Road Usage Charges for Electric Vehicles

SENATE FINANCE COMMITTEE, APRIL 13, 2023

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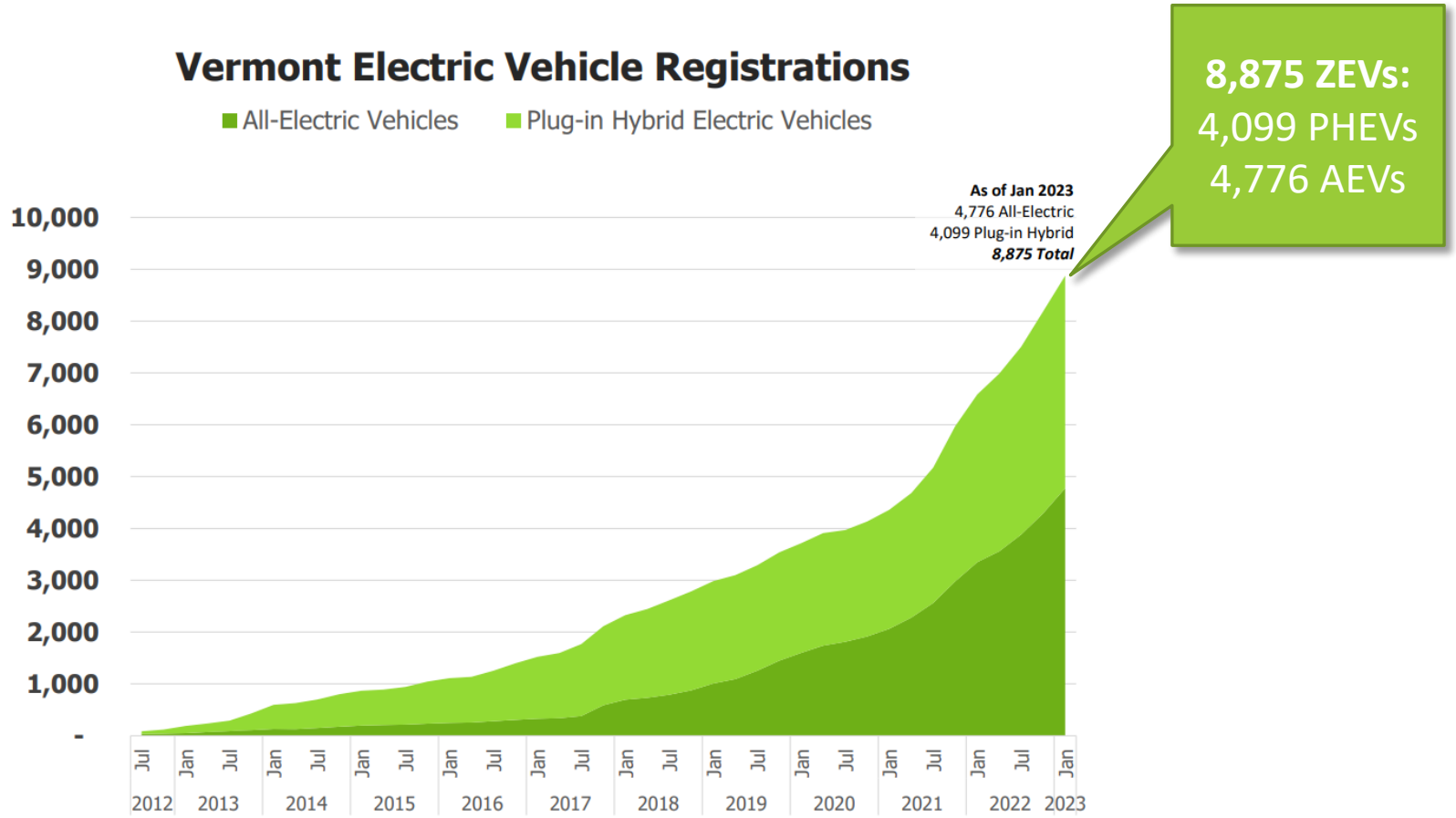
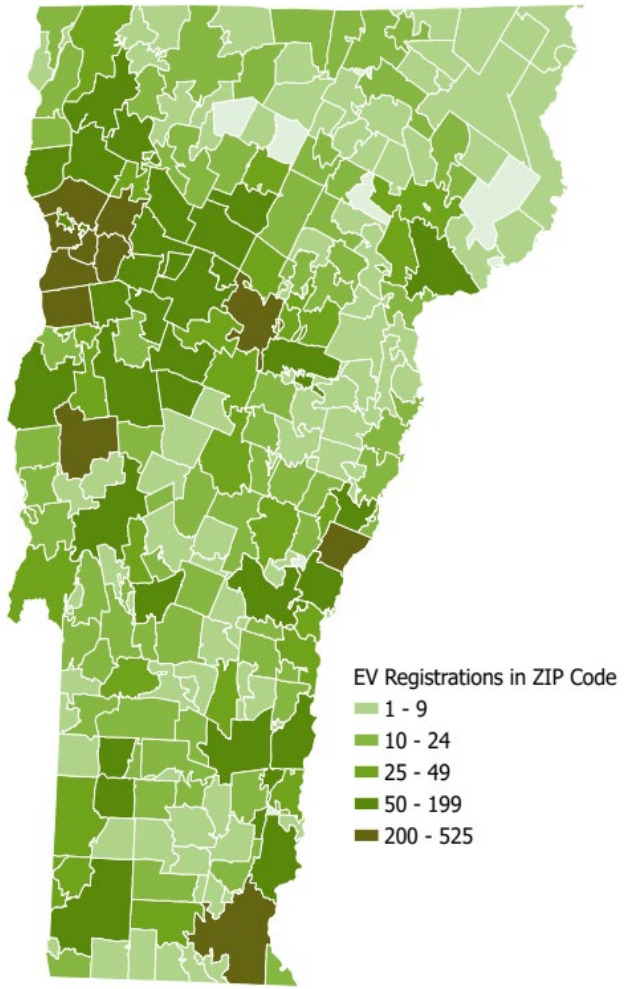
EV Adoption in Vermont



8,875 ZEVs:
4,099 PHEVs
4,776 AEVs



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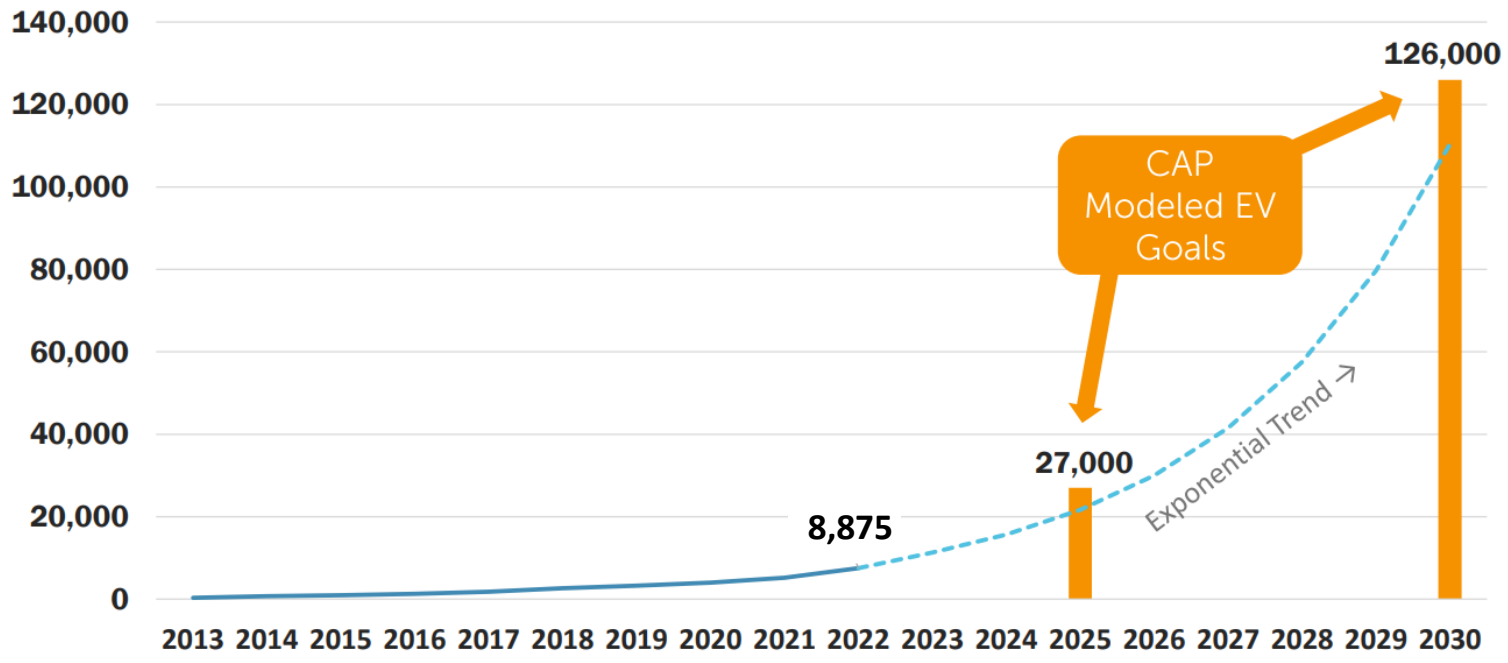
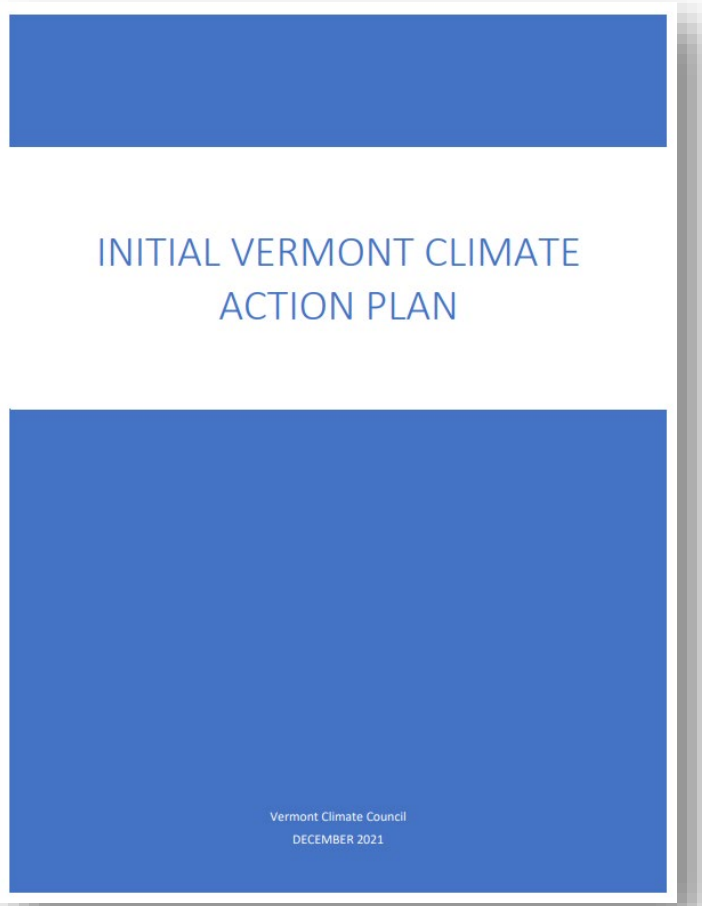
EV Adoption in Vermont

How many vehicles does Vermont need to electrify?





EV Adoption in Vermont

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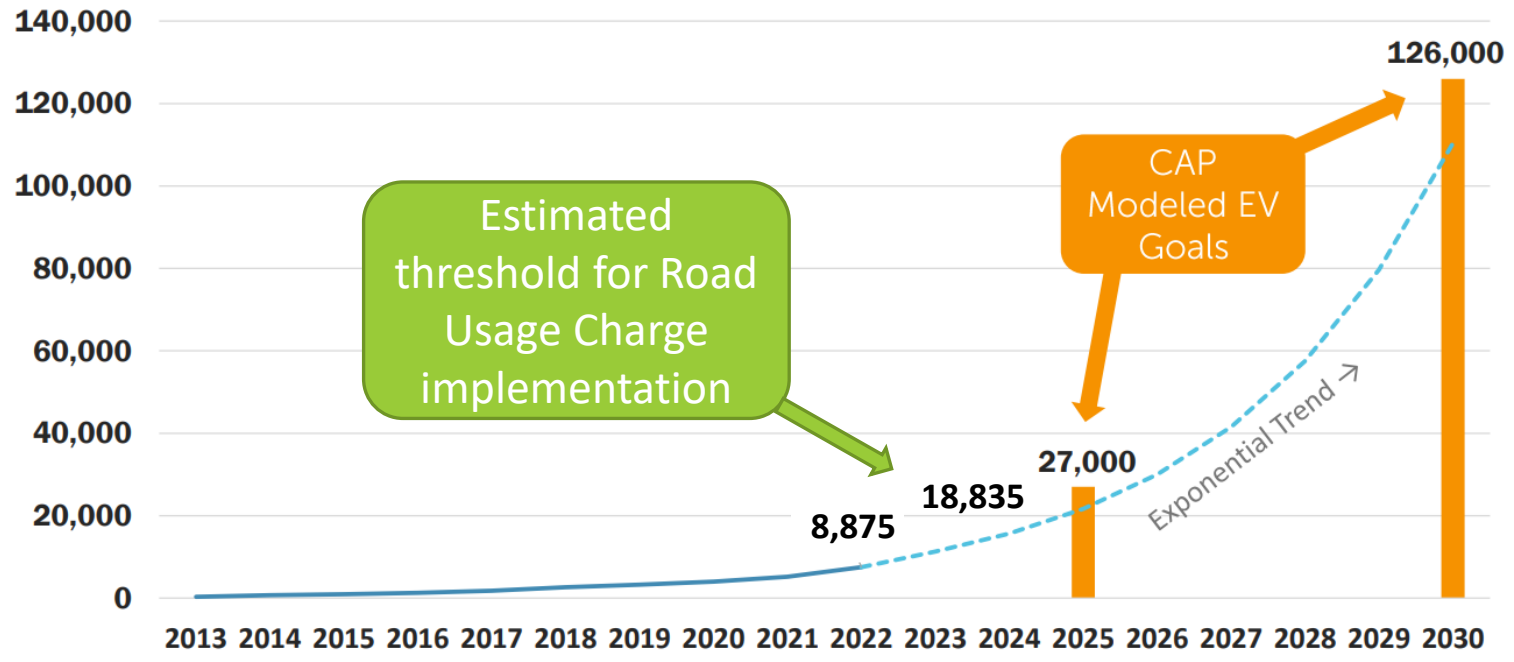

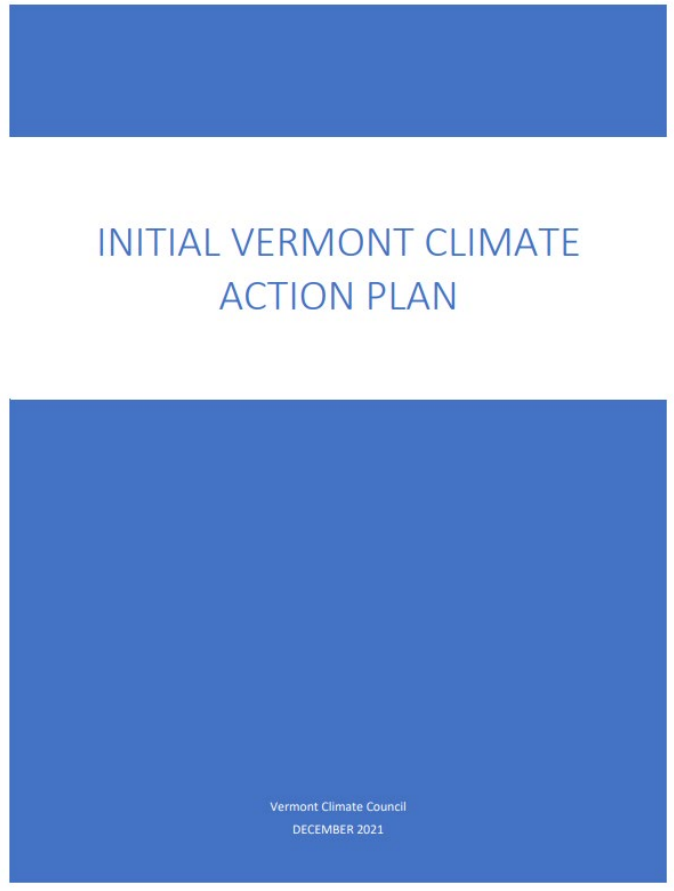

Sec. 15. 2016 Plug-In Hybrid and Electric Vehicle Registration Fees (vermont.gov)

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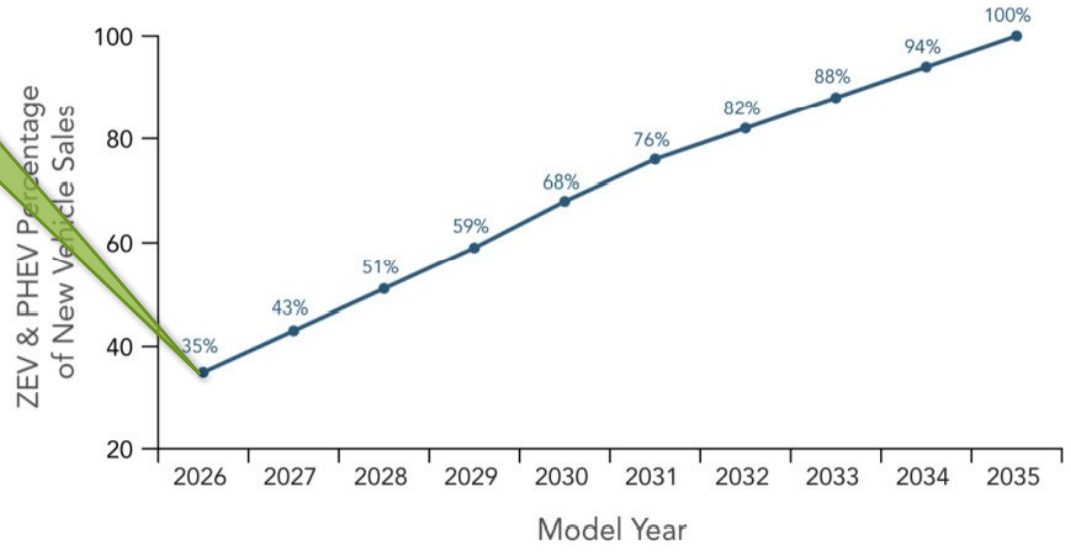
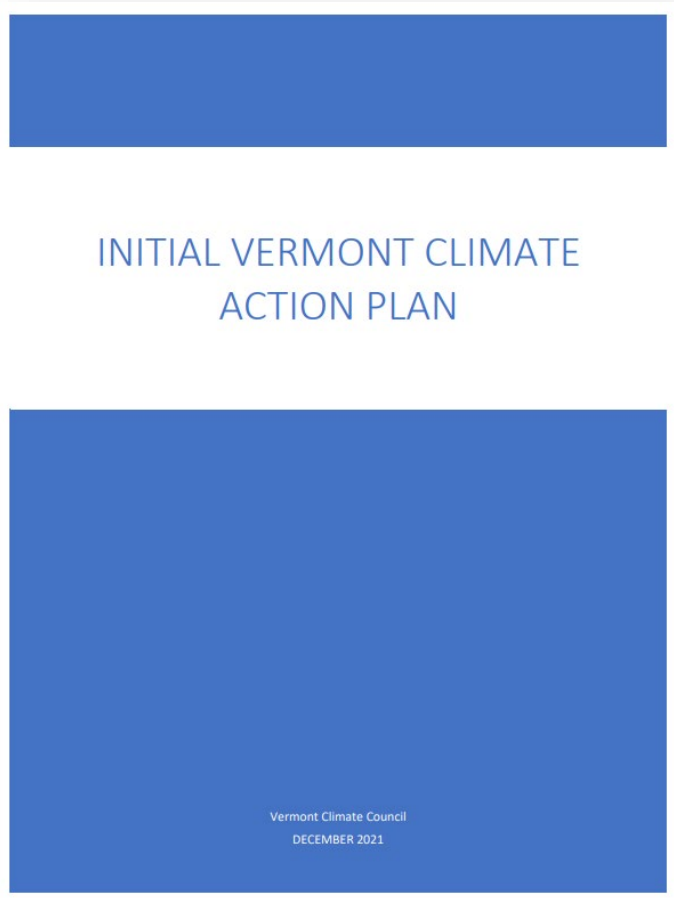
EV Adoption in Vermont

35% of new vehicle sales by 2026

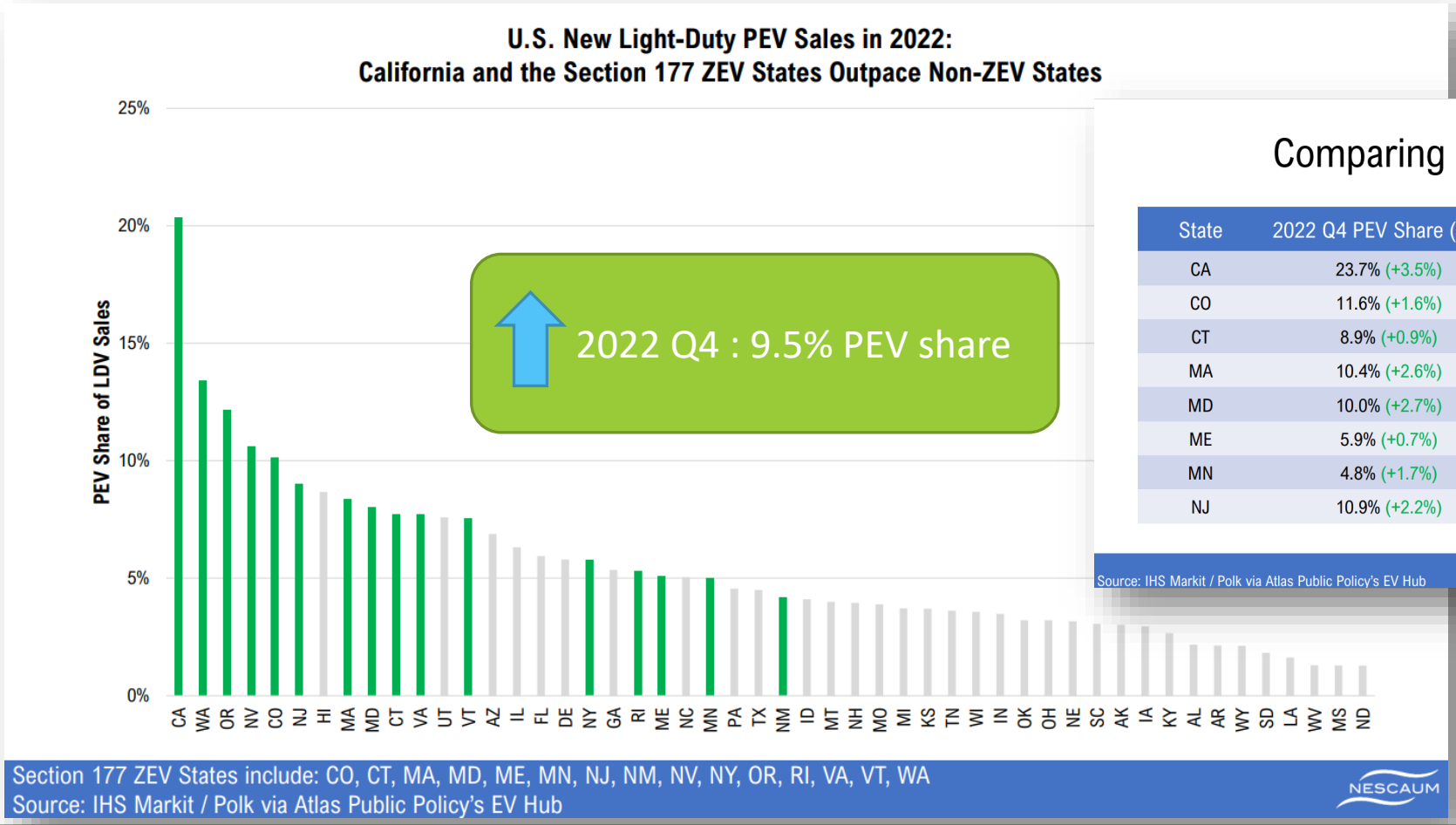
Vermont's Low and Zero Vehicle Regulation

The new regulation accelerates requirements that automakers deliver an increasing number of zero-emission light-duty vehicles each year beginning in model year 2026. Sales of new ZEVs and PHEVs will start with 35% that year, build to 68% in 2030, and reach 100% in 2035.





EV Adoption in Vermont



Comparing 2022 Q3 & Q4 Sales

State	2022 Q4 PEV Share (± Q3)	State	2022 Q4 PEV Share (± Q3)
CA	23.7% (+3.5%)	NM	4.7% (+0.4%)
CO	11.6% (+1.6%)	NV	13.0% (+1.4%)
CT	8.9% (+0.9%)	NY	6.6% (+1.0%)
MA	10.4% (+2.6%)	OR	15.4% (+2.7%)
MD	10.0% (+2.7%)	RI	6.1% (+0.8%)
ME	5.9% (+0.7%)		
MN	4.8% (+1.7%)	VT	9.5% (+2.0%)
NJ	10.9% (+2.2%)		

Source: IHS Markit / Polk via Atlas Public Policy's EV Hub

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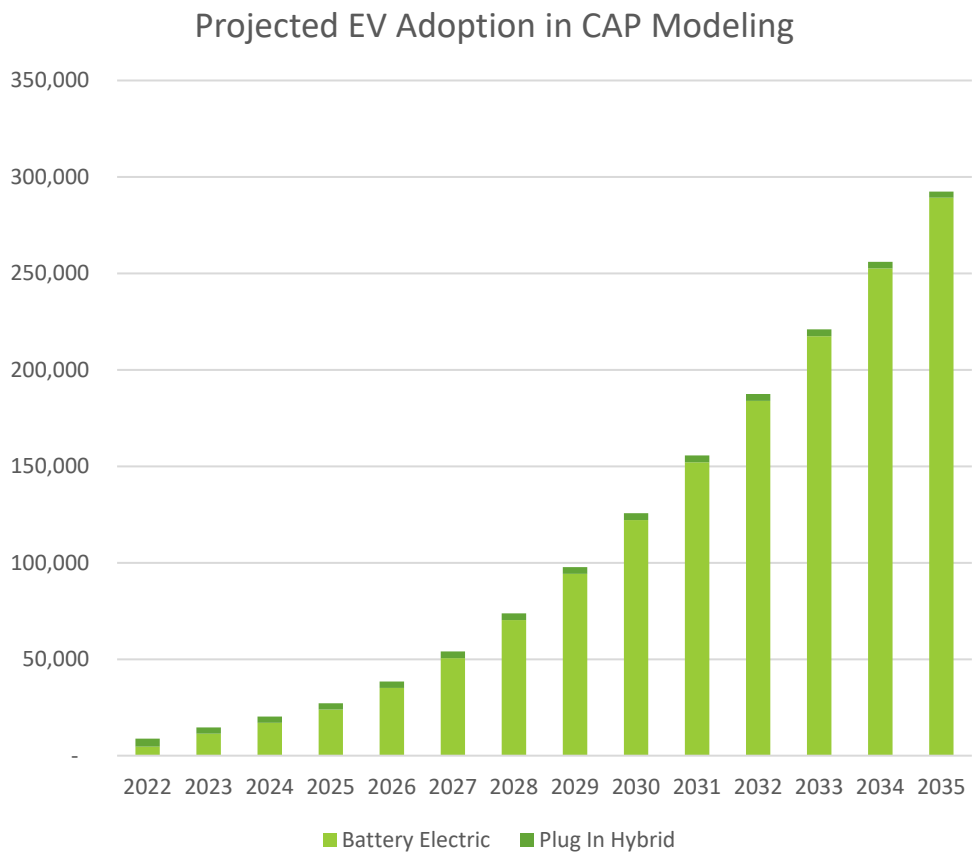
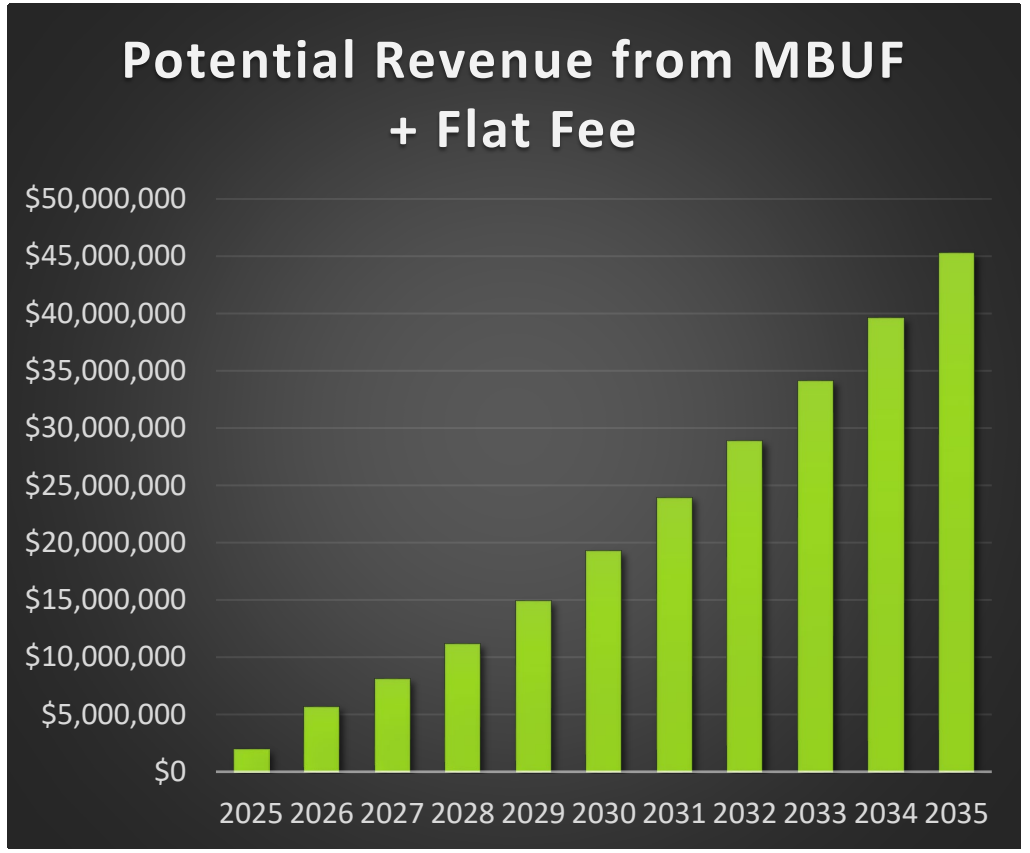
Climate Action Plan Modeling and MBUF Projections





Projected Vehicle Price Parity

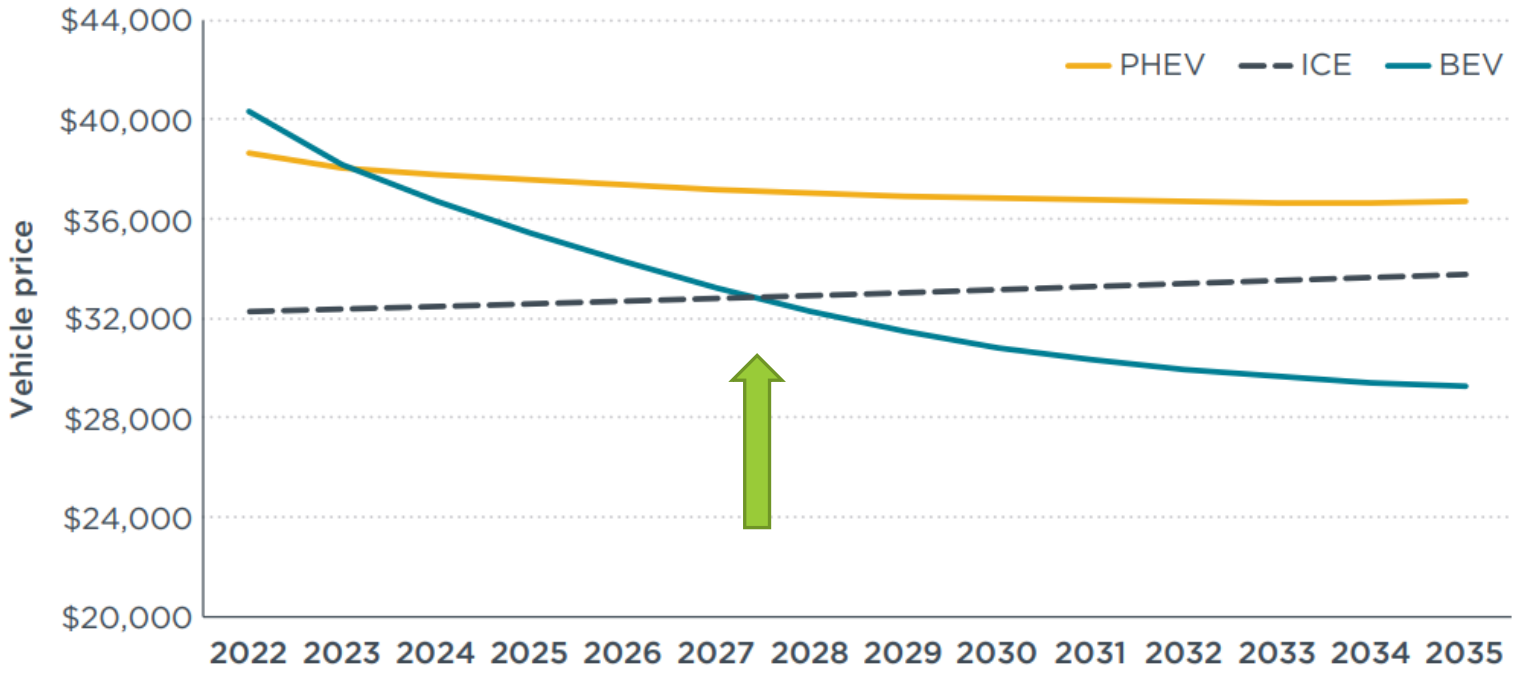


Figure 1. Sales-weighted average conventional and electric vehicle prices applied in this analysis

Vehicle Price Parity
2027-2028

Source: January 2023 ICCT Report

Projected Vehicle Price Parity with IRA

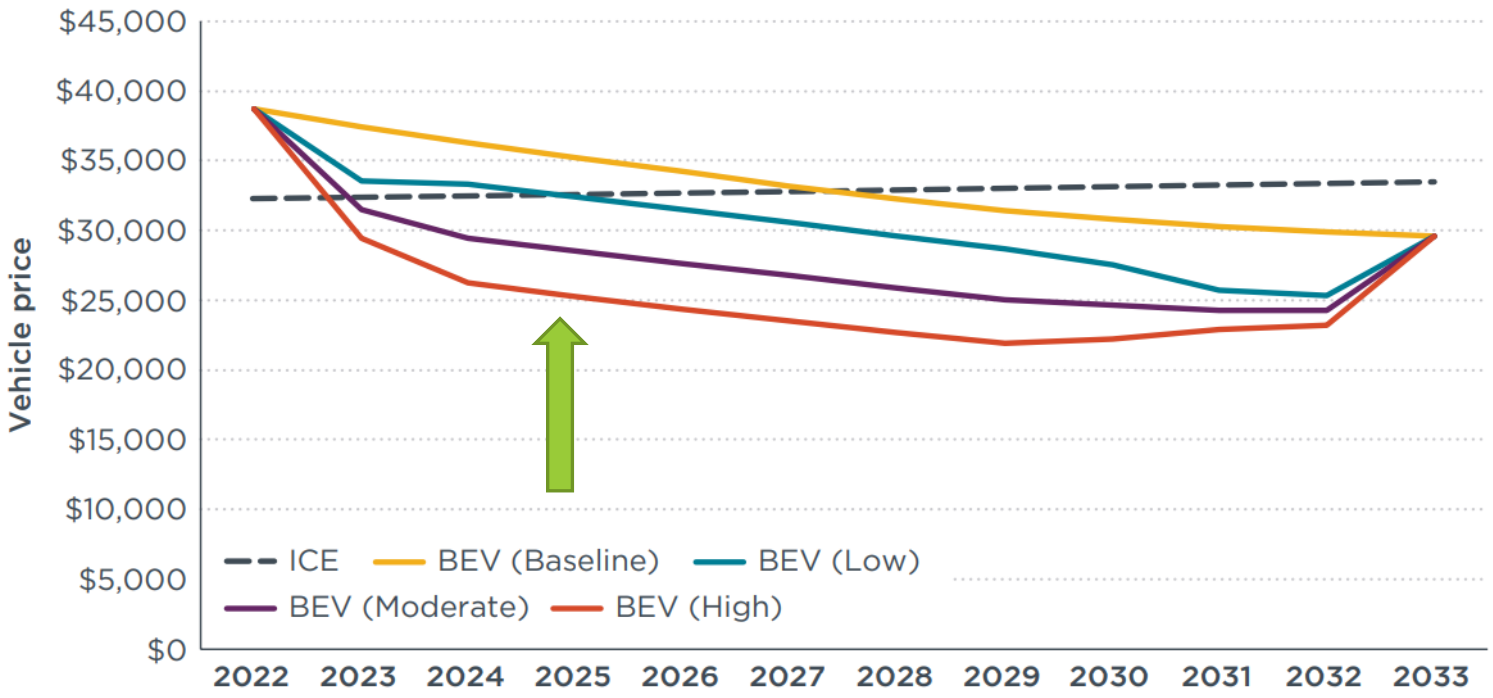


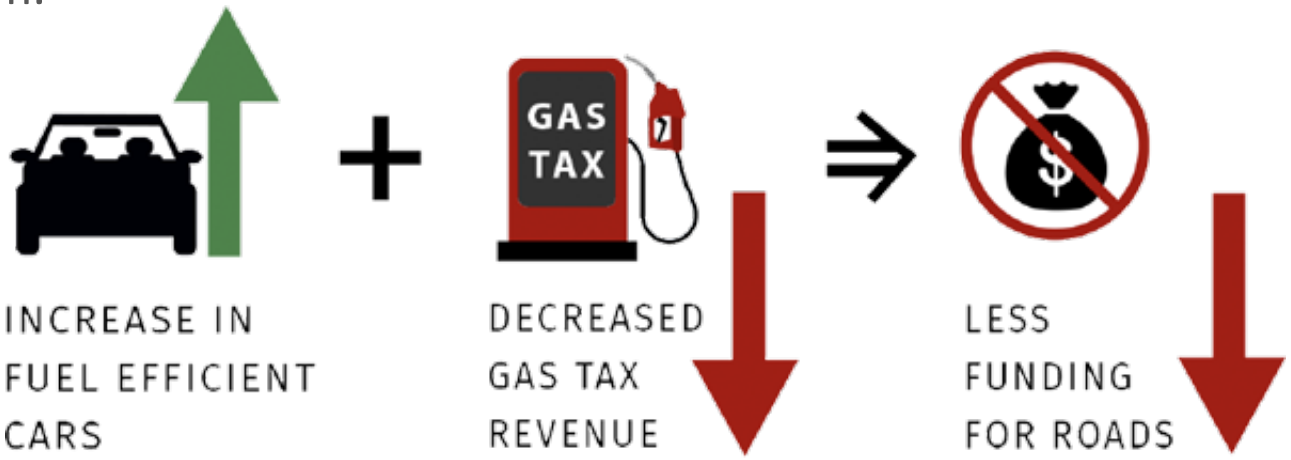
Figure 4. Sales-weighted average new ICE and BEV prices with IRA incentives and tax credits applied

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

Source: January 2023 ICCT Report

What is a road usage charge?

A ***road usage charge*** is a fee on vehicle use of the public road system.



Examples:

- A mileage-based user fee (MBUF)
- An annual flat fee
- A per kilowatt hour fee

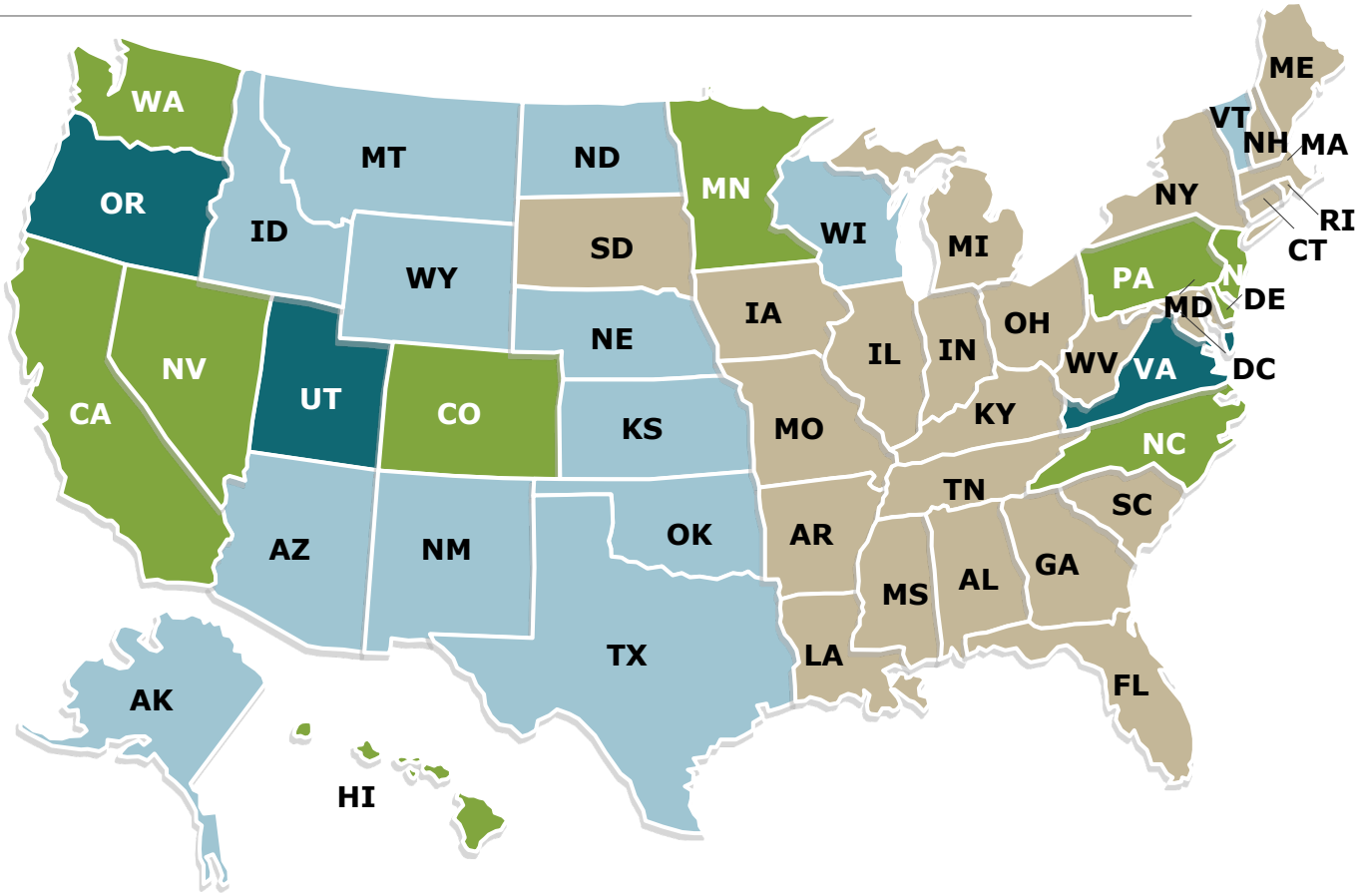
Basis of MBUF: A roadway consumption tax, with distance, stated in miles, as the measure of consumption.

An **annual flat fee** is collected at vehicle registration.

Where are mileage-based user fees happening in US?

Mileage-based user fee

- Manual reporting of odometer reading, and/or
- Automatic reporting of actual miles driven via technologies installed or embedded in vehicle.
- Payment made to government agency and/or private account manager.



3 Enacted programs 13 Pilots/demonstrations 13 Research

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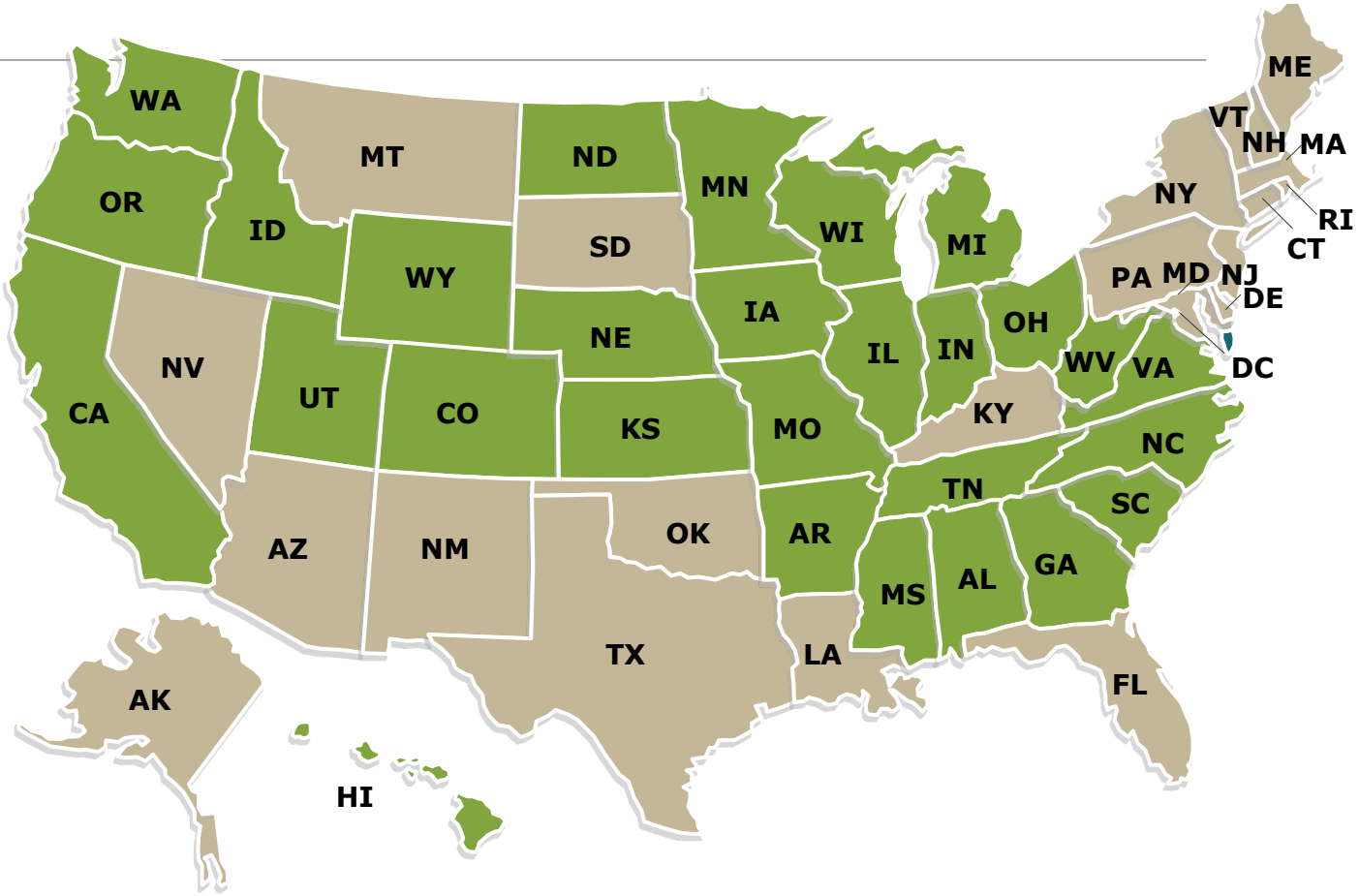
Where are annual flat fees happening in US?

Annual flat fee

Billed and collected by government agency as part of vehicle registration.



*Per National Conference of State Legislatures 12/1/2020

28 Enacted programs

Road Usage Charge Study

Road Usage Charge Advisory Committee and subcommittees convened stakeholders several times in Fall 2021 to consider impacts of a variety of policy scenarios and alignment with shared goals:

- Vermont needs to develop long-term, sustainable revenue to maintain our roads and bridges
- Future funding must be fair where all drivers contribute to the maintenance of the road network
- Any funding policy must be aligned with Vermont's Climate Action Plan

Road Usage Charge Study – Guiding Principles

Do No Harm

- Revenue neutrality
- Sustained EV uptake

Equitable & Fair

- User pay system
- Users have choices
- Privacy and security data protected
- Equitable cost distribution (rural/urban, income)

Feasible & Efficient

- Ease of administration/minimal government burden
- Enforceable
- Simplicity of compliance and ease of use
- Accurate and system performance

Transparent and Accountable

- Open system
- Accountable oversight

Adaptive for the future

- Integration with other state policies
- Interoperability with other state systems
- Flexible, secure, and scalable

Road Usage Charge Study – Recommendation

Road Usage Charge Study Advisory Committee recommended in its final report a mileage-based user fee for plug-in electric vehicles:

- Best opportunity to align sustainable transportation revenue and climate goals
- Cost-effectively utilizes existing inspection process with odometer reading
- Flexible payment options/frequencies
- Fairness: drivers only pay for what they use
- Avoids privacy concerns of reporting devices
- Federal money can be leveraged to assist with implementation

MBUF + Flat fee in Vermont

Mileage-based User Fee for All-Electric Vehicles (AEVs)

- Create new fee based on annual miles traveled for AEVs as collected at the annual vehicle inspection, with rate to approximate equivalent gas tax **($0.013/mile --$150/yr)**
- Vehicle owners pay on a selected frequency (monthly, annually) to a third-party account manager
- DMV to ensure compliance with MBUF program through existing policies and practices

Flat Fee for Plug-in Hybrids (PHEVs):

- Use existing "other specialized fuels" language for 1.75 x registration fee for PHEVs
- 1.75 X $76 annual registration fee (**$57 additional fee** vs. $72 estimated in report)

RUC Study Advisory Committee Survey

What is your initial reaction to introducing mileage-based user fees for fully electric, plug-in hybrid electric, or other highly fuel-efficient Vermont registered vehicles?	Percent	Count
Very Supportive	30%	116
Somewhat Supportive	30%	116
Somewhat Opposed	15%	58
Very Opposed	22%	85
No Opinion	2%	9
Total	100%	384

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RUC Study Advisory Committee Survey

Table 6. EV Purchase Likelihood with Road Usage Fees

If mileage-based fees or flat fees are implemented in the state of Vermont for electric vehicles and highly efficient fuel vehicles, how likely are you to purchase an electric vehicle in the next few years?	Percent	Count
More likely	6%	8
About the same	78%	109
Less likely	16%	22
Total	100%	139

Mileage-based User Fee vs. Cost of Ownership

Estimated annual savings

The annual cost comparison shown below is based on the above cost and efficiency information combined with estimated annual vehicle use of 12,000 miles per year.

Gasoline Vehicle: $1,795 a year

Electric Vehicle: $830 a year

$965

Switch to electric and save big on fuel. Estimated annual savings.

EV savings over 5 years

Savings add up! The following cost and savings estimates are based on the information provided above multiplied over 5 years. Think of all the things you could do with potential savings like this!

Gasoline Vehicle: $8,975 over 5 years

Electric Vehicle: $4,148 over 5 years

$4,827

Switch to an EV and your 5 year savings could look like this.

Estimated Annual MBUF payment

$156

($97)

federal taxes avoided

Fees designed to achieve parity with *state* gas tax for fossil-fueled vehicles –i.e. no net-costs or savings

$780

($485)

federal taxes avoided

Equity Impacts of Road Usage Charges

University of Vermont Transportation Research Center study investigated the geographic and demographic impacts of move to a mileage-based user fee (MBUF):

- Most Vermont households would see minimal difference from gas tax burden to mileage-based user fee
- Rural and lower-income households would be least impacted, while urban and higher-income households would see greater increases
- MBUF would be more progressive than gas tax, and much more so than a high flat fee, supporting the findings of prior studies but with a much more robust data set

[A Data Driven Analysis of Rural Equity and Cost Concerns for Mileage-Based User Fees in Vermont (uvm.edu)](#) (2022)

University of Vermont
UVM ScholarWorks

University of Vermont Transportation Research Center | Research Centers and Institutes

2022

A Data Driven Analysis of Rural Equity and Cost Concerns for Mileage-Based User Fees in Vermont

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Gregory Rowangould
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The Road Ahead

The MBUF Assessment is evaluating how Vermont can build a cost-effective system. AOT is considering:

- Implementation and long-term operational/staffing costs
- System design and processes
- Rate-setting, rulemaking elements
- Transition timeline
- Federal grant application to US DOT

Strategic Innovation for Revenue Collection (SRIC)

Authorized by IIJA:

To test the design, acceptance, equity, and implementation of user-based alternative revenue mechanisms, including among—

(i) differing income groups; and

(ii) (ii) rural and urban drivers, as applicable.

FEDERAL SHARE.—The Federal share of the cost of a pilot project carried out under this section may not exceed **80 percent** of the total cost of a project carried out by an eligible entity that has not otherwise received a grant

Current Project Implementation Cost Estimate: $3.5 million

Project & Federal Grant Timeline

*USDOT announcement of Federal SIRC grantees varies from cycle to cycle. January 2024 may be an optimistic date

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