

VT Incentives for Cleaner Transportation

PRESENTATION FOR HOUSE TRANSPORTATION COMMITTEE, FEBRUARY 9, 2023

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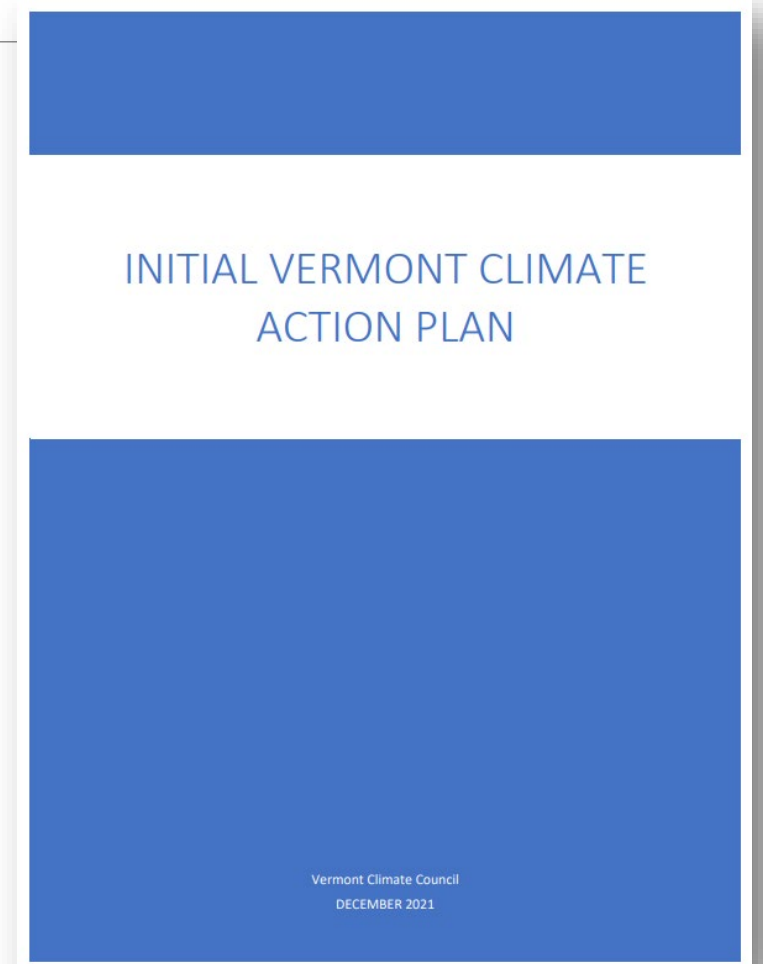
Climate Action Plan

Initial plan finalized in December 2021

EV Adoption Goals:

- **27,000** PEVs by **2025** (17% of sales)
- **126,000** PEVs by **2030** (68% of sales)

- Reduce GHG emissions below 2005 GHG emissions in Vermont 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.



CAP – Pathway 1 – Light Duty Electrification Strategies

1) Technology Forcing ZEV Regulation (100% by 2035)

2) EV Purchase Incentives

- a) New & used EVs and electric bicycles, designed for equity
- b) Expand to fleets
- c) Continue MileageSmart and Replace Your Ride
- d) Vehicle Efficiency Purchase and Use Tax Adjustment

3) EV Charging Investment

- a) Continue support for DCFC and Level 2
- b) Public, workplace and multifamily priorities
- c) Direct the PUC to consider EV charging rates

4) Transportation Climate Initiative (TCI)

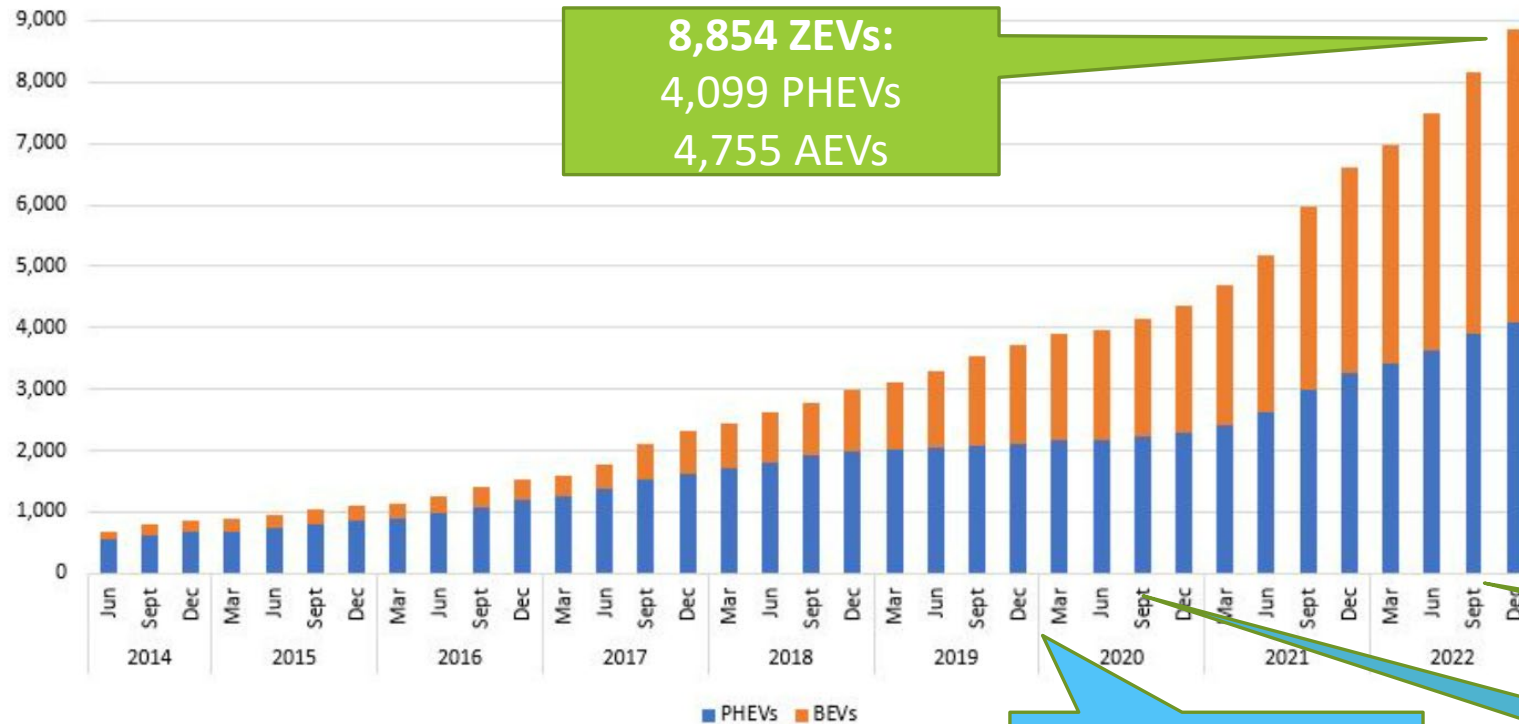
5) EV and VMT reduction Outreach and Education

Electrify 27,000
vehicles by 2025

126,000 by 2030

EV Adoption in Vermont

Total Passenger EVs in Vermont



Vehicles Incentivized (CY20 – CY22)

New PEVs:	1,791
MileageSmart:	435
Replace Your Ride:	7

% of total registered PEVs: 22%

FY2023:

26% of net registrations incentivized
(349 of 1,352 PEVs in Q1 & Q2)

New PEV Program

MileageSmart

Replace Your Ride

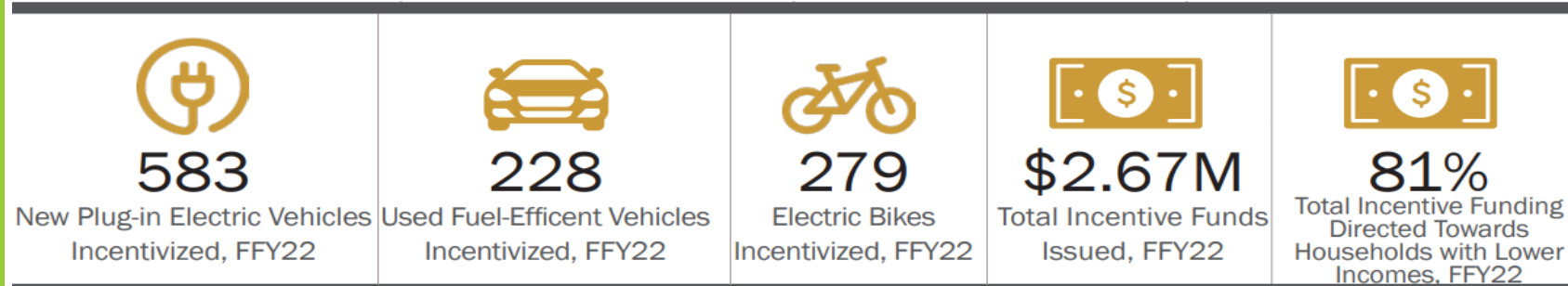
VT Statewide Incentive Programs

- Incentive Program for New Plug-in Electric Vehicles (PEVs)
- Replace Your Ride

Vermont Investments in Cleaner Transportation

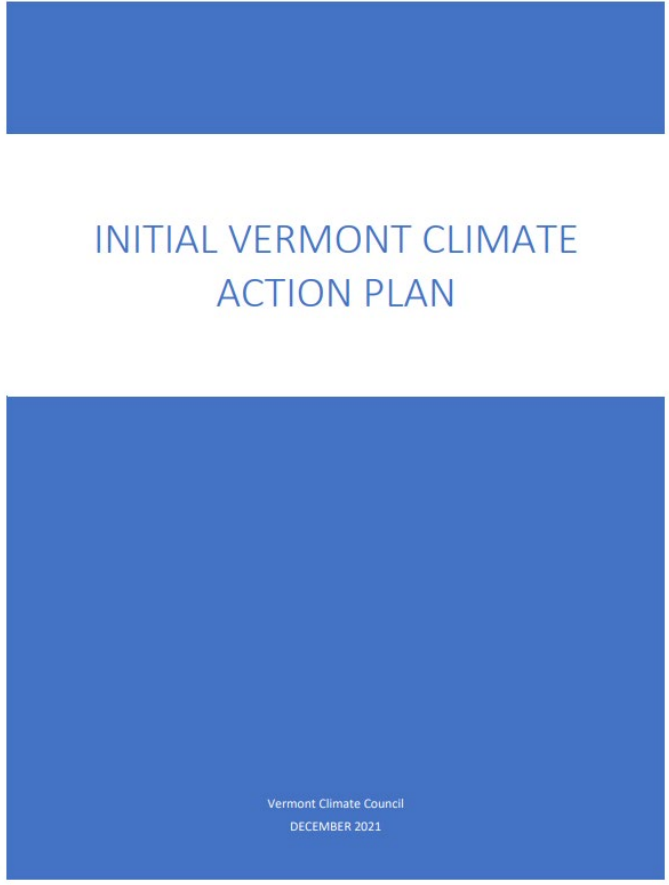
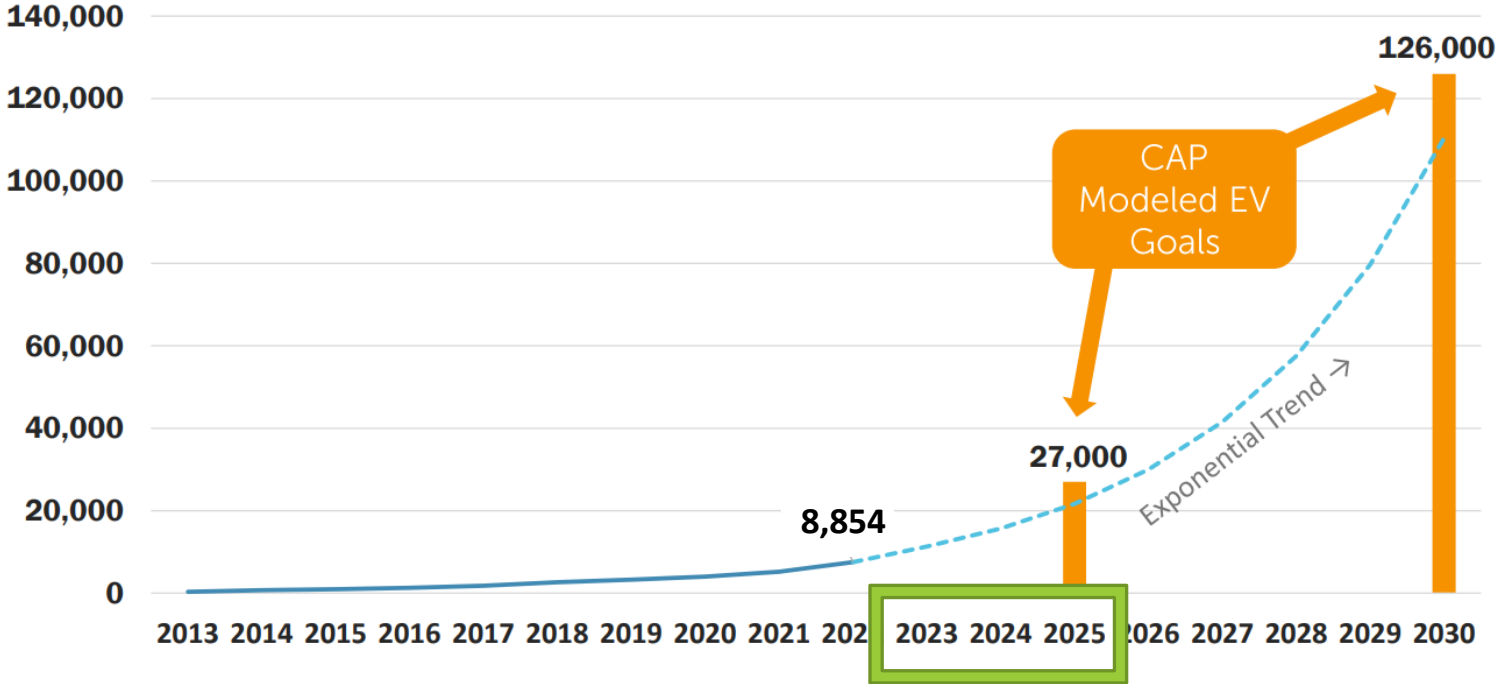
Over **\$20 million** authorized in SFY2023 for vehicle incentives and cleaner transportation options

- Incentives for New PEVs, \$12 million
- MileageSmart, \$3 million
- Replace Your Ride, \$3 million
- eBike Incentive Program, \$50k
- Drive Electric Vermont, \$2 million



EV Adoption in Vermont

How many vehicles does Vermont need to electrify?



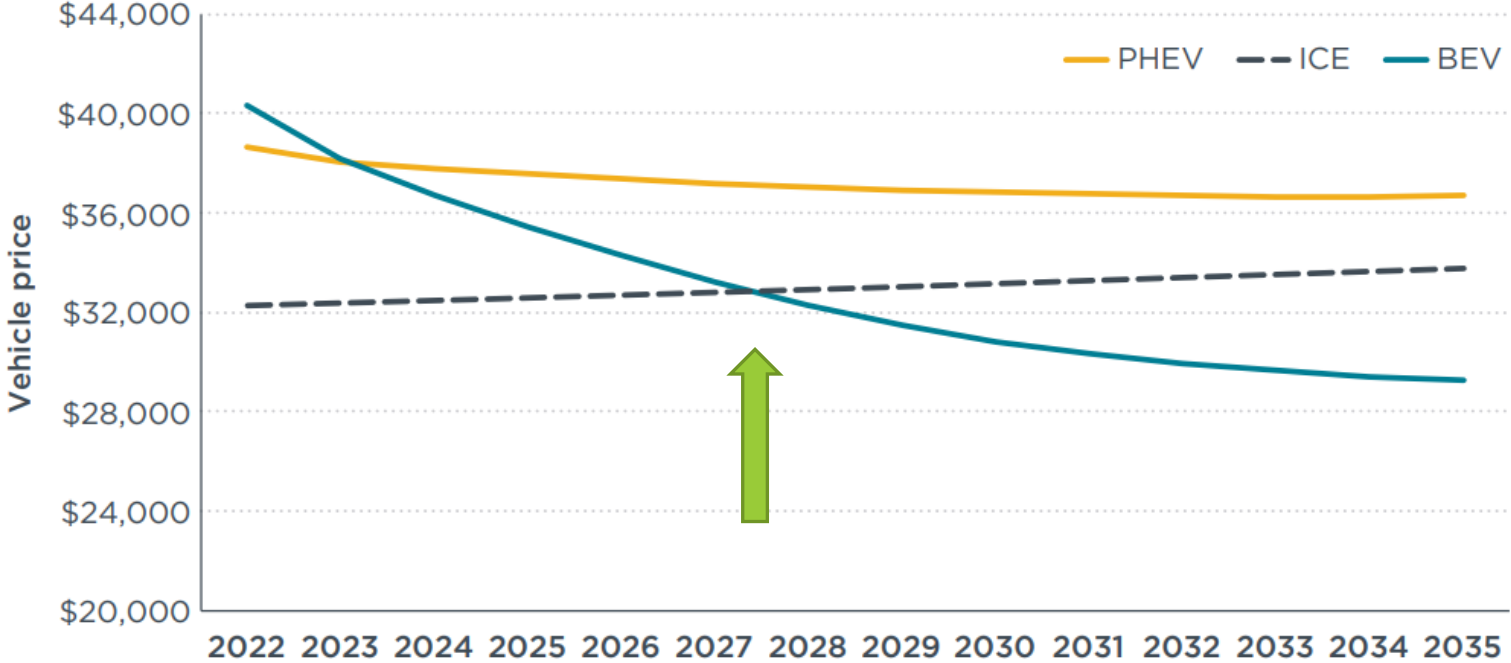
Incentive Program Considerations

- Current new and used vehicle markets (near-term supply constraints, price inflation)
 - How to address increased prices?
 - How to address supply of used vehicles?
- Longer-term market projections
- Inflationary pressures on household income and costs
- Other Incentive funds, guidelines, and timelines
 - Inflation Reduction Act (point-of-sale option in 2024; automaker manufacturing gains in 2026 or beyond)
 - Local utility incentives
 - Expanding home charging and public charging access

Incentive Program Recommendations

- Current new and used vehicle markets (near-term supply constraints, price inflation)
 - How to address increased prices? **Increase MSRP caps**
 - How to address supply of used vehicles? **Frontload number of *new* vehicles incentivized**
 - Increase incentive amounts for New PEVs;
 - Increase number of eligible participants;
 - Increase number of eligible vehicles
- Longer-term market projections **Plan for decreasing incentives over time**
- Inflationary pressures on household income and costs **Increase thresholds for qualifying households**
- Other Incentive funds, guidelines, and timelines **Provide flexibility to Agency for programmatic adjustments**
 - Inflation Reduction Act (point-of-sale option in 2024; automaker manufacturing gains in 2026 or beyond)
 - Local utility incentives
 - Expanding home charging and public charging access

Projected Vehicle Price Parity

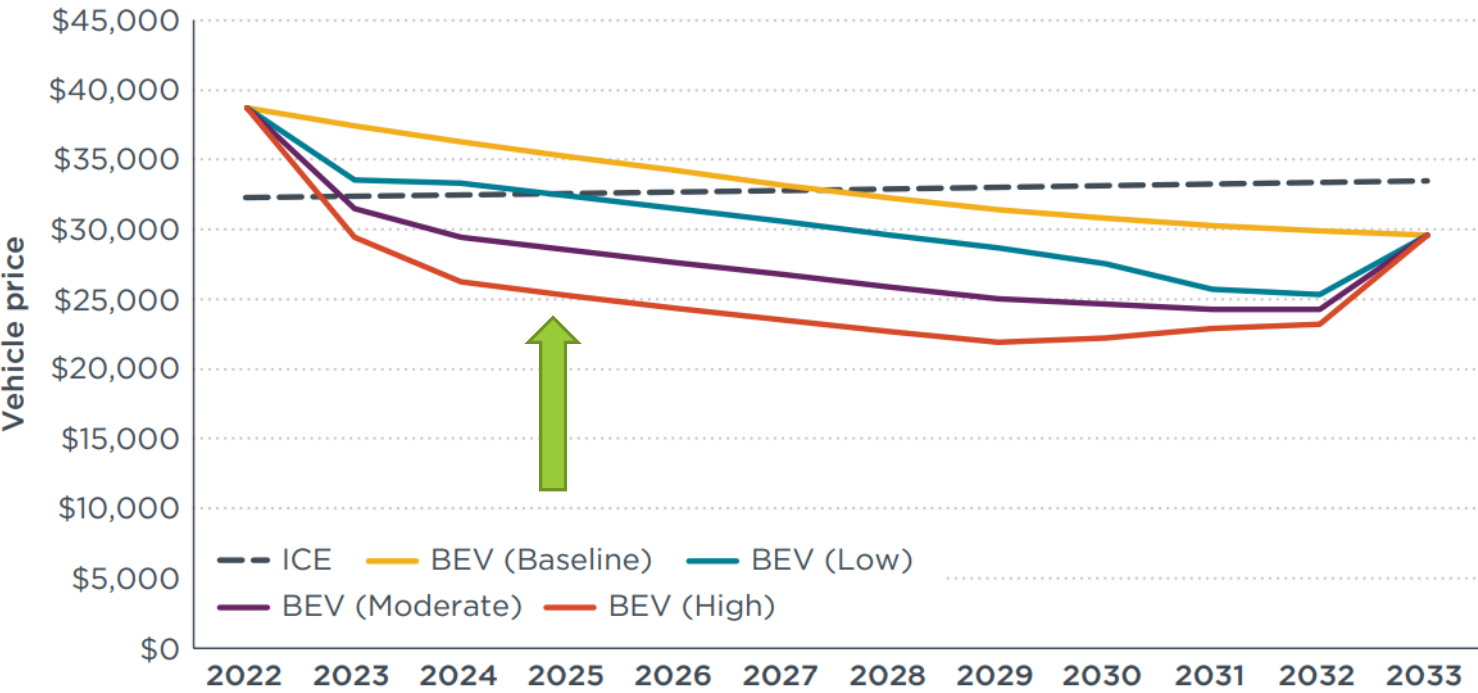


Vehicle Price Parity
2027-2028

Figure 1. Sales-weighted average conventional and electric vehicle prices applied in this analysis

Source: January 2023 [ICCT Report](#)

Projected Vehicle Price Parity with IRA



Vehicle Price Parity factoring in Inflation Reduction Act tax credits 2023-2025

Figure 4. Sales-weighted average new ICE and BEV prices with IRA incentives and tax credits applied

Source: January 2023 [ICCT Report](#)

Inflation Reduction Act

New Clean Vehicle Tax Credit (Households) up to \$7,500

2022 – 2032

Modified Adjusted Gross Income:

- \$300,000 for married couples filing jointly
- \$225,000 for heads of households
- \$150,000 for all other filers

Varying criteria from August 2022 – December 2022

January 2023 – March 2023

March 2023 – January 2024

Every year thereafter to 2029

Vehicle MSRP:

- \$80,000 for vans, sport utility vehicles and pickup trucks
- \$55,000 for other vehicles

Other Vehicle Criteria:

- Have a battery capacity of at least 7 kilowatt hours
- Have a gross vehicle weight rating of less than 14,000 pounds
- Be made by a qualified manufacturer. See [index of qualified manufacturers and vehicles](#).
- Undergo final assembly in North America

Inflation Reduction Act

Used Clean Vehicle Tax Credit (Households) up to \$4,000

2023 – 2032

Modified Adjusted Gross Income:

- \$150,000 for married couples filing jointly
- \$112,500 for heads of households
- \$75,000 for all other filers

January 2024 – full credit can be applied

at the point-of-sale passing through to the dealership

You can use your modified AGI from the year you take delivery of the vehicle or the year before, whichever less. If your income is below the threshold for 1 of the two years, you can claim the credit.

Vehicle Price:

- Have a sale price of \$25,000 or less

Other Vehicle Criteria:

- Have a model year at least 2 years earlier than the calendar year when you buy it. For example, a vehicle purchased in 2023 would need a model year of 2021 or older.
- Not have already been transferred after August 16, 2022, to a qualified buyer.
- Have a gross vehicle weight rating of less than 14,000 pounds
- Be an eligible FCV or plug-in EV with a battery capacity of at least 7 kilowatt hours

Inflation Reduction Act

Commercial Clean Vehicle Tax Credit up to \$7,500 or \$40,000 2023 – 2032

Qualifying Entities:

- Businesses and tax-exempt organizations qualify for the credit.
- There is no limit on the number of credits businesses can claim. For businesses, the credits are nonrefundable, so you can't get back more on the credit than you owe in taxes. A45W credit can be carried over as a general business credit

Credit Amount: the lesser of

- 30% of your basis in the vehicle if not powered by gas or diesel
- The incremental cost of the vehicle
- The maximum credit is \$7,500 for qualified vehicles with gross vehicle weight ratings (GVWRs) of under 14,000 pounds and \$40,000 for all other vehicles.

Other Vehicle Criteria:

The vehicle or machinery must also be plug-in electric vehicle that draws significant propulsion from an electric motor with a battery capacity of at least:

- 7 kilowatt hours if the gross vehicle weight rating (GVWR) is under 14,000 pounds
- 15 kilowatt hours if the GVWR is 14,000 pounds or more

Vermont Vehicle Incentive Programs

Perspective from other state EV incentive programs

2/9/2023

Brian Jones, Director U.S. Transportation Programs



Center for
Sustainable
Energy®

About CSE

Mission-driven national nonprofit

Center for Sustainable Energy® (CSE) is a national nonprofit that accelerates adoption of clean transportation and distributed energy through effective and equitable program design and administration.

- Administer cutting-edge programs valued at over \$4 billion for governments, utilities and the private sector across the U.S.
- Leader in data-driven incentive program design and administration for:
 - Electric vehicle and EV charging incentive programs
 - Renewable energy incentive programs (solar and storage)
- Headquartered in San Diego with more than 250 employees across the nation

Objective and trusted

- Governments, utilities and the private sector trust CSE for its data-driven and software-enabled approach, deep domain expertise and customer-focused team.
- CSE's fee-for-service business model frees it from the influence of shareholders, members and donors, and ensures its independence.
- CSE's data and insights have informed policy at the local, state and federal level.

One mission —

DECARBONIZE.®

Our vision is a future with sustainable, equitable and resilient transportation, buildings and communities.



Program Design

	CHEAPR (CT)	MOR-EV (MA)	Vermont New PEV	Charge Up NJ	Drive Clean (NY)
Incentive Amount	FCEV: \$7,500 - \$9,500 ¹ BEV: \$2,250 - \$4,250 PHEV: \$750 - \$2,250	FCEV/BEV: \$3,500 PHEV: \$1,500	BEV: \$2,500-\$4,000 PHEV: \$1,500-\$3,000	BEV only: \$2,000 - \$4,000	FCEV, PHEV, BEV: \$500 - \$2,000
MSRP cap	\$50k MSRP by trim	\$55K Purchase Price	BEV: \$45K PHEV: \$40K	\$55k final MSRP	\$42k base model MSRP ¹
Income guidelines	N/A for base; LI program for Rebate+	N/A	All applicants; tiered	N/A	N/A
Other	Used (Rebate+ only) FCEV: \$7,500 BEV: \$3,000 PHEV: \$1,125	N/A – potential 2023 Used, Low-income and trade-in	Replace Your Ride - \$3,000 adder or voucher	N/A	N/A



Less Restrictive / More Generous

More Restrictive / Less Generous

¹CHEAPR offers “Rebate+” adder for residents enrolled in income-qualified programs

²Drive Clean offers a \$500 rebate for any EV over the MSRP cap

Participation – July ‘22 – Nov. ‘22

Program/State	2022 population (U.S. Census Bureau)	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
Vermont New PEV (VT)	647,064	264	0.41
Charge Up New Jersey (NJ)	9,261,699	1,293	0.14
Drive Clean (NY)	19,677,151	12,518	0.64

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

Tables adapted from "State of Vermont PEV Incentive Programs 2022 Annual Report"

Market Conditions

High uncertainty

- Federal tax credit – Critical mineral components; SUV classification
- Price wars(?) – Recent price drops for Tesla and Ford, inexpensive GM SUVs
- Inventory – Wait times reducing, but still significant challenges



Considerations

More generous short-term incentives (New PEV)

Drive demand, accelerate development of used market, and reach rebate-essential customers who would normally not purchase a new vehicle.

MSRP cap flexibility

Develop a transparent process that allows the program to adapt to changing market conditions, while maintaining sufficient oversight.

Increase Replace Your Ride incentive

Incentive should be greater than residual value of vehicle, and retiring younger vehicles has greater tailpipe emissions impact.

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Incentive Program Recommendations

Principles:

- Simplicity—keep things simple for consumers, dealerships, program administration
- Equity—continue to provide greater benefits to those who need it most for highest impact
- Flexibility—create room within legislative parameters on incentive amounts and guidelines to respond to changing conditions and remain aligned with climate action goals

Proposals:

- Increase base MSRP caps to reflect price increases and new models (\$50k for households; \$60k for fleets)
- Increase income limits to adjust for inflation and add separate Head of Household category
- Raise incentive limits (\$5k) for both New PEV and Replace Your Ride program with adaptive “up to” language
- Set electric range standards for PHEVs beginning with minimum of 20 miles, with flexibility for Agency to adjust
- Create new fleet incentive out of Replace Your Ride appropriation to stack with IRA credits/direct pay option for commercial, municipal, and other tax-exempt entities

Eligible Vehicle Models


Recommendation: Increase base MSRP caps to \$50,000 for New PEVs and \$60,000 for Electrify Your Fleet


- Within current price caps, vehicle eligibility becomes more difficult for consumers and dealerships to track
- Consumer choice and vehicle availability critical for near-term EV adoption increases
- Price caps become less important when programs are income-sensitive

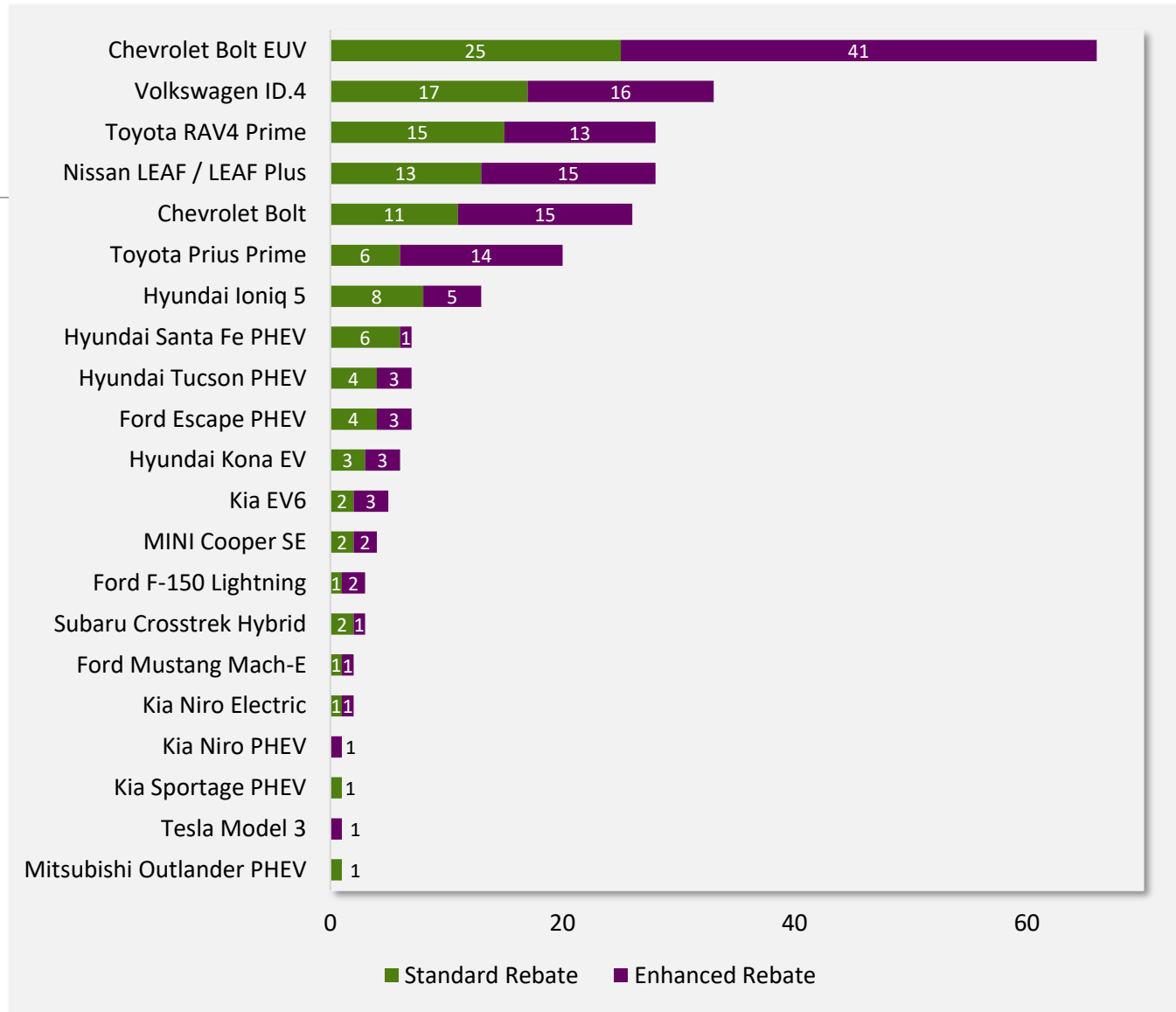
	Make / Model	Electric Range (miles)	Total Range (miles)	Current Base MSRP	Eligible Model Year(s)	Eligibility Notes
Plug-in Hybrid Vehicles (Gasoline + Electric)						
1	Chrysler Pacifica Hybrid	32	520	\$46,978	2017-2020	Model year 2021 Pacifica ineligible
2	Ford Escape PHEV	47	340	\$38,500	2021-2023	
3	Honda Clarity PHEV	47	340	\$33,400	2018-2021	Production ended Aug 2021
4	Hyundai Ioniq PHEV	29	630	\$26,800	2018-2021	Production ended July 2022
5	Hyundai Santa Fe PHEV	30	440	\$40,000	2022-2023	
6	Hyundai Tucson PHEV	33	420	\$37,050	2022-2023	
7	Kia Niro PHEV	26	560	\$33,740	2018-2023	
8	Kia Sportage PHEV	34	420	\$38,490	2023	
9	Mini Countryman SE All4	12	270	\$41,500	2018-2020	Model year 2021+ ineligible
10	Mitsubishi Outlander PHEV	24	310	\$39,845	2018-2023	
11	Subaru Crosstrek Hybrid	17	480	\$36,845	2019-2023	
12	Toyota Prius Prime	25	640	\$28,770	2017-2022	
13	Toyota RAV4 Prime	42	600	\$41,590	2021-2022	Orders after 6/3/2022 ineligible
All-Electric Vehicles						
14	Chevrolet Bolt	259	259	\$25,600	2017-2023	
15	Chevrolet Bolt EUV	247	247	\$27,200	2023	
16	Ford F-150 Lightning	230-320	230-320	\$51,974	2022	Model Year 2023+ ineligible; orders after 8/11/2022 ineligible
17	Ford Mustang Mach-E	224-303	224-303	\$46,895	2022	Model Year 2023+ ineligible; orders after 8/30/2022 ineligible
18	Hyundai Ioniq EV	170	170	\$33,245	2017-2021	Production ended July 2022
19	Hyundai Ioniq 5	220-303	220-303	\$41,450	2022-2023	
20	Hyundai Kona EV	258	258	\$34,000	2019-2023	
21	Kia EV6	232-310	232-310	\$48,500	2022	Model Year 2023+ ineligible; orders after 11/10/2022 ineligible
22	Kia Niro Electric	239	239	\$39,450	2019-2023	
23	Mini Cooper SE	110	110	\$34,225	2018-2023	
24	Nissan Ariya	205-304	205-304	\$43,190	2023	
25	Nissan LEAF / LEAF Plus	149-226	149-226	\$28,040	2011-2023	
26	Subaru Solterra	228	228	\$44,995	2023	
27	Toyota bZ4X	222-252	222-252	\$42,000	2023	
28	Tesla Model 3	263-353	263-353	\$43,990	N/A	Must have ordered on or before October 5, 2021 or taken delivery on or after January 13, 2023 to be eligible. MSRP was above the State's cap between those dates.
29	Volkswagen ID.4	260	260	\$37,495	2021-2023	

SFY23 Vehicle Models

Key stats for SFY2023:

 **72%** All-electric vehicles (AEVs) vs. Plug-in Hybrids (PHEVs), increased from 61% last year

 **~53%** enhanced incentives for households with low incomes, increased from 46% last year



Household Eligibility

Recommendation: Increase AGI amounts for all tax filing categories and add “Head of Household” to reflect more accurate household cost burdens

Tax Filing Status	Adjusted Gross Income (AGI) Limits for Enhanced and Standard Incentives	State Incentive Amount	
		Plug-in Hybrid Electric Vehicle	All-Electric Vehicle
Individual filing as single or head of household	\$50,000 or less	\$3,000	\$4,000
	\$50,001 up to \$100,000	\$1,500	\$2,500
Married filing jointly	\$75,000 or less	\$3,000	\$4,000
	\$75,001 up to \$125,000	\$1,500	\$2,500
Married filing separately	\$50,000 or less	\$3,000	\$4,000
	\$50,001 up to \$100,000	\$1,500	\$2,500
Individual filing as qualifying widower	\$75,000 or less	\$3,000	\$4,000
	\$75,001 up to \$125,000	\$1,500	\$2,500



Tax Filing Status (unless noted)	Adjusted Gross Income (AGI) (unless noted)
Individual (single)	\$60,000 or less
	\$60,001–\$100,000
Individual (head of household)	\$75,000 or less
	\$75,001–\$125,000
Individual (surviving spouse/qualifying widower)	\$90,000 or less
	\$90,001–\$150,000
Married (jointly)	\$90,000 or less
	\$90,001–\$150,000
Married (separately)	\$60,000 or less
	\$60,001–\$100,000

Household Eligibility

MileageSmart

Number of Persons in Household	Annual	Monthly
1	\$51,968.00	\$4,330.67
2	\$59,392.00	\$4,949.33
3	\$66,816.00	\$5,568.00
4	\$74,240.00	\$6,186.67
5	\$80,179.20	\$6,681.60
6	\$86,118.40	\$7,176.53
7	\$92,057.60	\$7,671.47
8	\$97,996.80	\$8,166.40

Incentive Program for New PEVs

Tax Filing Status	Adjusted Gross Income (AGI) Limits for Enhanced and Standard Incentives	State Incentive Amount	
		Plug-in Hybrid Electric Vehicle	All-Electric Vehicle
Individual filing as single or head of household	\$50,000 or less	\$3,000	\$4,000
	\$50,001 up to \$100,000	\$1,500	\$2,500
Married filing jointly	\$75,000 or less	\$3,000	\$4,000
	\$75,001 up to \$125,000	\$1,500	\$2,500
Married filing separately	\$50,000 or less	\$3,000	\$4,000
	\$50,001 up to \$100,000	\$1,500	\$2,500
Individual filing as qualifying widower	\$75,000 or less	\$3,000	\$4,000
	\$75,001 up to \$125,000	\$1,500	\$2,500

Household Eligibility

Filing Status	Income Brackets	Low (PHEVs - \$3000; AEVs - \$5000)	Moderate (PHEVs - \$1500; AEVs - \$3000)	Totals	Percent in Lower-income Bracket	Percent of Whole
Current		202,441	80,808	283,249	71%	75%
Married Filing Jointly	75k; 75-125k	46,626	37,648	84,274		
Head of Household	50k; 50-100k	19053	6932	25,985		
All others	50k; 50-100k	136762	36228	172,990		
Proposed		231,576	63,052	294,628	79%	78%
Married Filing Jointly	90k; 90-150k	56,626	38,277	94,903		
Head of Household	75k; 75-125k	24058	2677	26,735		
All others	60k; 60-100k	150892	22,098	172,990		

Based on 2020 State of Vermont tax data

Incentive Levels

Recommendation: Increase incentive level caps to \$5,000 or more, and provide more flexibility within those in order to make program adjustments as the Agency continuously evaluates performance and conditions change

- Original incentive amount for New PEV Program was \$5,000 and the upper limit should at least be equivalent to the MileageSmart program, if not more to encourage quicker expansion of overall PEV fleet
- “Up to” language gives Agency authority to make informed decisions on a rolling basis, but obviates need for complicated process to obtain permission before making changes to more rigid incentive structure
- Allows Agency to reduce certain levels and over time, as warranted

Incentive Levels

Current

Incentive Program	New BEV	New PHEV	Used PEV	Used Hybrid
VT New PEVs	\$ 4,000	\$ 3,000	\$ -	\$ -
Replace Your Ride	\$ 3,000	\$ 3,000	\$ 3,000	\$ -
MileageSmart	\$ -	\$ -	\$ 5,000	\$ 5,000
Inflation Reduction Act	\$ 7,500	\$ 7,500	\$ 4,000	\$ -
Local Utilities	\$ 3,200	\$ 2,300	\$ 1,500	\$ -
Max Incentive Total	\$ 17,700	\$ 15,800	\$ 13,500	\$ 5,000

Proposed

Incentive Program	New BEV	New PHEV	Used PEV	Used Hybrid
VT New PEVs	\$ 5,000	\$ 3,000	\$ -	\$ -
Replace Your Ride	\$ 5,000	\$ 5,000	\$ 5,000	\$ -
MileageSmart	\$ -	\$ -	\$ 5,000	\$ 5,000
Inflation Reduction Act	\$ 7,500	\$ 7,500	\$ 4,000	\$ -
Local Utilities	\$ 3,000	\$ 2,300	\$ 1,500	\$ -
Max Incentive Total	\$ 20,500	\$ 17,800	\$ 15,500	\$ 5,000

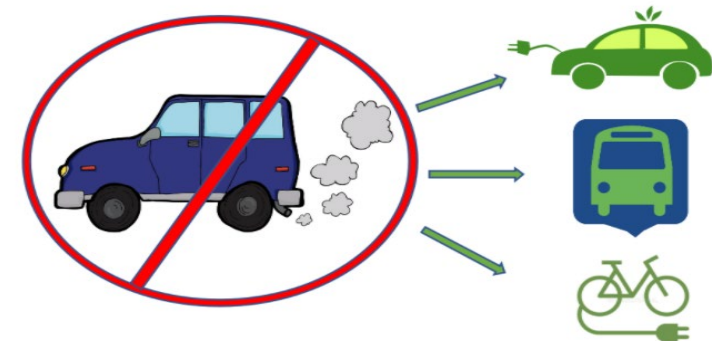
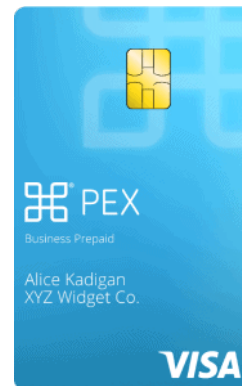
Replace Your Ride

- \$3000 affords limited opportunities for applicants with older cars to benefit financially from program
- Providing lower benefit to moderate income households might help participation on the margins
- Time needed to whitelist more mobility vendors in PEX card system and actively promote program to reduce vehicle ownership where possible

Program Summary

Center for Sustainable Energy launched program in September 2022

\$3,000 voucher for Vermonters to replace 10+ year-old less efficient vehicles with cleaner transportation options (PEVs, bikes, e-bikes, e-motorcycles, shared mobility)



Participants must qualify for either MileageSmart or lower income bracket for New PEV Incentives

Electrify Your Fleet

Recommendation: Using \$500,000 from existing Replace Your Ride funds, create new fleet incentive to encourage faster pace of adoption and expand used PEV market in nearer term as fleets turn over

- Up to \$2,500 for Businesses, municipalities, tax-exempt organizations to stack with IRA credits
- Base MSRP of \$60,000 to allow for electric light-duty trucks and utility vehicles
- Demonstrate fossil-fuel replacement and GHG reductions
- Like Replace Your Ride, allow for other cleaner options like e-bikes/e-cargo bikes, electric motorcycles, snowmobiles, shared mobility, etc.



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