Mileage-based User Fee for EVs

SENATE TRANSPORTATION COMMITTEE, FEBRUARY 23, 2023

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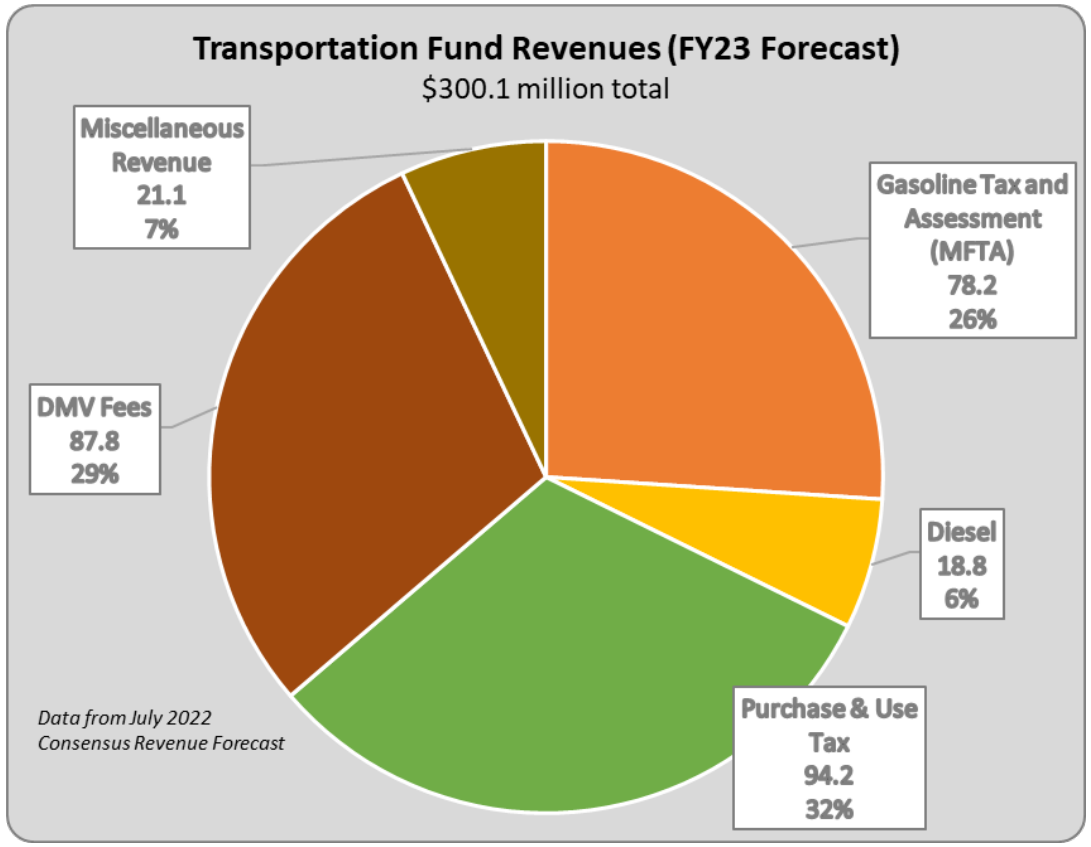
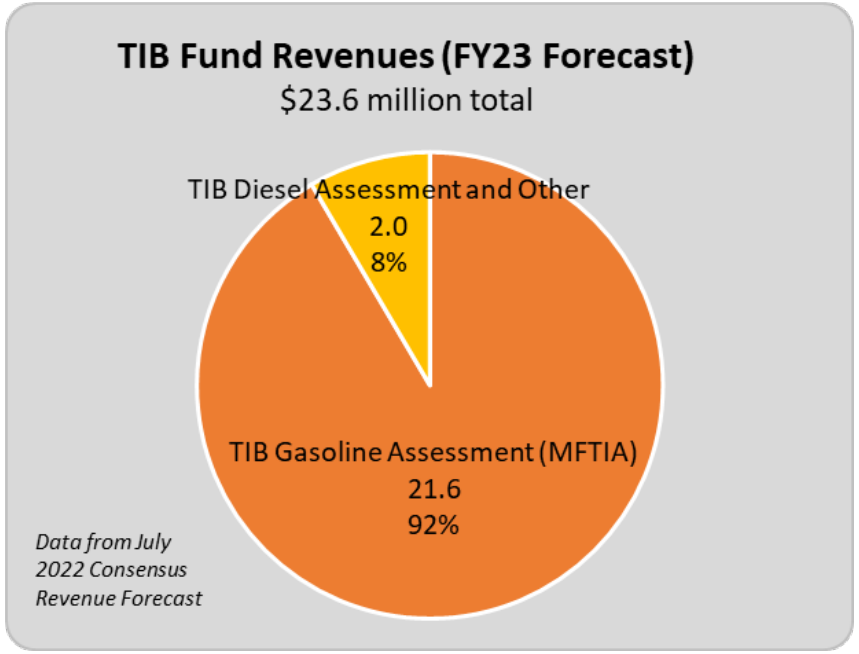
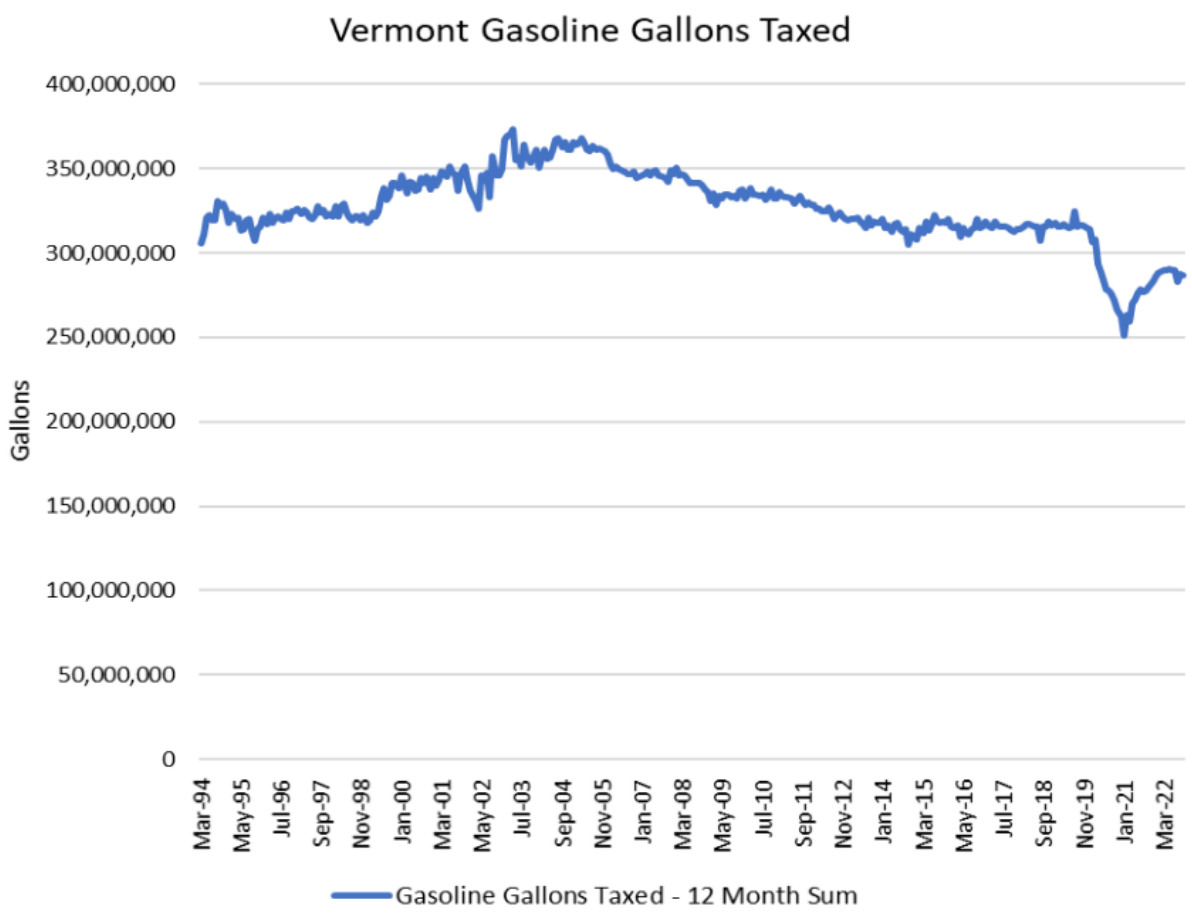
Transportation Funding in Vermont

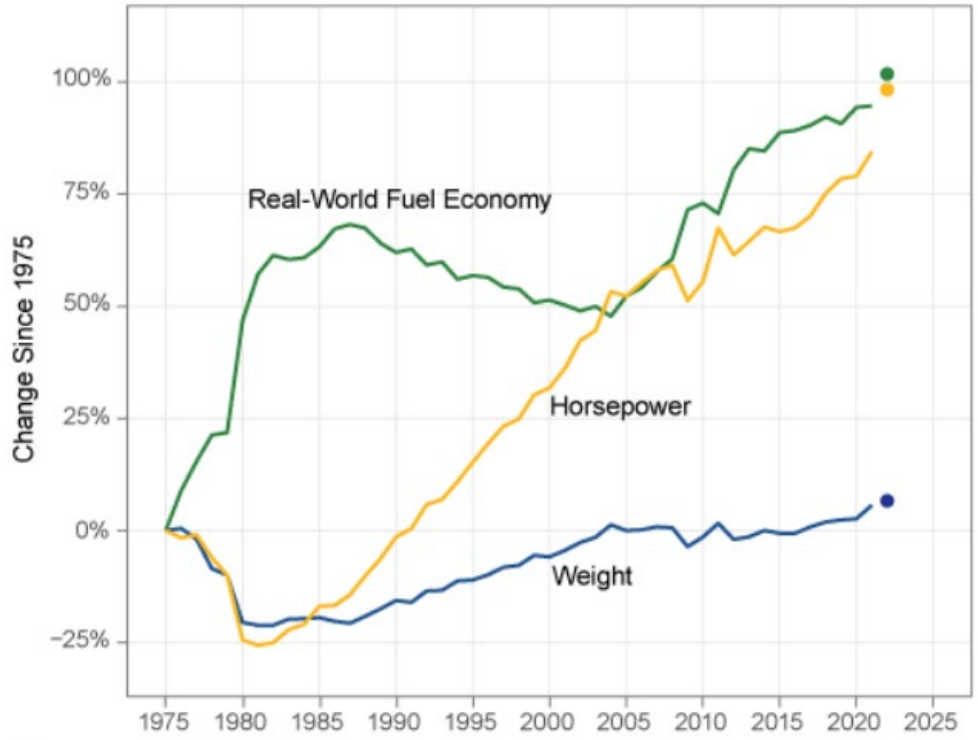




Transportation Funding in Vermont

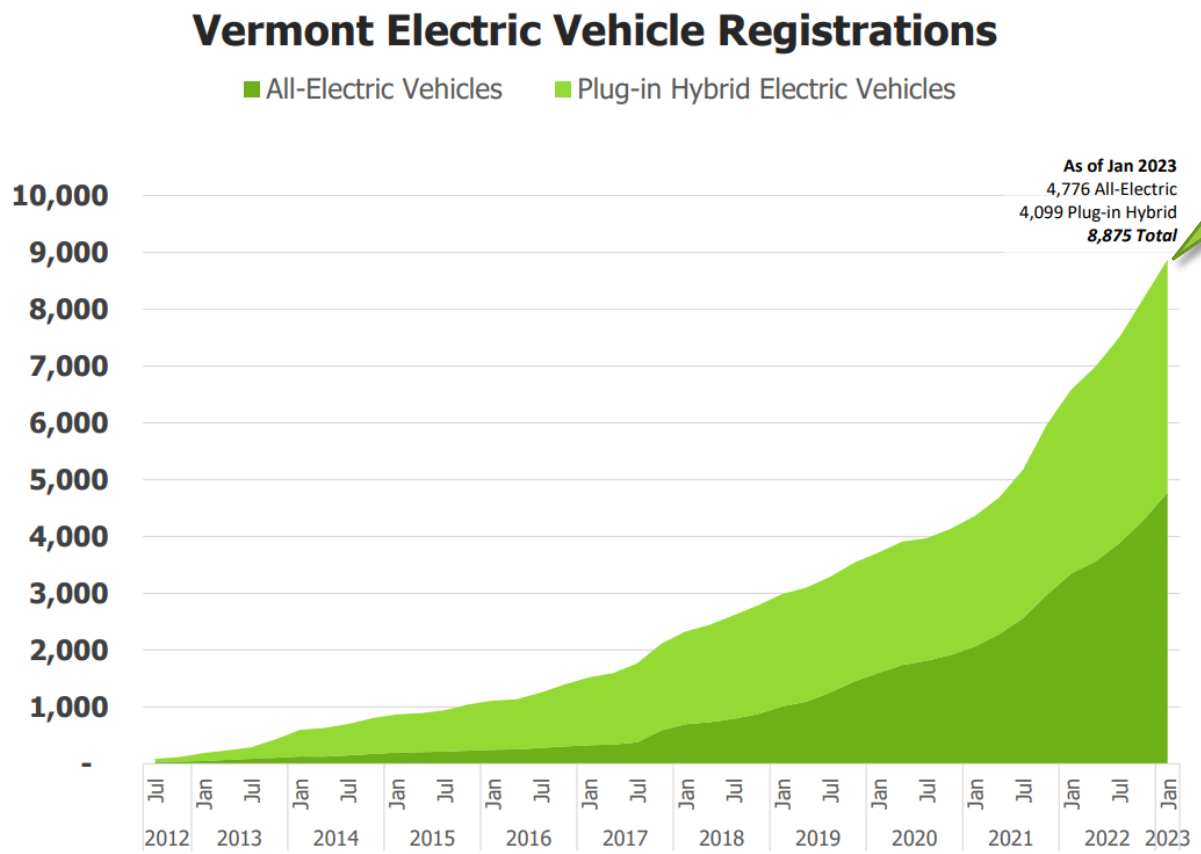


Majority of decreased consumption due to increasing fuel efficiency of overall fleet

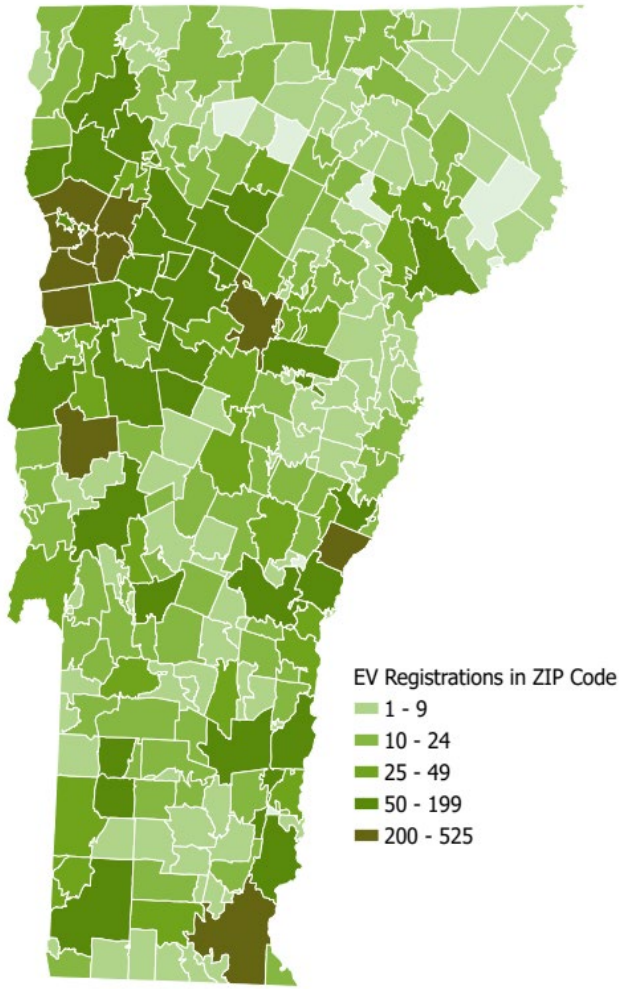


Source: epa.gov

EV Adoption in Vermont

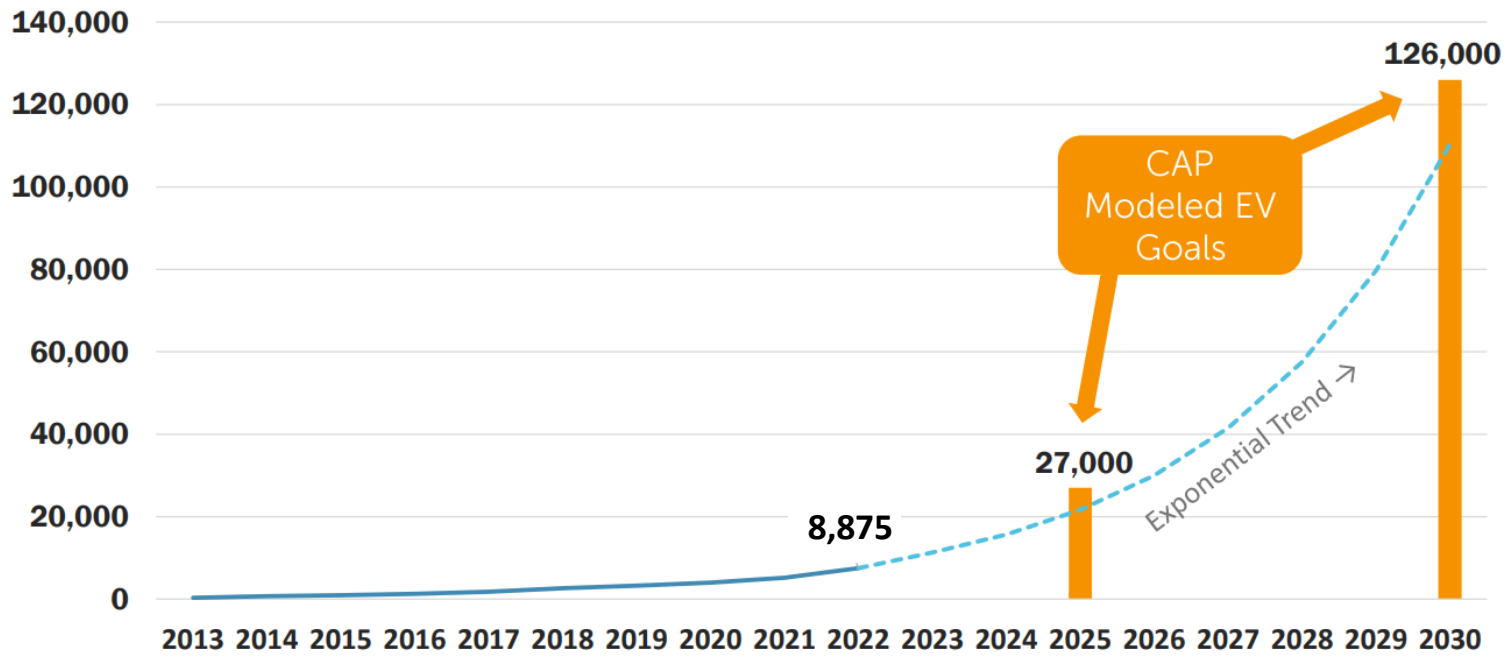


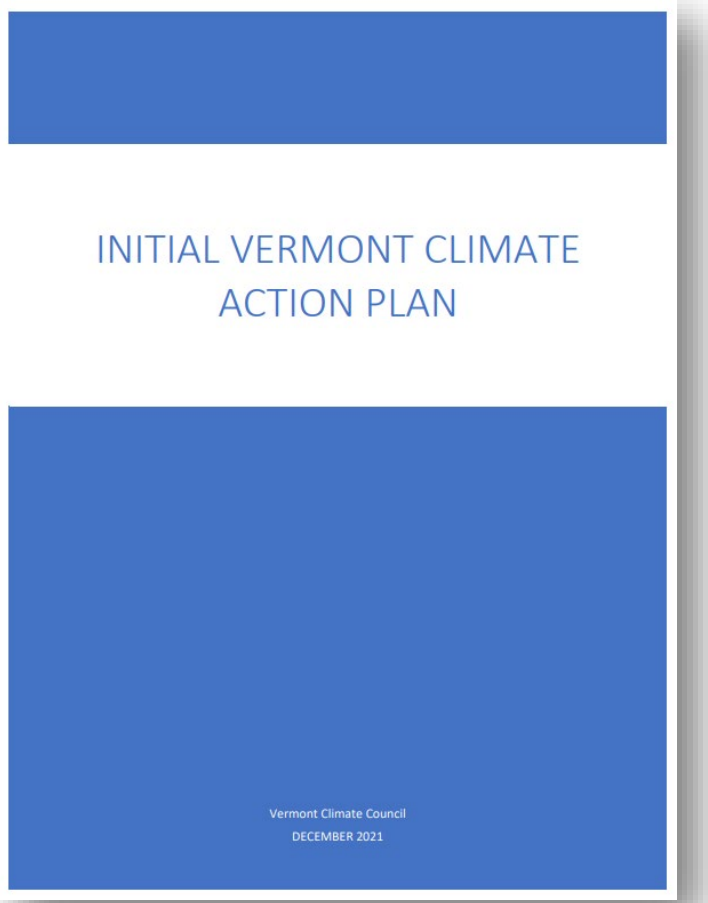
8,875 ZEVs:
4,099 PHEVs
4,776 AEVs



EV Adoption in Vermont

How many vehicles does Vermont need to electrify?





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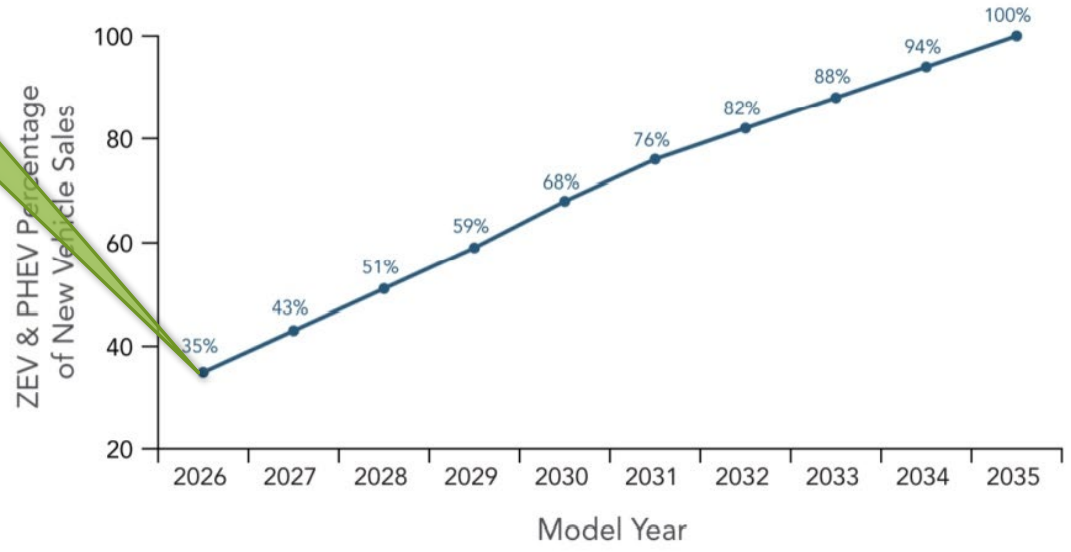
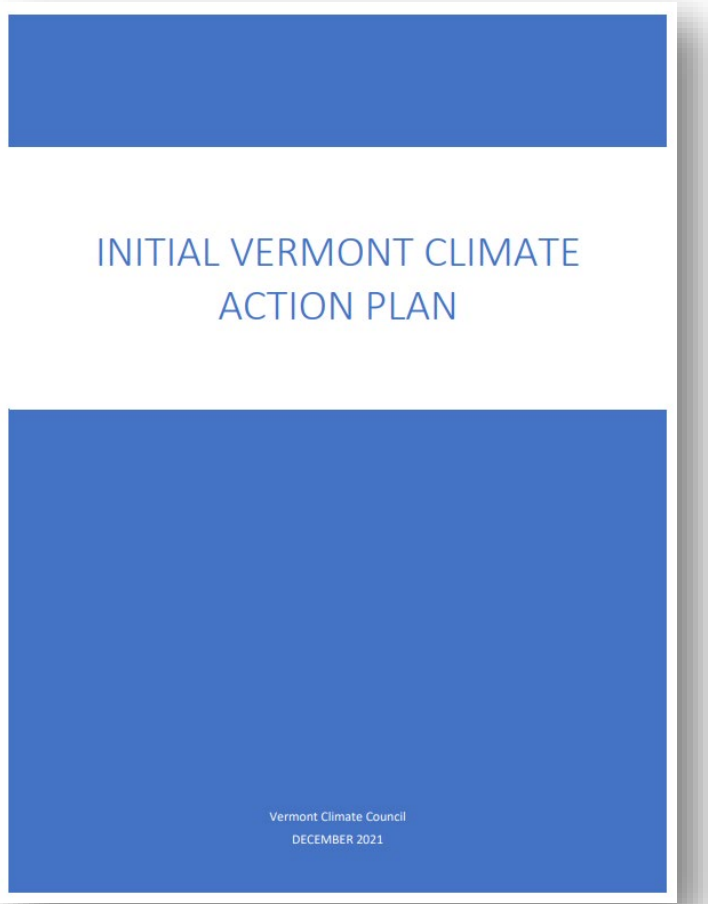
EV Adoption in Vermont

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.



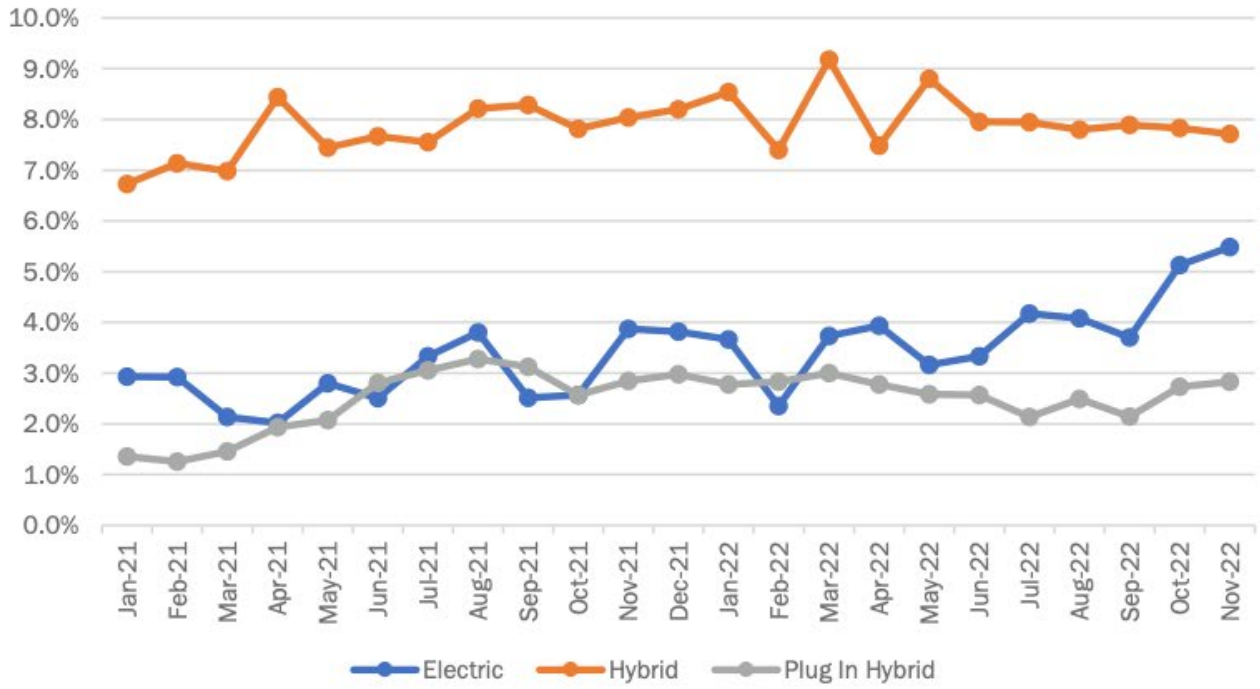


Private sector also leading: trends in auto industry point to rapid increase in EV adoption

EV Adoption in Vermont

HYBRID AND ELECTRIC VEHICLES

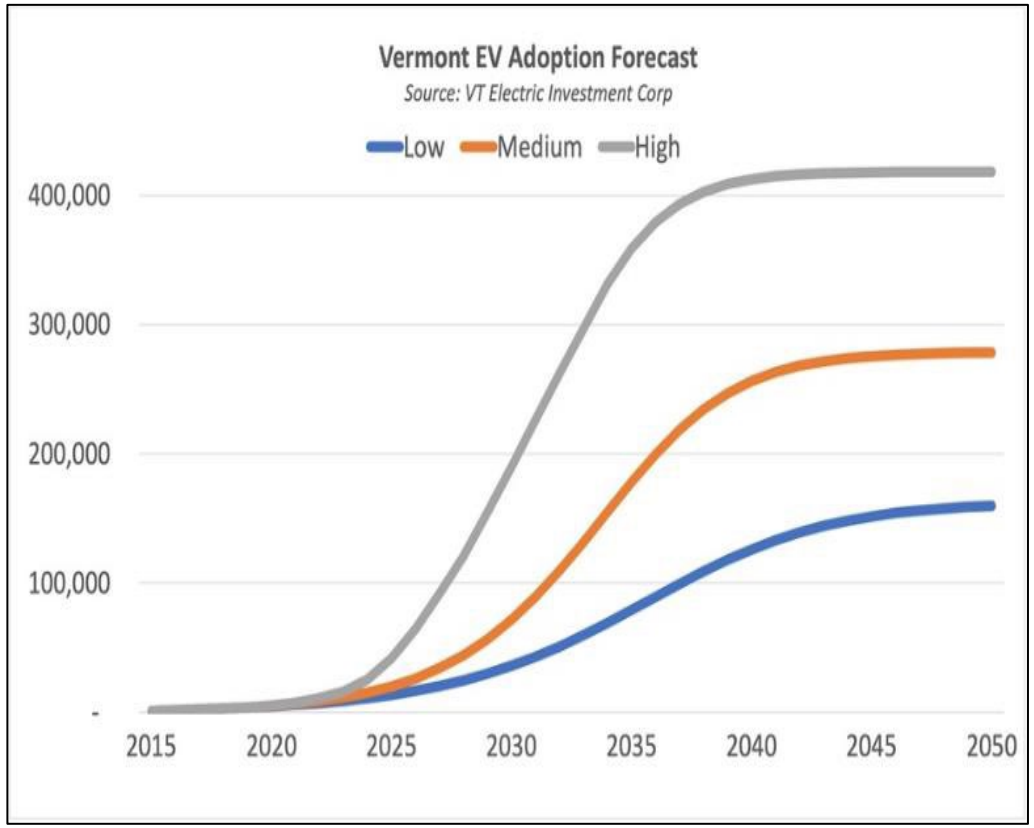
Estimated Alternative Powertrain Market Share
(includes hybrid and electric vehicles)

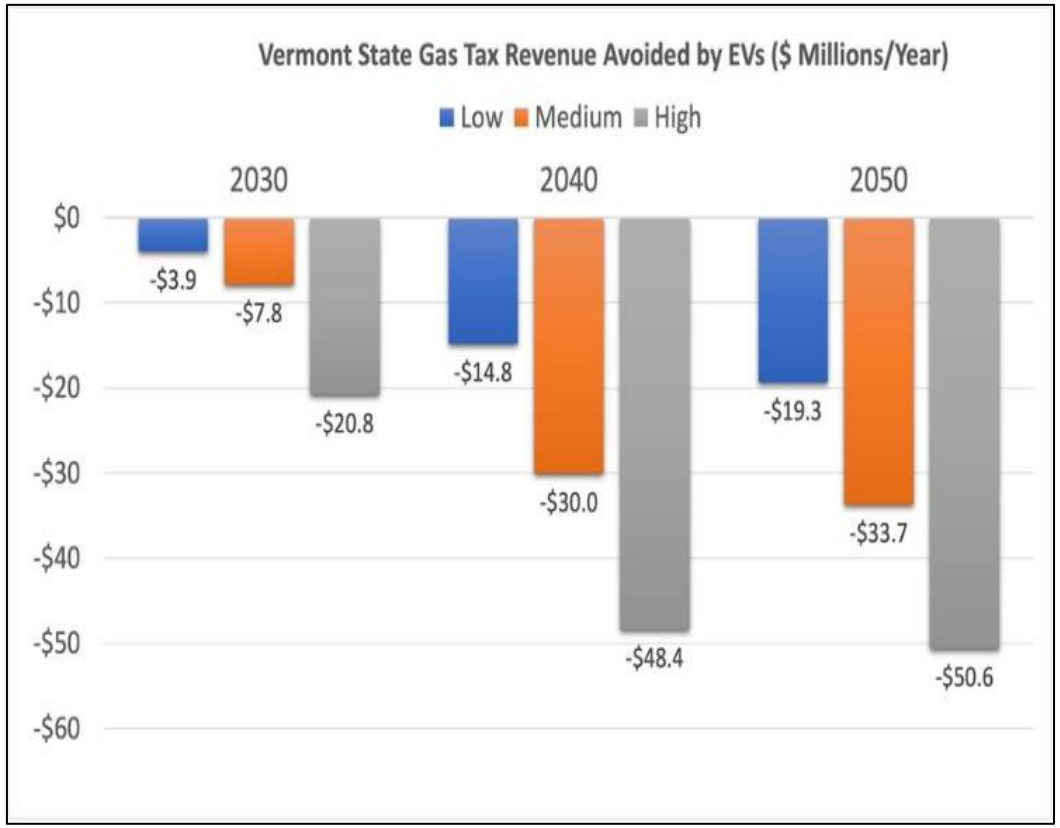


Market Share by Engine Type
(YTD '22 thru November)

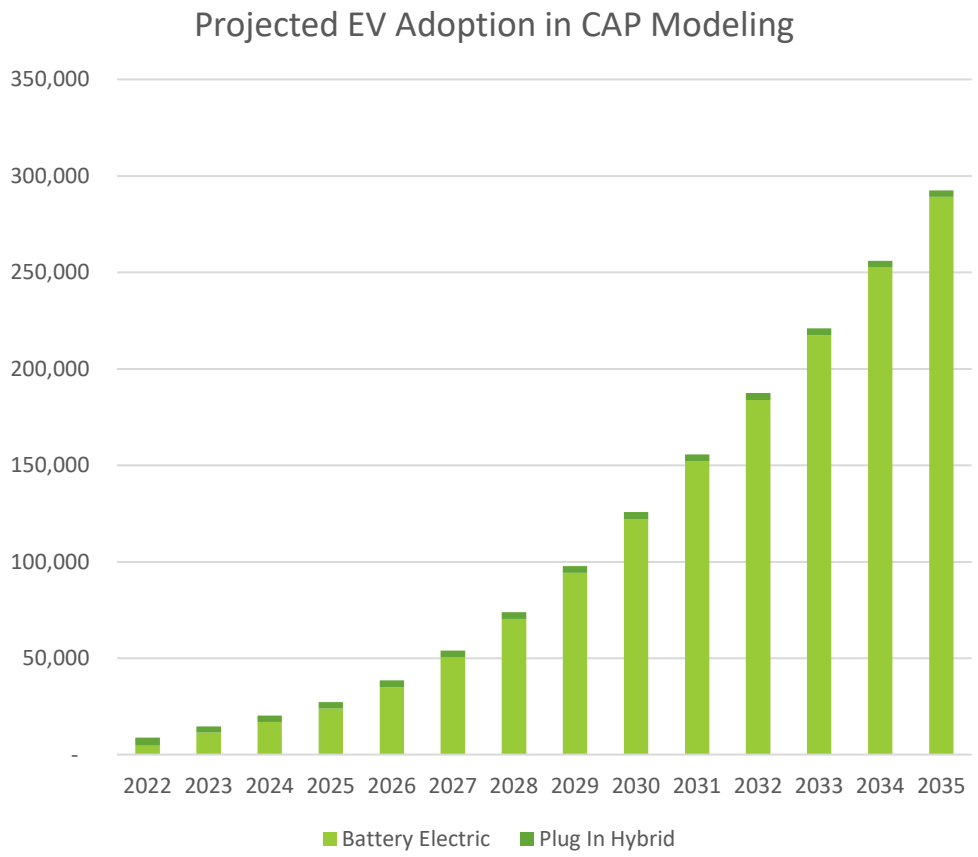
	YTD '21	YTD '22	
Hybrid	7.7%	8.1%	↑
Electric (BEV)	2.8%	3.9%	↑
Plug In Hybrid (PHEV)	2.4%	2.6%	↑

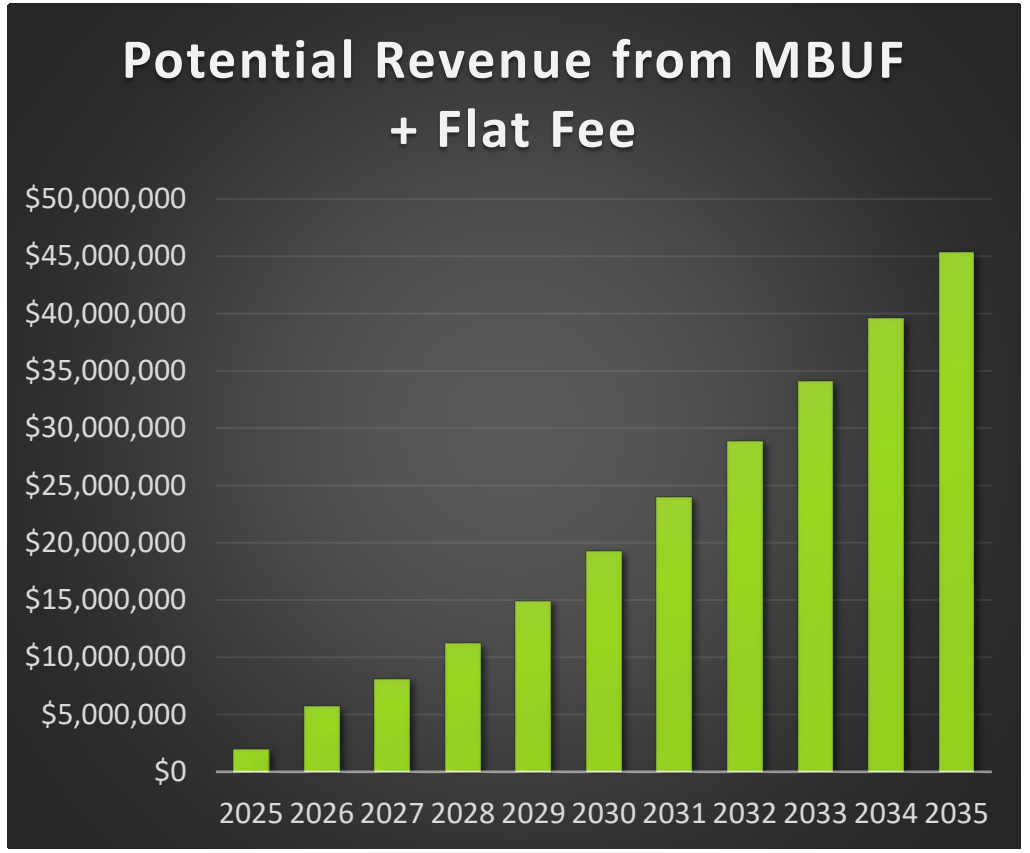
Potential Revenue Losses due to Electrification





Climate Action Plan Modeling and MBUF Projections





Projected Vehicle Price Parity

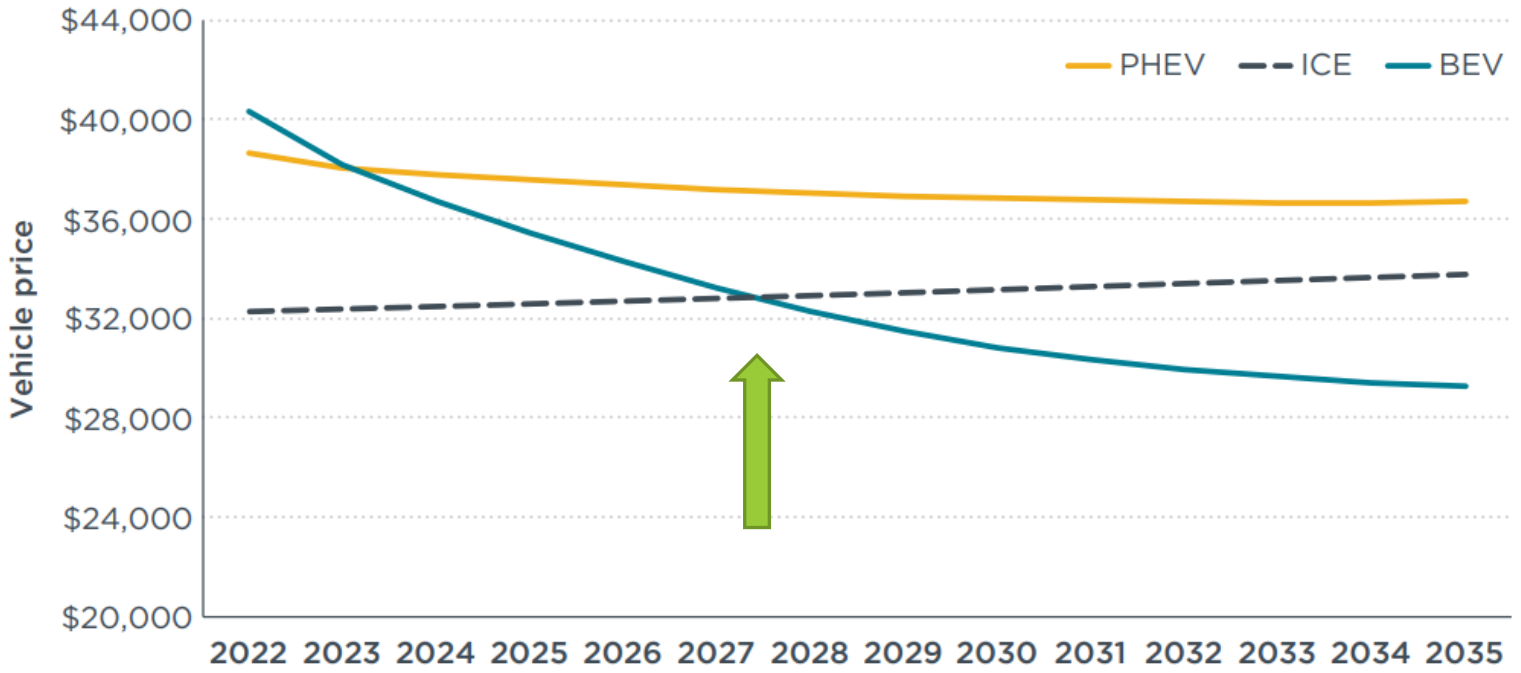


Figure 1. Sales-weighted average conventional and electric vehicle prices applied in this analysis

Vehicle Price Parity
2027-2028

Source: January 2023 ICCT Report

Projected Vehicle Price Parity with IRA

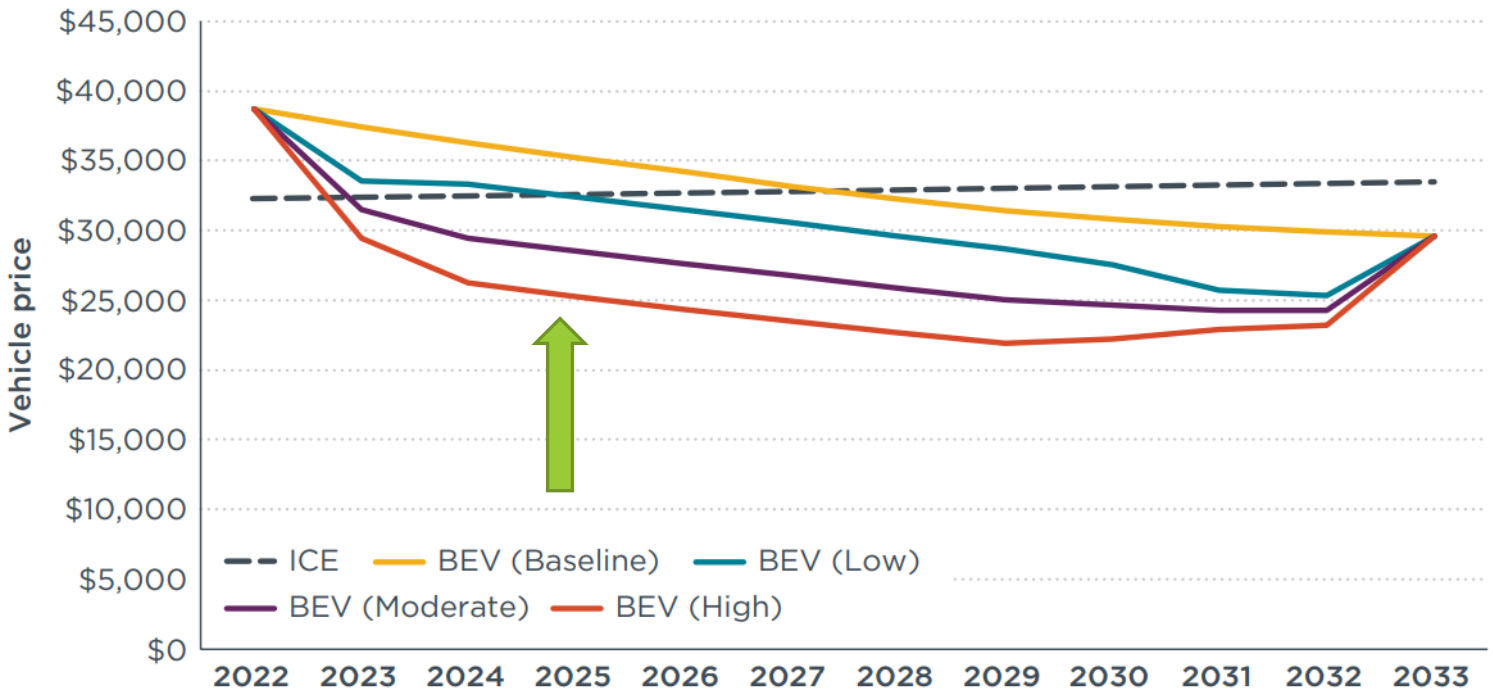


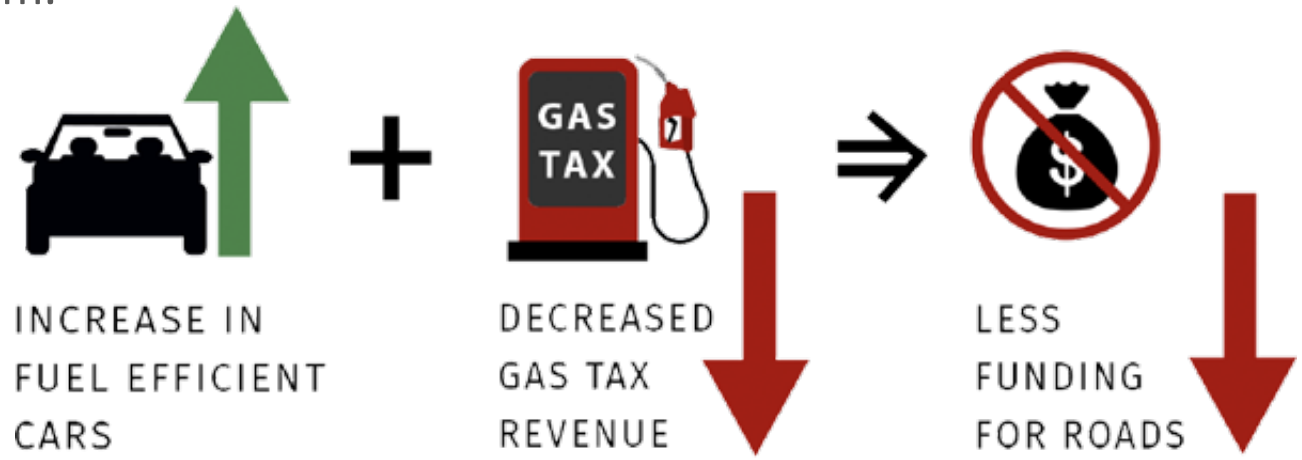
Figure 4. Sales-weighted average new ICE and BEV prices with IRA incentives and tax credits applied

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

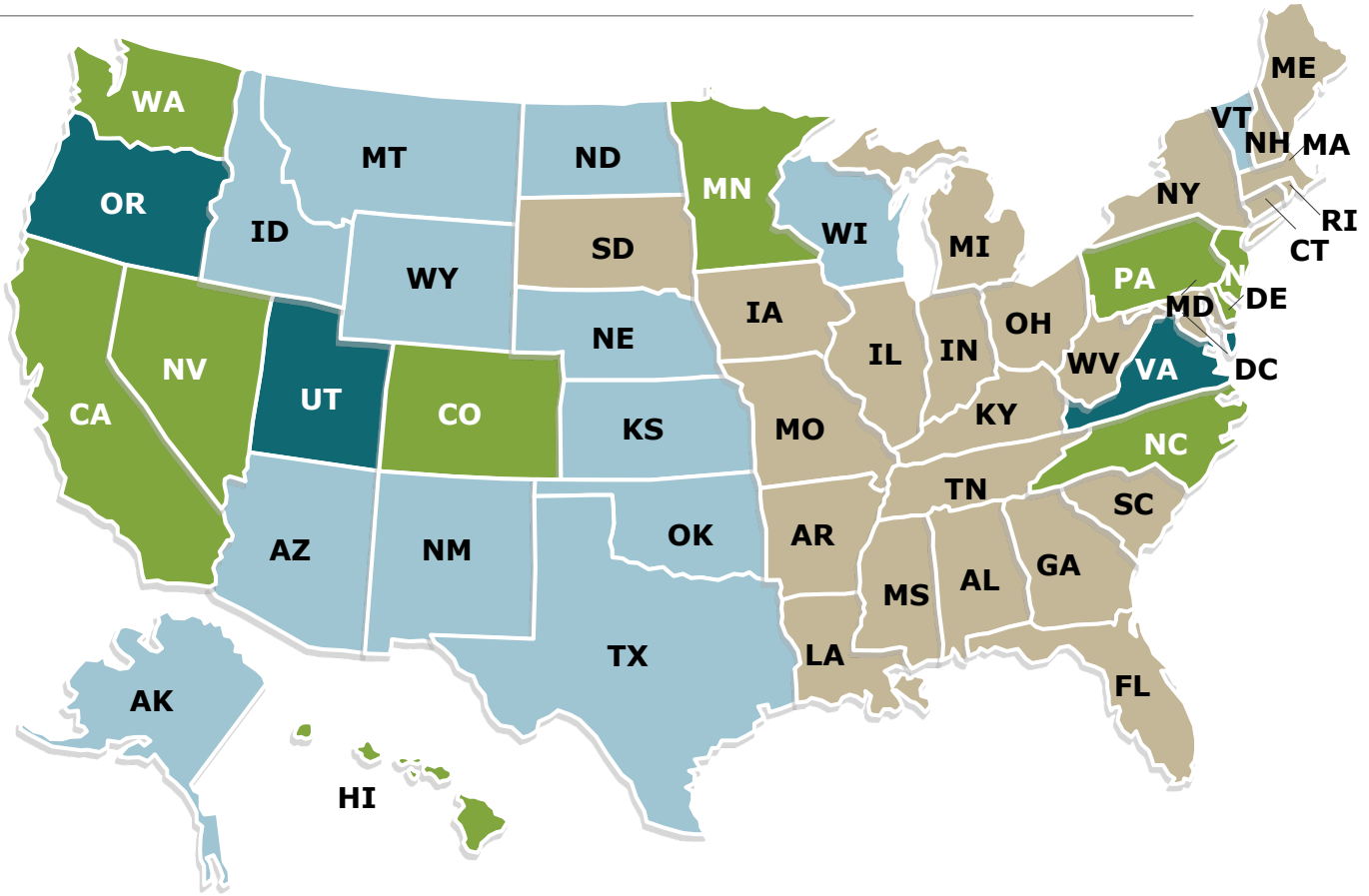
Basis of MBUF: A roadway consumption tax, with distance, stated in miles, as the measure of consumption.

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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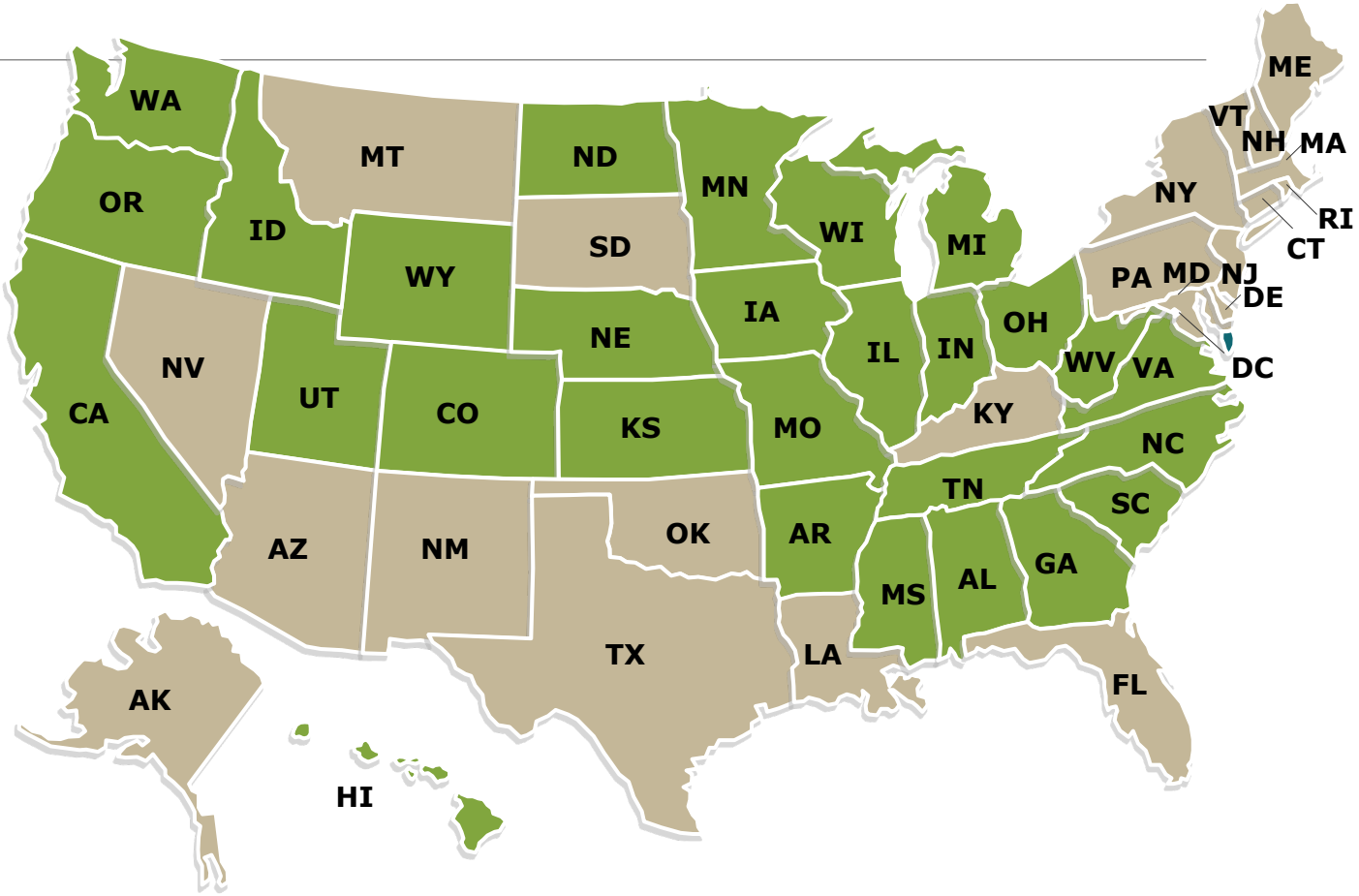
Where are annual flat fees happening in US?

Annual flat fee

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



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

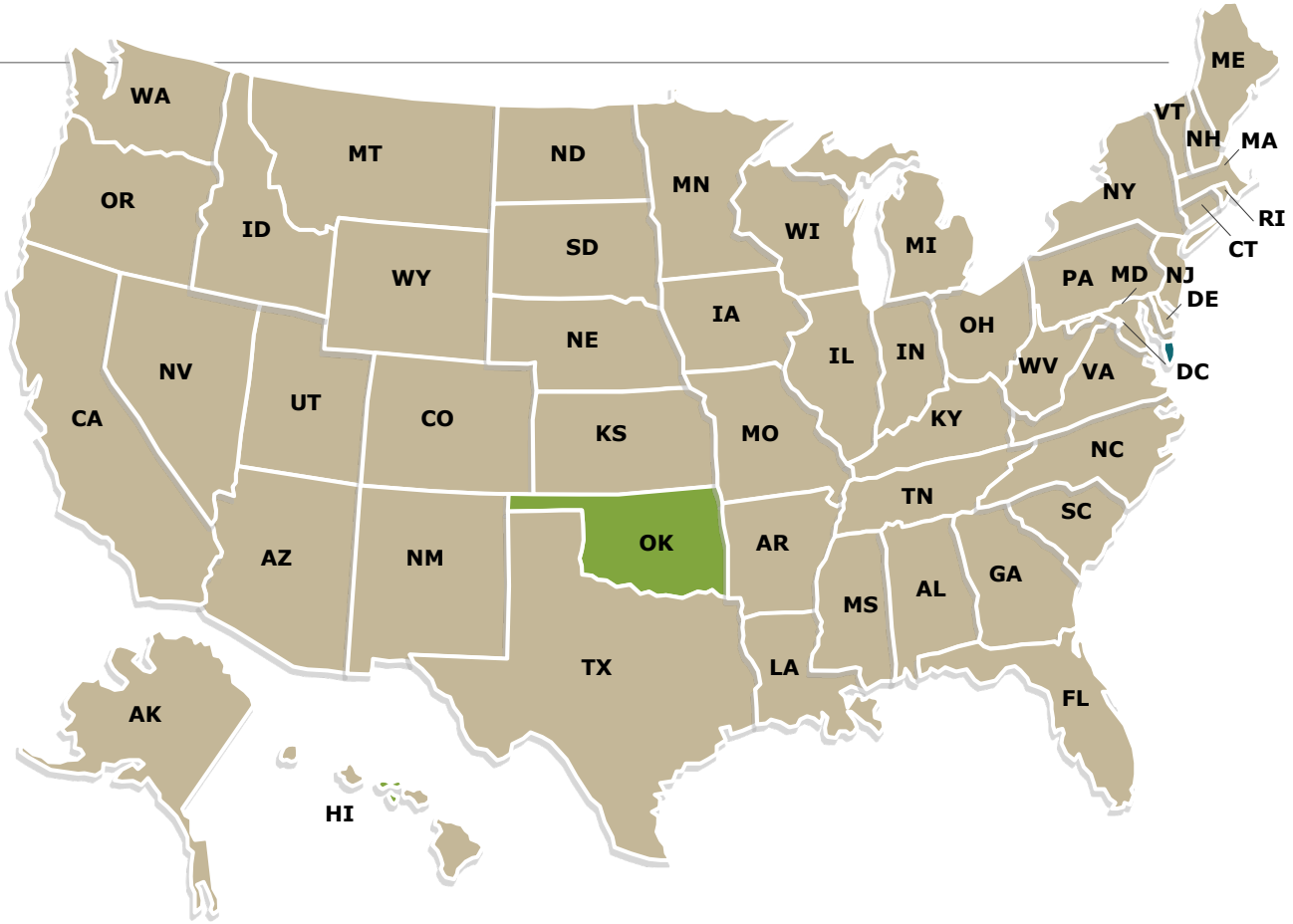
28 Enacted programs

Where are per kWh fees happening in US?

Per kilowatt hour fee

- Assessed on electricity transferred at public charging stations.
- Collected and remitted by station owner/operator.

★ Program enacted in 2021, but not yet implemented



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

MBUF collection systems in the United States

Three MBUF collection systems have undergone extensive system development.

As of 2021, only the odometer reading system and the account-based open system have proven viability.

State odometer reading system

State annually collects odometer readings and issues invoice for MBUF

Where tested

Washington, Hawaii

Pay-at-the-pump system

MBUF collected along with fuel purchase at fuel pump

Where tested

Oregon, California

Account-based open system

State sets standards for private entities to collect MBUF periodically based on real-time mileage reporting

Where applied

Oregon, Utah

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

MBUF in Vermont

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

Proposed Language

1) The Agency shall design and implement a process to collect a mileage-based user fee based on the annual vehicle miles traveled by BEVs registered in the State.

2) It is the intent of the General Assembly that starting on July 1, 2025 PHEVs that are a pleasure car, as defined in 23 V.S.A. § 4(28), shall be subject to an annual or a biennial registration fee that is one and three-quarters times the amount of the annual or biennial fee for a pleasure car pursuant to 23 V.S.A. § 361 and the State's gas tax but shall not be subject to a mileage-based user fee.

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

Mileage-Based User Fee for Battery-Electric Vehicles

The MBUF rate is intended to be revenue-neutral relative to the gas tax, and is calculated as the state gas tax rate divided by the combined average miles per gallon (MPG) per light-duty vehicle in Vermont:

$0.30 per gallon / 22.7 miles per gallon = $0.013 per mile

This is an approximation and not necessarily the proposed rate.

$0.184 / 22.7 = $0.008 per mile avoided in federal taxes

Flat Fee for Plug-In Hybrid Electric Vehicles

$76 registration fee x .75 = $57 annually

25% Electric miles: Total road usage charge = $117 gas tax + $57 flat fee = **$174** ($24 federal tax avoided)

50% Electric miles: Total road usage charge = $78 gas tax + $57 flat fee = **$135** ($48 federal tax avoided)

75% Electric miles: Total road usage charge = $39 gas tax + $57 flat fee = **$96** ($72 federal tax avoided)

Based on 12,000 mile average

Per kWh Fee for Out-of-state Plug-In Electric Vehicles

Estimated 2021 Revenue from Out-of-state PEVs

Usage per Year per Station (kWh)	**1,650**
Number of Public Charging Stations 2021	311
Total Usage (kWh)	513,150
Percent Out of Stater Drivers	25%
Total Usage by Out of Stater Drivers	128,288
Per-kWh Fee Rate	$0.034
Total Estimated Revenue Generated in 2021	$4,362

Assumptions:

- **1650 kWh transferred to vehicles annually on average per public charging station in Vermont**. This is the combined average of annual usage per public charging station for Green Mountain Power (GMP) and Burlington Electric Department (BED). The combined average is based on the average of BED's 17 stations of 4,610 kWh per year and the average of GMP's 81 charging stations of 972 kWh per year. BED's charging stations are located primarily in the Burlington area; whereas GMP charging stations are located throughout the state in smaller cities. [(17 × 4610) + (81 × 972) = 1603].
- **311 public charging stations where a per-kWh fee can be collected.** This was the current number of public charging stations shown on the Drive Electric website. This analysis assumes it is technically possible to collect a fee at all these stations, a status which was unknown at that point, but improbable.
- **25 percent of nonresident drivers currently using public charging stations in Vermont**. This analysis uses 25 percent because it is consistent with reported gasoline sales by non-Vermonters based on credit card receipts. This assumption is greater than the percentage of nonresident drivers using public charging stations owned by GMP (13 percent) and BED (16 percent), but the consumption of electricity by nonresident drivers in Vermont may come up to par with current gasoline purchases.
- **3.4 cents per kWh is the assumed per-kWh fee rate**. This is the fee rate identified in Act 12: Section 28 Report (2013). A Study on Replacing Motor Fuel Tax Revenues Not Collected from Plug-In Electric Vehicles.

These assumptions were made by the Vermont Agency of Transportation in November 2021.

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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