical utility (Extremely important, Very important, Moderately important, Slightly important, Not at all important)
- b. Tax credit from the federal government (Extremely important, Very important, Moderately important, Slightly important, Not at all important)



■ Not at all important ■ Slightly important ■ Moderately important ■ Very important ■ Extremely important

	Electrical Utility Rebate	Federal Tax Credit
Not at all important	5%	2%
Slightly important	8%	1%
Moderately important	16%	6%
Very important	25%	19%
Extremely important	46%	72%

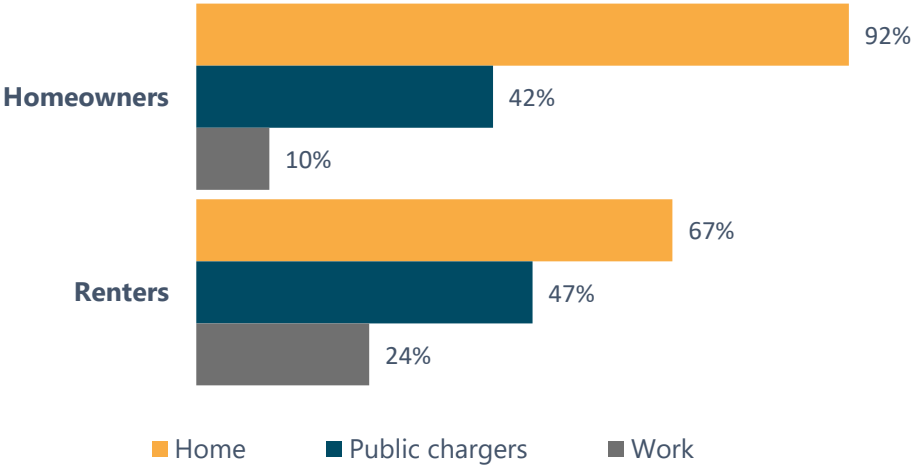
Q14 | How knowledgeable was the *salesperson* you worked with about each of the following? *If the salesperson did not discuss a topic please select "N/A."*



■ Not knowledgeable at all ■ Slightly knowledgeable ■ Moderately knowledgeable ■ Very knowledgeable ■ Extremely knowledgeable

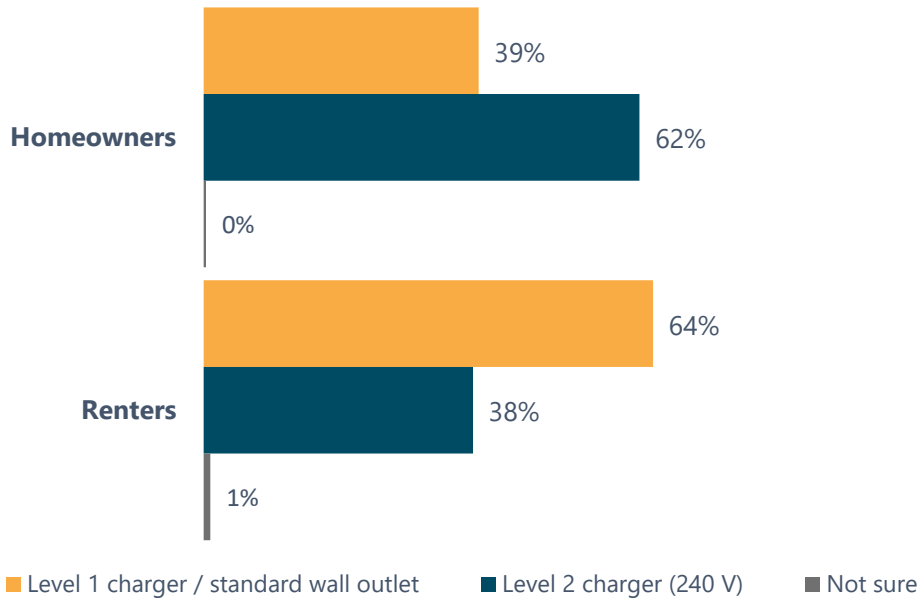
	Not knowledgeable at all	Slightly knowledgeable	Moderately knowledgeable	Very knowledgeable	Extremely knowledgeable
The State of Vermont rebate	11%	7%	20%	33%	30%
Vehicle performance (range, battery life, etc)	3%	19%	25%	32%	21%
Other rebates (electric utility, federal)	10%	16%	22%	33%	19%
Total cost of PEV ownership (fueling, maintenance,)	5%	25%	32%	22%	16%
Cost of operating a PEV	6%	23%	32%	24%	15%
Home charging equipment	11%	24%	24%	27%	15%
Electricity rates for charging at home	33%	26%	17%	16%	8%
Charging away from home (public, work, etc.)	12%	27%	36%	18%	7%
Operating a PEV in winter	10%	31%	34%	19%	5%

Q15 | Where do you charge your [Car Model]? Please select all that apply.



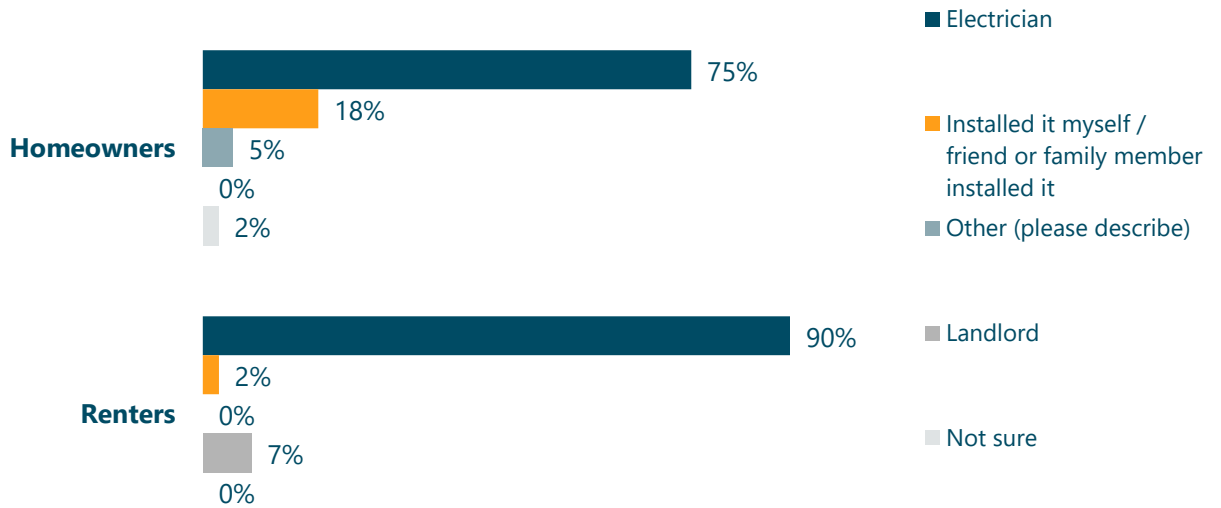
	Homeowners	Renters
Home	92%	67%
Public chargers	42%	47%
Work	10%	24%

Q16 | [If charge at home] What type(s) of charger do you use at home?



	Homeowners	Renters
Level 1 charger/standard wall outlet	39%	64%
Level 2 charger (240 volt)	62%	38%
Not sure	0%	1%

Q17 | [If charge at home AND Level 2 is installed] Who installed your Level 2 home charger?



	Homeowners	Renters
Electrician	75%	90%
Installed it myself/friend or family member installed it	18%	2%
Other (please describe)	5%	0%
Landlord	0%	7%
Not sure	2%	0%

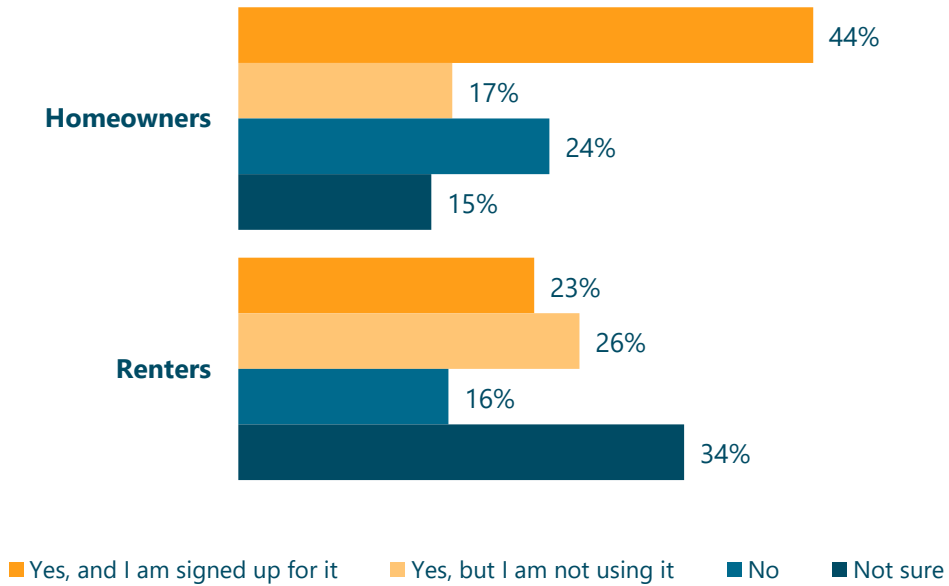
Other Responses:

Already installed by previous owners when we purchased our home

haven't yet

Cost to install \$1700 and she dug the trench and dug the hole for it.

Q18 | [If charge at home] Does your electrical utility offer a special rate for charging EVs at off-peak times of day?



	Homeowners	Renters
Yes, and I am signed up for it	44%	23%
Yes, but I am not using it	17%	26%
No	24%	16%
Not sure	15%	34%

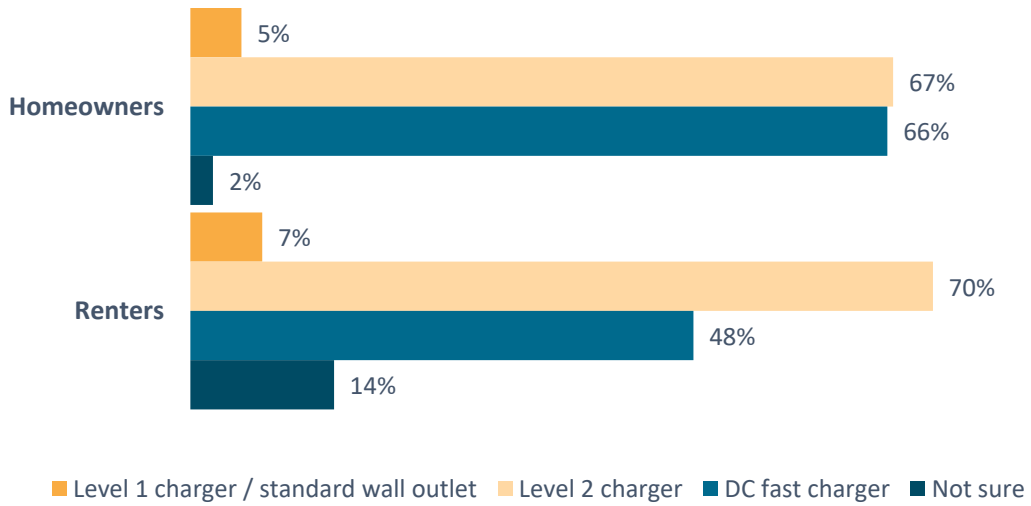
**Q19 | [If charge at home AND signed up for off-peak utility rate]
When charging at home, about how often do you charge during an off-peak time of day?**

% time charging off-peak	90%

	<\$35,000	\$35,000 to \$49,999	\$50,000 to \$74,999	\$75,000 to \$99,999	\$100,000 to \$149,999	≥\$150,000	Prefer not to say
% time charging off-peak	87%	93%	94%	94%	82%	70%	94%

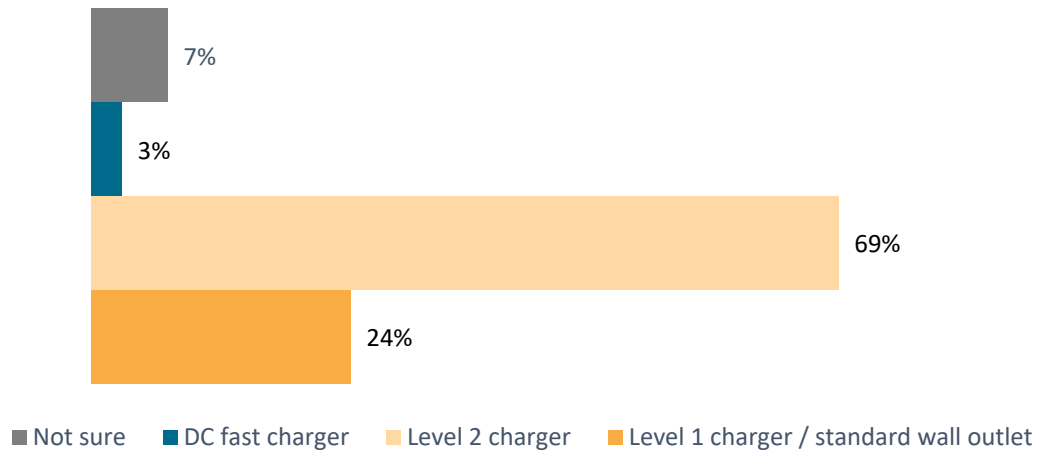
	Homeowners	Renters
% time charging off-peak	89%	93%

Q20 | [If charge at work] What type(s) of charger do you use at work?



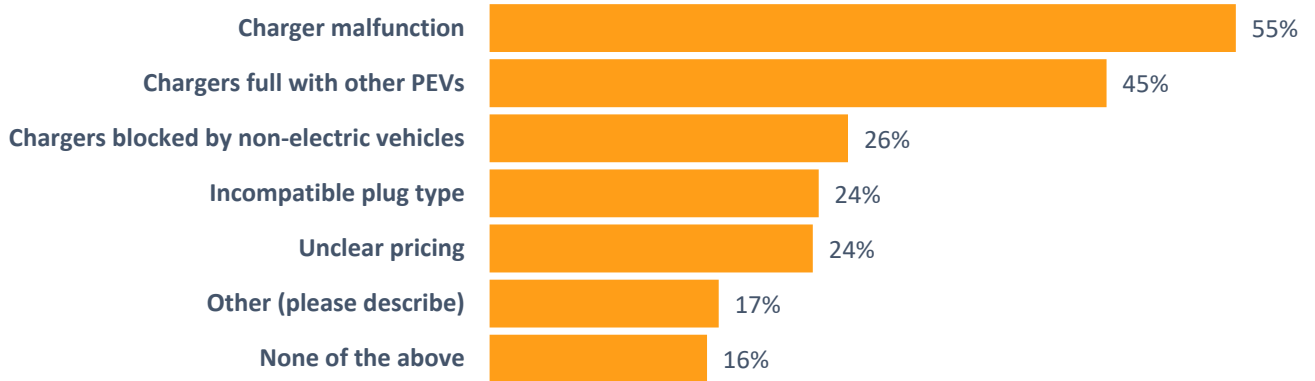
	Homeowners	Renters
Level 1 charger/standard wall outlet	5%	7%
Level 2 charger	67%	70%
DC fast charger	66%	48%
Not sure	2%	14%

Q21 | [If charge at public] What type(s) of charger do you use at public charging stations?



	%
Level 1 charger / standard wall outlet	24%
Level 2 charger	69%
DC fast charger	3%
Not sure	7%

Q21 | [If charge at public] Have you experienced challenges using *public charging stations*? Please select all that apply or "None of the above."



	%
Charger malfunction	55%
Chargers full with other PEVs	45%
Chargers blocked by non-electric vehicles	26%
Incompatible plug type	24%
Unclear pricing	24%
Other (please describe)	17%
None of the above	16%

Q21 | Have you experienced challenges using public charging stations? Other (please describe)

poor app to manage charging station
Availability of chargers
Cost per kw too high
Lack of public charging station infrastructure
First time I had to call to get it started. It was also not made clear when I got the car that I had to sign up in advance
Anything other than a fast (Tesla) charger is essentially useless
Lack of DC fast charger throughout the state!!!!!!!!!!!!!!
Have experienced (very rarely) blocking by ICE, charger out of order. When travelling, wish all level 2 used same plug style ,
Risk of cat convertor theft
Need a card instead of using an app. One station (Berling VT, Comfort Inn) had a help phone number that called a hotel in Nevada, wasn't much help.
Hard to locate even with gps app like an eater egg hunt
Need to install several apps and create accounts for each network (ChargePoint, Electrify America, SemaConnect, etc.)
Lack of level 3 chargers
They need to take any credit card
Connecting with Electrify America is always problematic
needed an app
Use dealer charge station.
Inconvenient locations therefore stuck inside car.
Used as parking spaces by evs that aren't charging
Incompatible phone app
Having to pay for parking (Brattleboro High Grove lot)
Access. At some ski areas the charger is in a reserved guess space.
Apps non-functional. Why don't they just allow a credit card payment? In-app makes it inaccessible to people without smartphones or with no service.
Hard to find, also seem to charger slower than home charger.
Expensive
Charger speed varies a lot.
not enough stations nearby
Gmp power is .17 per kwh and mobil is .35per kwh. Price too high for the range you get
Too hard to find a compatible charger that is fast on rural roads.
Unclear on how to use them
Inconvenient. Seems like there should be more installed at places where people spend a lot of time: ball fields, shopping plazas, etc.
Not enough level 2 chargers available in Montpelier, Vermont
Only once, in Bradford, VT where the chargers were out of order, both DC and Level 2
chargers too many miles apart, poor customer service, hard to read screens, inconvenient locations
Learning curve of how to pay

Multiple apps required depending on station owner/install

EVgo will deny this, but they go off line when extreme cold. I have sat at every chargers (Danville, Bradford, Brattleboro, Bennington) have all been off line in extreme cold. Spent 4 hours in car at Bradford location. App said it was on, but when I got there it would not work/off line.

rarely full of chargers. just wish there were more fast chargers.

some chargers won't let you use without credit card

Chargers show off network a lot and doesn't communicate that to EVGo and Chargepoint.

have found if not a member of their network at some charging stations, can't find out how to become member of network

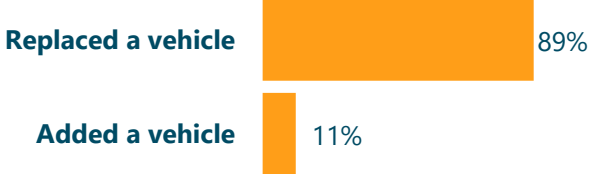
all chargers are all different apps. Would be better if just 1 service.

finding a charger can be difficult even with map. Says there are chargers where there are not, like across from Shaw's in Colchester (Roosevelt Hwy) but not there. Also at Fanny Allen you'll get ticketed if you are not an employee or patient. But still shows up on map as a charging option.

Q22 | Are there specific locations you'd like to have more public charging available? *If not, please leave this blank.*

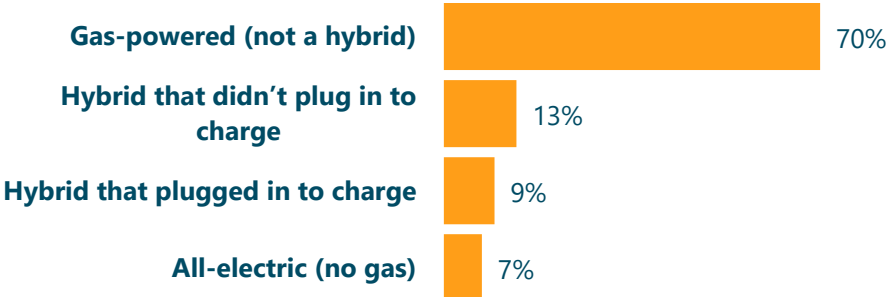
	%
No comment	50%
Specific town, region, or location	16%
Retail or restaurant locations	13%
Highway or rest stop	12%
Parking areas	5%
Everywhere	5%
Need faster chargers	5%
Ski resort or other recreation	3%
Park and ride	3%
Workplace	2%
Gas stations	2%
Schools	2%
Hospital	1%
Other	2%

Q23 | When you purchased your [Car Model], was this replacing a vehicle or adding to the number of vehicles in your household?



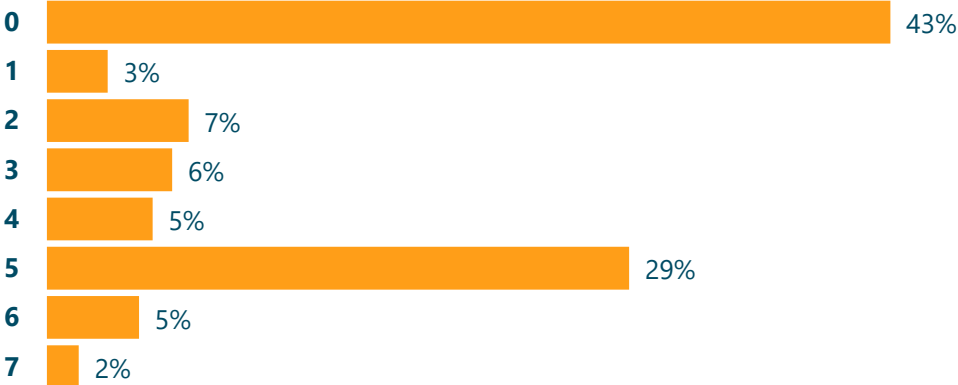
	%
Replaced a vehicle	89%
Added a vehicle	11%

Q24 | [If replaced a vehicle] What type of vehicle did your [Car Model] replace?



	%
Gas-powered (not a hybrid)	70%
Hybrid that didn't plug in to charge	13%
Hybrid that plugged in to charge	9%
All-electric (no gas)	7%

Q25 | About how many days per week do you commute to a job?



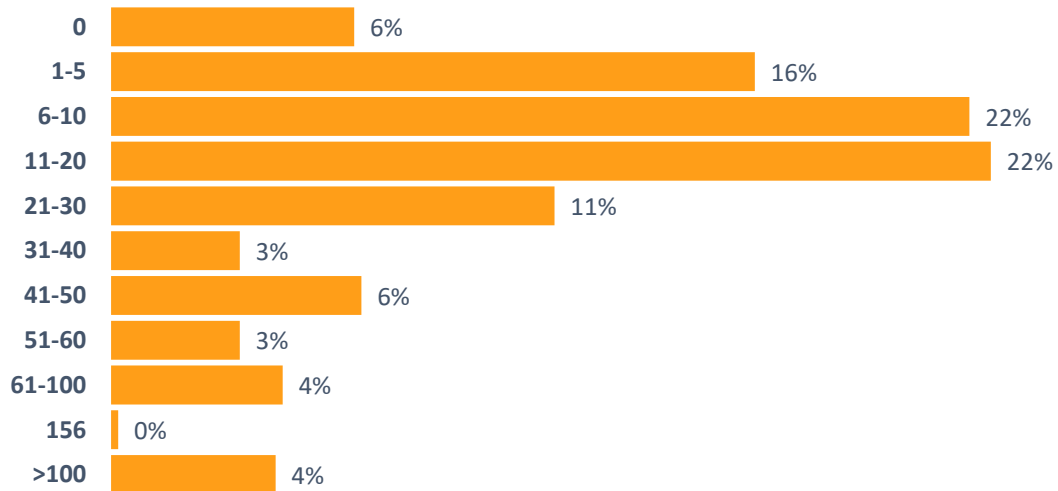
Number of days per week commuting to a job	%
0	43%
1	3%
2	7%
3	6%
4	5%
5	29%
6	5%
7	2%

Q26 | [If commuter] About how many miles is your commute roundtrip?

	Average commute miles per week
All Electric Vehicle	145
Plug-in Hybrid Electric Vehicle	140

County	Average commute miles per week
Addison	179
Bennington	93
Caledonia	189
Chittenden	122
Essex	125
Franklin	195
Grand Isle	267
Lamoille	207
Orange	134
Orleans	172
Rutland	115
Washington	169
Windham	170
Windsor	118

Q27 | About how many times per year do you drive more than 100 miles in a day?



County	Times per year driving more than 100 miles in a day
Addison	26
Bennington	18
Caledonia	41
Chittenden	23
Essex	50
Franklin	42
Grand Isle	15
Lamoille	51
Orange	38
Orleans	30
Rutland	28
Washington	31
Windham	23
Windsor	27

	All-Electric Vehicle	Plug-in Hybrid Electric Vehicle
About how many times per year do you drive more than 100 miles per day?	26	31

Q28 | Any additional comments about acquiring or using your [Car Model] or the State of Vermont PEV incentive program?

The bolt recall has somewhat turned me off of buying a bolt or another electric vehicle from GM. Additionally the battery life is bad to the point of being almost unusable in the winter.
The incentive program made this purchase possible; I would not have been able to afford a new EV without state and federal incentive programs.
Some of the questions seemed based on this being my first PHEV or electric car. In fact, this purchase came after buying a TESLA and setting up my home charging for that car. The charger works for both. I might be willing to charge my PHEV away from home if I knew more about the networks of chargers that are available.
IT ALL WORKED WELL. I JUST WISH THERE WAS MORE MONEY AVAILABLE FOR VEHICLES AND INFRASTRUCTURE.
I did not get a home charger installed until 6 months after purchasing my EV. I had to walk a mile to the nearest level 2 charger. I seriously considered selling my EV when I realized how inconvenient it is to not have a home charger. I was also shocked at how few fast chargers there are in this state, and that the ones that do exist do not necessarily have the plug I need. I am a one-car household. When people ask me about owning an EV, I am quick to say that it is only a feasible option if you can have a home charger, and ideally, if you have a second ICE car for when you need to travel.
Need signs along the highway as to which exits have fast charging or charging. Not only will help EV drivers but will further put the idea of easy charging in the public view.
Car dealership didn't know how to process the incentive so we had to do it after the fact. Love the car. Wish there were more PEVs with ranges of 300 plus miles.
It would be great to have a Tesla dealer in Vermont.
I am very satisfied with the PEV incentive program and am happy that my state offers it to increase EV adoption.
I'm happy with my purchase overall, but think improvements could be made concerning the infrastructure of public charging stations (i.e., quantity, locations nearby other infrastructure like gas stations, welcome centers, town centers), the knowledge of sales and tech staff at dealerships, and incentives for installing home charging stations.
My electric utility (Washington Electric) has a off peak time charging program but it only applies to all EV vehicles... not PHEVs. I would participate in a PHEV rate program or peak time charging program if there was one. Such programs should be offered at the time the utility vehicle incentive is offered to ensure efficient program design and to minimize missed opportunities.
It would have been easier if the incentive program was initiated at the car dealership.
The incentive program is essential to make it affordable.
thank you!
My biggest issue is the inequity among electric utility customers. Mine is Lyndonville Electric, served as are many other small municipal utilities by VPPSA, that offers some rebates and incentives. But these are very small compared to the opportunities for Green Mountain Power customers. The average customer of a small muni doesn't even know about VPPSA. I know this because of my work with HEAT Squad.
Another thought. I was unfamiliar with leasing vs owning, and I previously was not tracking my mileage very well. The lease fee varies based on your best guess of mileage over the coming 3 years. That was stressful and I may have gotten it wrong. More info on that on Drive Electric would be helpful.
Love the car, and the idea of helping improve the environment.
As many Vermonters do, I live in multi-unit housing. These living situations present real challenges for retrofitting charging-station availability. My personal living situation provides an assigned parking space in a common garage, and my condo

association has been open to looking into charging options but the costs of installation are high. Ultimately I have been forced to rely entirely on public charging stations to charge my car. As EVs become more and more prevalent, these kinds of infrastructure issues will urgently need to be addressed.
I'm glad these programs exist
The incentive should be weighted towards favoring BEV over Plug-in hybrids. Both are good but one is better and one actually supports the transition to an all-electric future.
Signs for EV charging so I'm not flipping through an app as I drive around a plaza looking for it.
Work with power companies to subsidize EV charging rates, at least to help motivate people towards the shift.
The dealership I went to did not know about the State rebate and how they could apply for it. I had to inform them about it and that should not be the case. I think the problem might have been with the dealership and the particular sales person who was very nice but not especially informed.
Already traded Model 3 in question for new higher trim Model 3.
Also salesperson question is N/A for Tesla. The best part is never having to deal with a salesperson. I didn't even have to interact with a human to take delivery of my new car.
We consider the PEV a transitional car. We own two cars, one the PEV and another an all-electric Leaf. We would prefer to own/drive only electric vehicles, but the range on most all-electric vehicles is not quite where we would like yet, and the price for all-electric is still too high.
We managed to squeak this lease out but even with the incentives the month payment is still way too high and I am concerned about what type of payment we'll end up when the lease is up and we have to re-finance the car to purchase it. These cars should be made affordable for normal mortals and they just aren't yet.
Not being available at the point of sale is likely a barrier to some folks
I honestly didn't know I got a rebate from the State of VT. It probably went through the sale paperwork. Since I was leasing most of the rebates went to the Dealer, but it lowered the lease payments significantly.
I live in a condo. The type of car I bought is better suited to home living. It's also not ideal for winter as it takes too long to warm up and get into battery mode. By the time it does, I've arrived at my destination using gas. I wouldn't have purchased this vehicle if I knew this. Bad research on my part.
Keep the PEV Incentive Program intact and fully funded until there is mass PEV adoption in Vermont!
No
Update the pricing strategy to reflect market conditions. The current Tesla Model 3 doesn't qualify for the State Rebate. It only qualifies for the Utility Rebate.
The incentive program is top shelf. We used the only to buy and have installed a Tesla Wall Connector. BUT, Vermont needs to allow a Tesla service center to open somewhere in the state and also allow Teslas to be delivered in Vermont. We had to drive to Paramus, NJ to pick up ours. Our friends who live in NH had their Tesla Model 3 delivered. We were told by Tesla that Vermont DMV did not allow Teslas to be delivered in VT. :-)
After I had taken possession of my vehicle, TESLA got me the registration materials (it took 6 weeks) which was required to enroll in VT incentives. Once enrolled and registered I got notice from V Drive Electric that depending on when I purchased my vehicle would dictate IF I get the incentive. That had me panicked because I would not have been able to justify the purchase without the incentive proceeds. I made the cutoff but it was a surprise that I would hope others could avoid if the state clearly warned buyers that there would be a program change which could be consequential - perhaps grandfathering any sales in process...
I think the range goes down more in the very cold temps (below 20) than I was led to believe. I heard 20% decrease, but when it's less than 15 degrees, it's like a 30-40% drop. And I never knew until I had the car that it may charge more slowly in cold temps.
I know the Agency is actively looking for solutions to make up for lost gas tax revenue. I understand the need for this however I oppose flat fees added to annual registration. I know that my gas car was costing me, on average, \$70/year in gas

taxes (not entirely to VT). I suspect if a flat fee is added it will be along the line of \$100/year - based on what other states have done. I oppose that. For me, I would at registering out of state (I have family in PA, MD, GA and FL). For potential buyers I think it would be a negative.

I support a per mile fee, that would be equivalent to what I would pay for a similar gas car. Or a tax on public chargers. I would be fine with a tax on my home charging, but I suspect that is very complicated to separate my home electric use for vehicle vs other uses. But maybe I'm wrong, as my utility does the ability to slow my charger during peak usage times.

Yes, the incentive is not enough. I've found that the sweet spot for me is a car payment of about \$200/mo. I got this by leasing my Ioniq but only because there was a manufacturer discount of \$10000. Total discounts were \$15000 which is what allowed me to lease a new EV. I'm not sure what I'm going to do when my lease is up.

The rebates made all the difference in my choosing to purchase a PEV

More level III chargers are needed to support the current and future ownership and tourists visiting with EV's. The charging infrastructure in this state is ridiculous, particularly given the cold and long driving distances. People can buy or lease EV's here, but they don't dare take them too far for risk of running out of charge, particularly in the winter months.

I am getting more range than some others because of the way I drive --- Maybe offer classes in how to maximize vehicle range by driving style. I am able to make net zero trips in town because of my style of driving ---- regenerating enough to make up for electrical use. If range is the issue, teach people how to drive reasonably. So it takes 30 minutes more to get back from Boston - but you can do it on one charge, for example.

It was very helpful when sales rep told me about the state incentive program and also when the dealership did the application paperwork. Wish I knew how to get the info out to general public to raise awareness and encourage more purchases

I didn't realize that the state incentive would be taxed - it was a surprise to see this on my tax return at the end of the year.

My work commute is down to 2 days per week due to COVID-19 as is my longer trips. I had leased a 2017 Bolt and when the lease ran out in 2020, I was planning on buying out the lease. Between the GM incentives and State rebates I decided to buy a 2020.

I would have preferred replacing the Volt with another one as it was a perfect transition vehicle until there is better charging infrastructure. I was able to do 80+% of my driving all electric and didn't have to worry about finding a functional charging station on longer trips. I only got the Bolt because Chevy stopped making the Volt.

This is my second Nissan LEAF. I love driving it and gets lots of questions from family and friends about driving a PEV. For about 95% of my driving this car is ideal. When I take longer trips, which isn't all that often, it would be nice if charging stations were more abundant so I could plug during visits. I've had a few long and late trips home. I'm used to owning my cars a long time, but might consider leasing my next PEV for three years.

I chose prius prime because of the efficiency, but wish it had a larger battery capacity; and of course. more storage space... can't have both!

Thank you so much for making our EV purchase possible!

Here's a plus of PEV ownership that never gets mentioned: the sheer euphoria that comes with having a fun-to-drive car that gives you the added satisfaction of knowing that you're doing something concrete to save the planet.

It's a great car. I am going to be looking at the new Subaru Solterra when it becomes available and thinking of going completely electric.

None

The biggest issue is that my Leaf has a CHAdeMO fast charger port. This limits my opportunities considerably, as they are being phased out. We were going to take it to Connecticut for a funeral, but decided the charging issues would be too stressful. I finally charged at my nearest fast charger successfully for the first time yesterday. (We got a \$250 EVGo credit I've been trying to use) It has been down every time I've tried until yesterday. Turns out part of it may have been pilot error.

Like it , some power companies have better incentives I see

Need more charging stations especially at work where it could be utilized the most

Not sure if any state incentives are still available for this car, as MSRP is now above \$40,000. Also, since Tesla does not operate dealerships here, the incentive was taxable.
Please be sure to incentivize preowned PEV's and hybrids as well - the point is to avoid using fossil fuels.
no
It is important that buyers understand the limitations that exist with range (especially winter range) and with the current inadequate fast charging infrastructure. I am now retired so I use my Bolt for most driving needs. Before my retirement, I often had to take my pick-up truck to job sites and meetings as my winter range was too short for the Bolt.
Make it a ticket-able traffic violation for a non-PEV to block access to a charger!
Was a great leasing experience....will upgrade to the Nissan Ariya when released
I didn't receive my Vermont rebate yet and my electric company didn't qualified me for low income extra incentive even though I qualified for it but did not receive any explanation from them.
Thank you to all parties that are working to make ownership of an EV or PHEV more likely!
The purchase incentive does not pertain to leased vehicles but this survey doesn't account for that in your questions.
Also, we need a better guide to how various outside temps affect battery charge as we are doing long distance driving.
Thanks!
This is the best car I have ever owned. The best for the environment, quietest, safety features, smoothest riding, least expensive to maintain. The incentive program should be continued and expanded to include more money and the threshold for a vehicle to qualify should be increased.
The most convenient, and best, Kia dealer for Rutland is in Queensbury, NY. Though acquiring the rebates that made my purchase possible were fairly easy to track down for me, the New York dealer had no part of signing up for them, even though they also own the Nissan (Leaf) dealership in Rutland. Having that dealer participate from New York, might increase the sales to Vermonters.
Very grateful that Vermont has incentive programs.
Tesla 3s are all-electric, not PEVs, but I have tried to answer usefully.
I think it would be helpful if the information about the State of VT PEV incentive program was better known. I had never heard of it before the car dealer mentioned it and he had just learned of it from another buyer.
Love my all electric car
The dealers need to really explain the difference in charging mileage in winter. It is significant. I drove from Burlington to see family in Indiana over Christmas and I almost got stranded 3 times. I planned the trip in October, when I was getting 275-290 miles per charge and it was a shock in winter weather that the car would not charge more than 190-210 miles and took 45 minutes longer to charge! The midwest is a decade behind in charger availability, too. That needs to be increased before these cars can be driven cross-country.
We're super happy with our Kia. It works great. We have one car for our 2 person household and this electric car is it.
The state MUST prioritize rollout of FastDC charging for GM products statewide on the same scale as that Tesla has adopted. Level 2 is outdated and serves little use. VTrans subject matter experts, GMP, and REV should decide where to place state-funded infrastructure. It should NOT be decided by munis or other stakeholders who would prioritize placement of state-funded infrastructure in small, out of the way communities when more well-used sites are always full (ie MontP stations are ALWAYS full, build more there, many more. Lots of people drive EVs to MontP from throughout the state.
We were shopping for a new car. We've had a Prius for 11. years, very happy with dependability, mileage, longevity. So we favored getting another Prius. I didn't know much at all about plug-in hybrid Prius Prime. I liked the plug-in feature when I

learned about it from the salesperson, but disappointed by only 20 mi. of elec power. I surprised myself by buying the showroom model on the spot. Didn't even take a test drive. I'm not an impulsive person but I just did it.
Enjoyed working with the State
None
The LEAF is a fine vehicle, although winter battery capacity is much lower than advertised. We like the vehicle and are happy with it, despite the constraints of battery capacity.
I did not get a Federal rebate because covid happened and I didn't make enough money to need to pay taxes large enough to offset \$7500. I also ended up paying taxes on the \$4000 Vermont Tax rebate - as if it was money I made rather than spent. That was weird, and it wasn't a mistake of taxes as far as I can tell and as far as I have researched -- POOR people NEED BETTER INCENTIVES -- if you say \$7500 federal rebate, it should give us money back since we spent it, rather than assume we're rich enough to have to pay \$7500 in taxes and maybe get something back. In my case it was nothing at all. I was taxed on the VT rebate, and was then screwed and got nothing federally. That was really crappy. I'm on a fixed income and make less than \$12k a year and I saved up for three years to make this happen. The rebates were CRITICAL. Luckily I'm ridiculously good at being poor, but I've been screwed all year. Covid made it worse, but it was bad...
The \$125000 income threshold seems low for many people who would like to own this type of vehicle to get a Vermont rebate. I would also say it would have been helpful to know that the electrical component hasn't works on the cold January day. Could never use a pure electrical car in Vermont as you only vehicle.
In order for PEV's to become more popular with the general public there will need to be a much greater dissemination of information regarding the true limitations in performance especially during the winter months. After 18 months I continue to learn more about how it operates in cold conditions. It should also be widely advertised what the most effective charging strategies should be, because it is a very different approach compared to an ICE vehicle.
It doesn't help that my Bolt is under GM recall for replacement of the battery and the battery is currently limited to 80% of maximum charge. Additionally, charging stations need to increase in availability as well as, their reliability. Right now I see too many stations have reliability issues for whatever reason. This unreliability makes it very difficult to plan a trip that will require a recharge.
So more and better information about using a PEV and better reliability of charging stations.
The Vermont PEV incentive program is very good and easy to use especially when done through a participating dealer.
Even though I don't use DC fast chargers that often, knowing that they are around is a confidence builder. That is, you can't necessarily judge their success by exactly how often they are used. They might increase purchases of PEVs without much use at all. Back when I converted gas cars to EVs we had a saying Converting cars is easy compared to converting people.
We sold 2 ICE vehicles to help pay for the VW ID4. The state and federal rebates were very important to us - we're both pretty retired and have limited funds.
I wish it was larger.
I love my Bolt and appreciate the incentives that make it an affordable choice for me, as well as the off-peak charging program with BED/Packetized Energy. I also appreciated the personnel/leasing process at Lamoille Valley Chevrolet even though they are a little over an hour away from me.
My wife and I were not even considering buying a new car, but the combination of incentives from the feds, state, and GMP dropped the price for this Prius Prime to very attractable levels. Hoping to purchase an all electric vehicle in the not too distant future as we are generating a bit more power with ours home solar panels than we are consuming. Keep up the incentives! Bring on the charging stations!
speaking up is important
It is the best car I have ever owned. It handles very well in snow and on icy roads..I am a per diem worker so it is impossible for me to estimate how many miles I drive for workm
Spread the word, PVs WORK IN VERMONT

Thank you- we're very happy with our purchase!
I really appreciate the financial incentives to get more EVs on the road and now we need to have the public chargers to match the number of EVs. Especially for those of us that don't have at-home or at-work charging.
Utility GMT providing a free L2 charger was key!
Please ad the base model Ford lightning
I wanted to drive electric, but there were so many drawbacks/risks to justify the price. However, the incentives made it possible to try out an electric vehicle and I absolutely love it. It unfortunately cannot replace the gas 4WD SUV for certain tasks. Also, the cost of public charging (\$0.31/minute) is 3x more than gas if using the gas SUV. That makes the PEV only possible as a commuter car.
Cost is the number one objection I hear about EVs. Generous, accessible rebates to bring down the purchase cost is the best way to increase EV uptake in Vermont.
Vermont needs more DC fast charging stations, lots more.
Love the car! Keep up the incentives! Oh and in lieu of paying fuel taxes we are ok with an alternative transportation taxation for EV's.
The incentives made it a no-brainer. My net cost including all incentives was about \$17,000.00 after trade-in. Most of my driving is 15 miles or less on a daily basis. I am very satisfied, but may look at an all electric vehicle if I ever buy another car. I'm 81 and this one may last as long as I need a car.
GM has assigned me a concierge to keep track of on a daily basis of when my battery replacements will be coming. At least they worked to make it, possible for me to park,in my garage, but 134 to 151 charged miles isn't sufficient. When my new batteries arrive I will be able to charge 301 miles and that will be most welcome.
Not at this time.
The Vermont state PEV program, in combination with the Green Mountain Power incentives (purchase rebate and Level 2 charger) and the federal tax credit, make us very proud to live here: Bravo to all three organizations! The vehicle has performed very well as far as performance, reliability, energy consumption and relative value. The dealership salesperson was neither a positive or negative factor in our purchase/evaluation process.
We need more chargers and incentives as well as more models by manufacturers to get us quicker into EVs so we can cut emissions by half. That would be huge for our planet! Thank you!
Would like to see more public level 3 charging stations
Rav 4 has an all electric range 2 or 3x further than it's best competition. I live between Hardwick and Montpelier. Shorter range would have me burning gas everyday. I'm getting 117 miles to the gallon. Next car will be all electric if level 3 charging becomes available here.
A good decision. I find the battery recall/limitations frustrating at the moment.
Thank you for helping me to afford a car.
The incentives really helped push me toward looking at PHEV and not an efficient gas vehicle. I was interested in electric already, but it was the extra incentive i needed. The money back and the fuel savings made it silly not to buy an EV of some sort.
I look forward to more varieties of electric vehicles being available in the future.
I thought the whole process was great
We love this car and couldn't have afforded it without GMP and the State of VT rebates. Thank you!
this is my fourth EV Nissan Leaf.... love it and am looking forward to 400 mile range

I got the free level 2 charger but couldn't find an electrician to install it for months and then when I did find someone they wanted to charge several thousand dollars so I sent it back. It would have taken many years for the charger to pay for the cost of installation in savings. Maybe create a program to help smooth that part of the process?
As I think about it, I think it was a post from Drive Electric Vermont with rebate info that got me going. What I didn't know until I visited a dealer was that the rebates are all rolled into the lease period, making the car EXTREMELY affordable. I had never leased before, but that was a no-brainer. Many people may think they can't afford a new car even with all the rebates, not realizing how affordable a leased EV is.
I wish PEV incentives were available for more expensive EVs. Also, wish a household were not limited to one incentive. I was hoping to purchase a longer range PEV, but I have used our one household allowance for the incentive already.
Thank you!
I doubt if I would ever go back to driving a gas powered engine. In fact I'm trying to find a PEV with more range. And I'm try to talk my friends into PEV purchases too. This is good progress. Thank you VT for your support of this technology.
To move from hybrid to EV we need to dramatically increase infrastructure
Vermont is leading the way in the nation for making PEV's available for the community, particularly for low income individuals like myself. I could not have afforded my current vehicle without this help, and it is an amazing service that is largely unknown in the general public. While the advantage of the state is leading among the nation, the infrastructure to support the vehicles is aging, lacking repairs, and inconsistent. This and the challenge to overcome stigmas of PEV's are the major challenges for transitioning to a cleaner, greener world in transportation.
I loved my Leaf, but when the lease was up we turned it in and did not lease another car for me because of car prices being so high, we are getting by with one car now.
Everything has been good!
Thanks to VT for encouraging going electric. My experience with the Bolt has been smooth and fun. I'm not usually in the vanguard...but being there has been an unexpected pleasure.
I'm grateful
Keep up the good work. Thank you.
We are incredibly grateful for and proud of all the people and programs that made available the fantastic financial support these incentives offered us!
Thank you so much! Because of them, we were able to install our own solar array and go 100% PEV, get heat pumps, and a heat pump hot water heater. It's immensely gratifying to live in a state with so much real support for getting off fossil fuels.
I rave about our Bolts to people all the time.
The only issue was the car needed to be registered before getting the rebate. VT dmv didn't get me plates for 6 months!!!!!! Then it was another month before the rebate came.
Thank you for asking!
I AM so grateful for the rebates and I could not have done it without these rebates. Thank you!
We were unable to take advantage of the free Level 2 charger Washington Electric offered because we could not get a Wifi service in our driveway.
Need better charging at multi-unit housing
The Drive Electric Vermont event in Waterbury is the reason we purchased an EV. We thought it was out of our price range before the event. Learning about incentives, seeing EVs in person, and talking with other owners is what pushed us into buying one when my car died. We almost didn't get one though because there were none to be found. It seems like I got the last 2022 Kona EV in New England last year...we had to go all the way to Maine to pick it up. Finding an EV to purchase was the single hardest part of the process. Another comment is that the program disincentivizes buying used cars. I felt guilty spending so much for the luxury of having a new car but financially it just made sense to buy new since the incentives made

it better (not that their were used EVs available to buy anyway though!) than purchasing used. Thank you for providing these incentives and helping us move to EV. We are expecting our first baby in a few weeks and felt morally obligated for his sake to live greener.

We LOVE our Prius Prime, and the combination of rebates brought the cost down to the price of a regular Prius, so it was an easy choice to buy it!

My biggest disappointment with this car is that it apparently 'insists' on being in gas-engine mode when the weather is very cold (won't use the EV even when EV is chosen). Because our daily commute is very short, this means that the engine never warms up, and the mpg is about the same as my '09 Prius. I do not understand.

I traded in my fully electric Nissan Leaf because it wasn't suitable as a sole vehicle for Vermont winters. It's a great car for running errands and doing short trips. I couldn't drive it safely during negative temperature drops in Vermont because I couldn't run the heater if I wanted to reach my destination. I had to conserve miles and this became dangerous because my windshield froze (so visibility became an issue) and my hands and feet hurt from being so cold. I switched to a plug in hybrid because it allows me to use gas when I have to during the coldest part of winter, it eliminates my anxiety range and I am still able to drive on electricity for my work commute.

Just to reiterate - an incentive for used purchases is a MUCH superior environmental policy to disproportionate incentives for new vehicles. The incentives should be extended to used vehicles.

My commute numbers above are kind of averages. I'm in a 2 car household but the Nissan Leaf has become our go-to car and the 2nd car only gets used maybe once a week. So the Leaf probably covers 90%+ of our driving, which has been great.

We also have a Tesla-- the Tesla charging network is better than those for other cars by an order of magnitude. My charging comments above relate to non-Tesla networks. I have driven EVs exclusively since 2013-- and the non-Tesla networks have barely improved in overall usability.

Just that we are grateful for VT's effort to increase reliable charging stations throughout the state as well as work toward helping low income VT'ers to acquire PEVs or hybridvehicles

Have Tesla too

We like our EV even better than we expected. (Wish I could say the same for the dealership.)

The rebates we received from the state of VT and Green Mountain Power..and the free home charger made it possible for us to afford an EV. A wonderful program.

Thanks, VT!

Great program, thanks. I am disappointed in winter driving efficiency and didn't have any warning about it but probably would have bought it anyway.

I was very happy that Alderman's, the dealership I leased my most recent Bolt from, handled all the rebate paperwork for me. There were SIX total rebates, so it was a lot of minutia! As for downsides, I was bummed that my new Bolt was also part of the massive battery recall from GM -- and that there is still no sign of when the recall repair can happen due to supply chain issues. Oh well, at least I park my car outside, so there is no danger of it burning my house down while I wait. :-)

I leased my 2020 Bolt to replace a 2017 Bolt. There weren't many changes or improvements but I've been really happy with it. It was stressful driving to Boston because I-89 has virtually no charging available, especially in New Hampshire. It's disappointing that there are not more fast chargers around town. I sometimes use the one at the Alchemist in Stowe. The pricing is so different between municipalities; it's pretty confusing. It's annoying that the main parking garage in town and the only chargers in Winooski are Chadmo chargers for the Leaf, and there aren't any for regular Level 2 cars. The incentive from the state and Burlington Electric were awesome, but didn't make my decision for me. I knew I wanted another Bolt. I was in cancer treatment, though, and not really working at all, so it was a real help. I do save money having an electric car and am constantly answering questions and talking to people about it when I'm plugged in. The Hannaford charging stations near my house in the NNE are pretty frustrating because a lot of regular cars park there. I wish chargers were put further away from the doors of stores because I'd guess we're all happy to walk a little more and not have to fight people for spots. I've had people yell at me, like I'm getting special treatment by having a spot close to the store. People are lazy, weird and angry lately.

Q29 | Do you own or rent your primary residence?

	Incentive recipients	Vermont population
Homeowners	86%	71%
Renters	14%	29%

Q30 | Which of the following best describes your primary residence?

	Incentive recipients	Vermont population
Single-family home	81%	70%
Duplex	4%	18%
Condo	10%	
Multi-family apartment	4%	
Mobile home	0%	6%

Q31 | [If Condo or Multifamily] Where do you normally park your vehicle at night?

	Condo	Multifamily apartment
Garage	21%	27%
Carport	32%	2%
Dedicated outdoor parking space	19%	20%
Shared outdoor parking space	16%	48%
On-street parking	0%	4%

Q32 | Are there solar panels at your primary residence?

	Single-Family Home	Duplex	Condo	Multifamily Apartment	Mobile Home
Yes	40%	9%	24%	4%	0%
No	60%	91%	76%	96%	100%

	Homeowners	Renters
Yes	39%	12%
No	61%	88%

Q33 | Which of the following best describes your annual household income before taxes?

	Incentive recipients	Vermont population
Less than \$10,000	0%	5%
\$10,000 to \$14,999	1%	5%
\$15,000 to \$24,999	3%	9%
\$25,000 to \$34,999	11%	9%
\$35,000 to \$49,999	13%	12%
\$50,000 to \$74,999	23%	19%
\$75,000 to \$99,999	24%	14%
\$100,000 to \$149,999	22%	16%
≥\$150,000	3%	11%
<i>8% of respondents indicated "Prefer not to say"</i>		

Q34 | Are you of Hispanic, Latino, or Spanish origin?

	Incentive recipients	Vermont population
Hispanic/Latino/Spanish	3%	2%
Not Hispanic/Latino/Spanish	97%	98%
<i>4% of respondents indicated "Prefer not to say"</i>		

Q35 | What is your race? Please select all that apply.

	Incentive recipients	Vermont population
White	97%	94%
Asian	1%	1%
American Indian or Native Alaskan	1%	<1%
Other	1%	<1%
Multiple races	0%	2%
Black or African American	0%	1%
Pacific Islander	0%	<1%
<i>4% of respondents indicated "Prefer not to say"</i>		

Q36 | What is your age?

	Incentive recipients	Vermont population (<20 years old omitted)
<20	0%	NA
20-29	4%	17%
30-39	11%	15%
40-49	17%	15%
50-59	22%	18%
60-69	27%	19%
70-79	17%	12%
80 or older	2%	6%

Q37 | Which of the following best describe your gender?

	Incentive recipients	Vermont population
Female	44%	50%
Male	56%	50%
Other	0%	NA