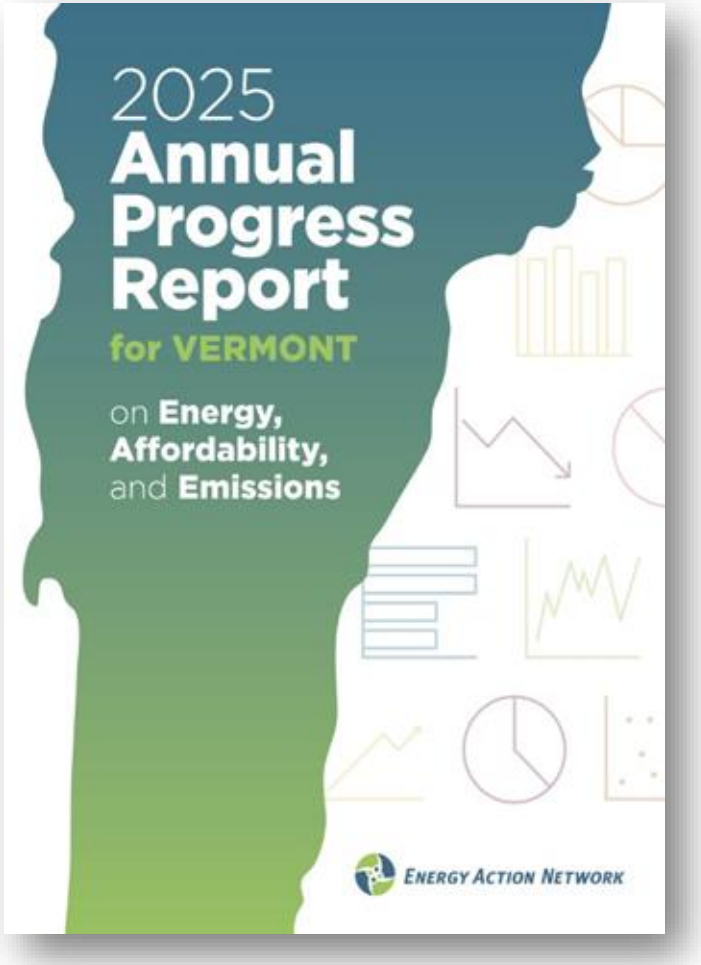
EAN's 2025

Annual Progress Report for Vermont

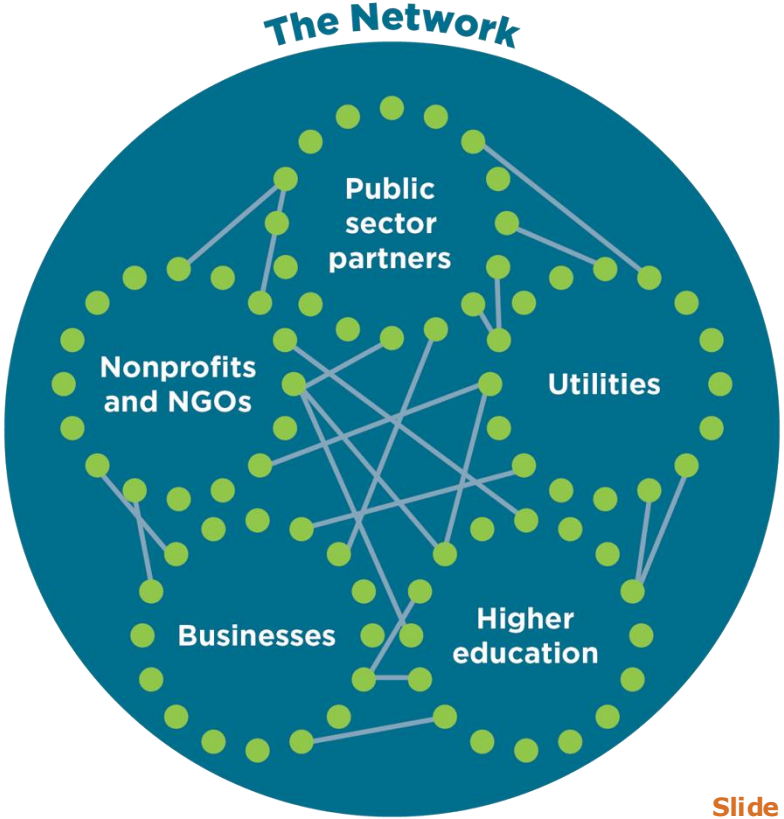
on Energy, Affordability, and Emissions



EAN is two things

EAN Network

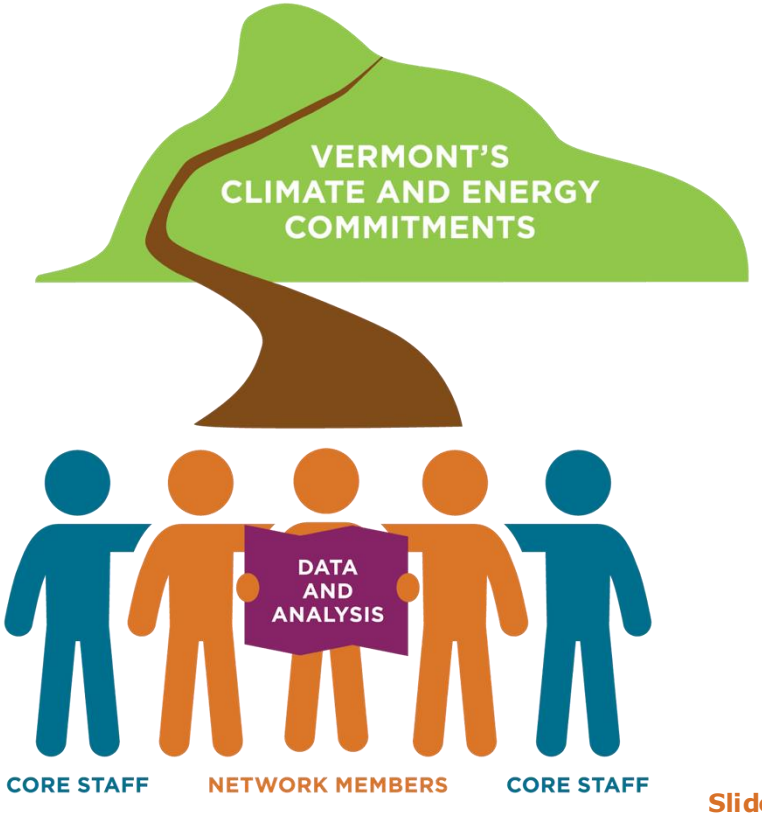
The Network's mission is to achieve Vermont's climate and energy commitments in ways that create a more just, thriving, and sustainable future.



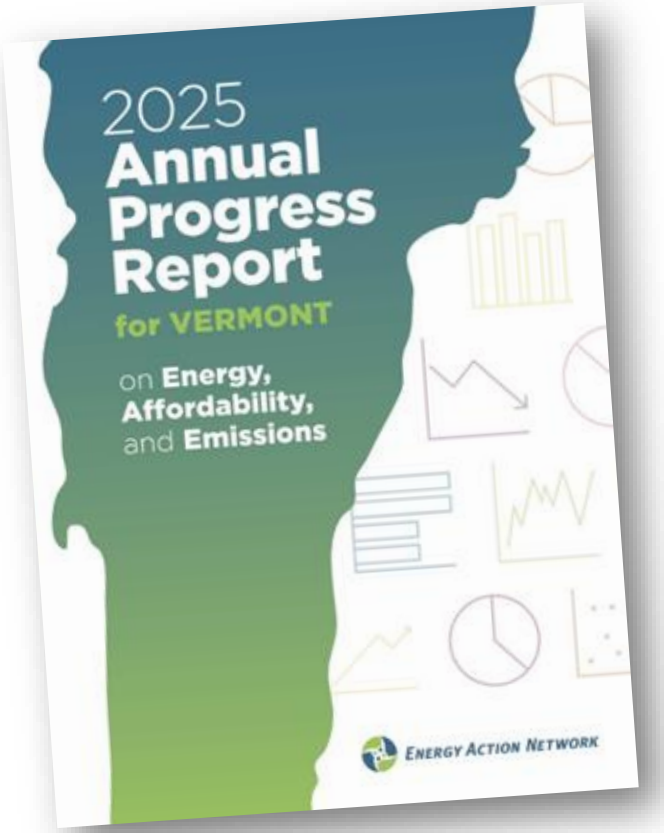
EAN is two things

EAN Organization

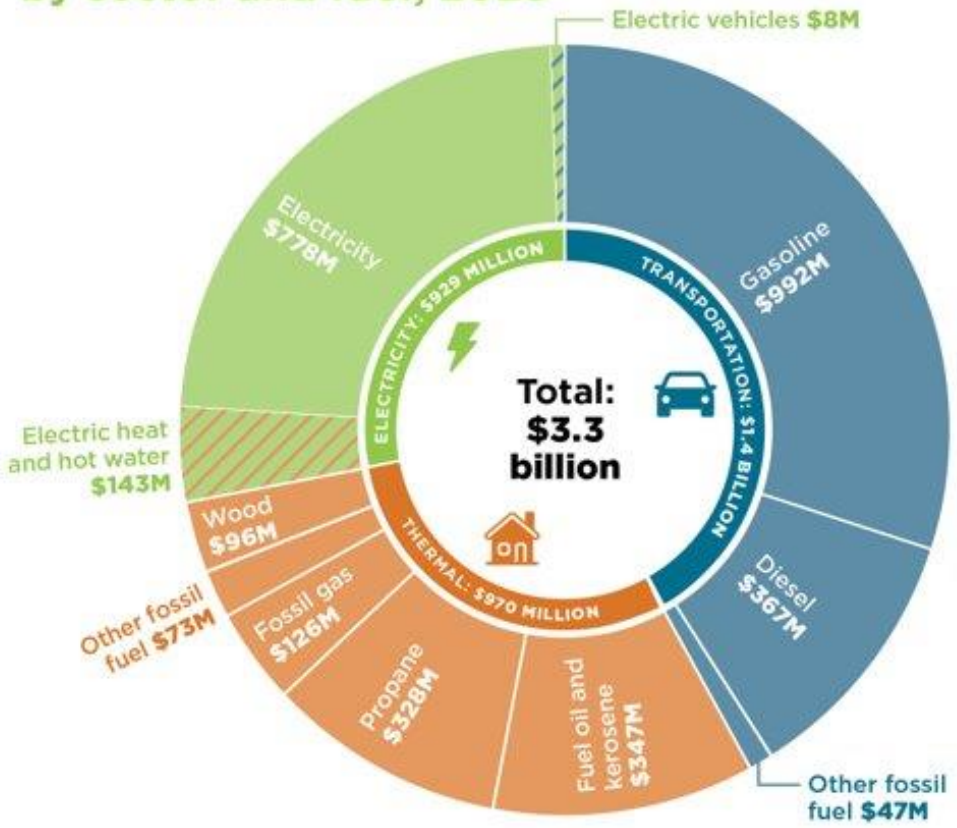
The organization's mission is to ensure that Vermont's energy and climate decisions are evidence-based, grounded in high-quality data and analysis, and collaboratively developed for effective and durable progress.



2025 Annual Progress Report for Vermont



Total Vermont energy expenditures by sector and fuel, 2023



Sources: Gasoline and diesel sales volumes from Vermont Joint Fiscal Office, 2025; fuel oil, kerosene, and propane sales volumes from Vermont Department of Taxes, 2025; fossil gas sales volumes and prices from VGS, 2025; other fuel prices from Vermont Department of Public Service and EIA; electricity expenditures from Vermont Department of Public Service; wood and other fossil fuel expenditures from EIA.

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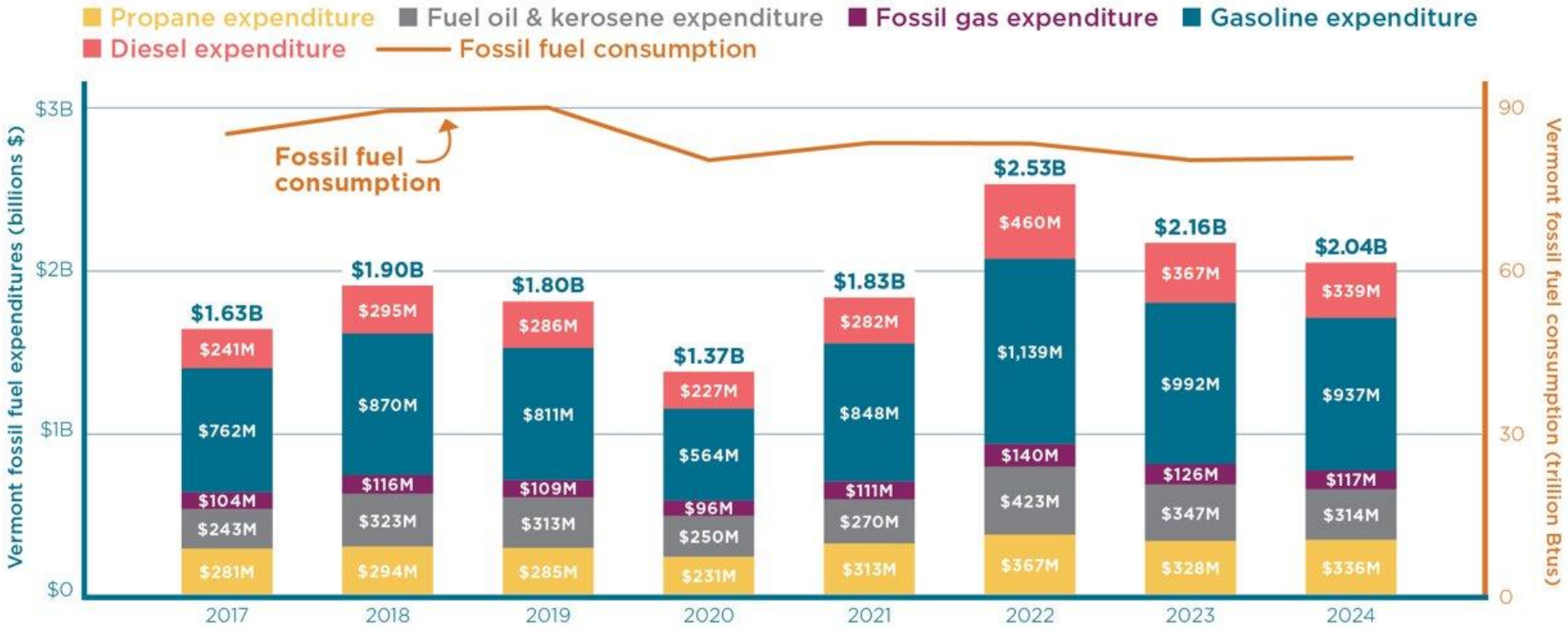
Fossil fuel price volatility has led to large cost swings for Vermont, despite relatively flat consumption



Sources: Gasoline and diesel sales volumes from Vermont Department of Taxes via the Joint Fiscal Office; fuel oil, kerosene, and propane sales volumes from Vermont Department of Taxes; fossil gas sales volumes and prices from VGS; other fuel prices from Vermont Department of Public Service and EIA. **Notes:** This estimate only includes sales of gasoline, diesel, propane, fuel oil and kerosene, and fossil gas in Vermont. It does not include sales of aviation gasoline or jet fuel from the transportation sector or of fossil fuel-based electricity generation (less than 10% of Vermont's electricity portfolio). Fossil gas is also sometimes referred to as "natural gas," "utility gas," "fossil natural gas," "pipeline gas," "fracked gas," "methane," or "gas." Prices shown are nominal and [illegible] for inflation.

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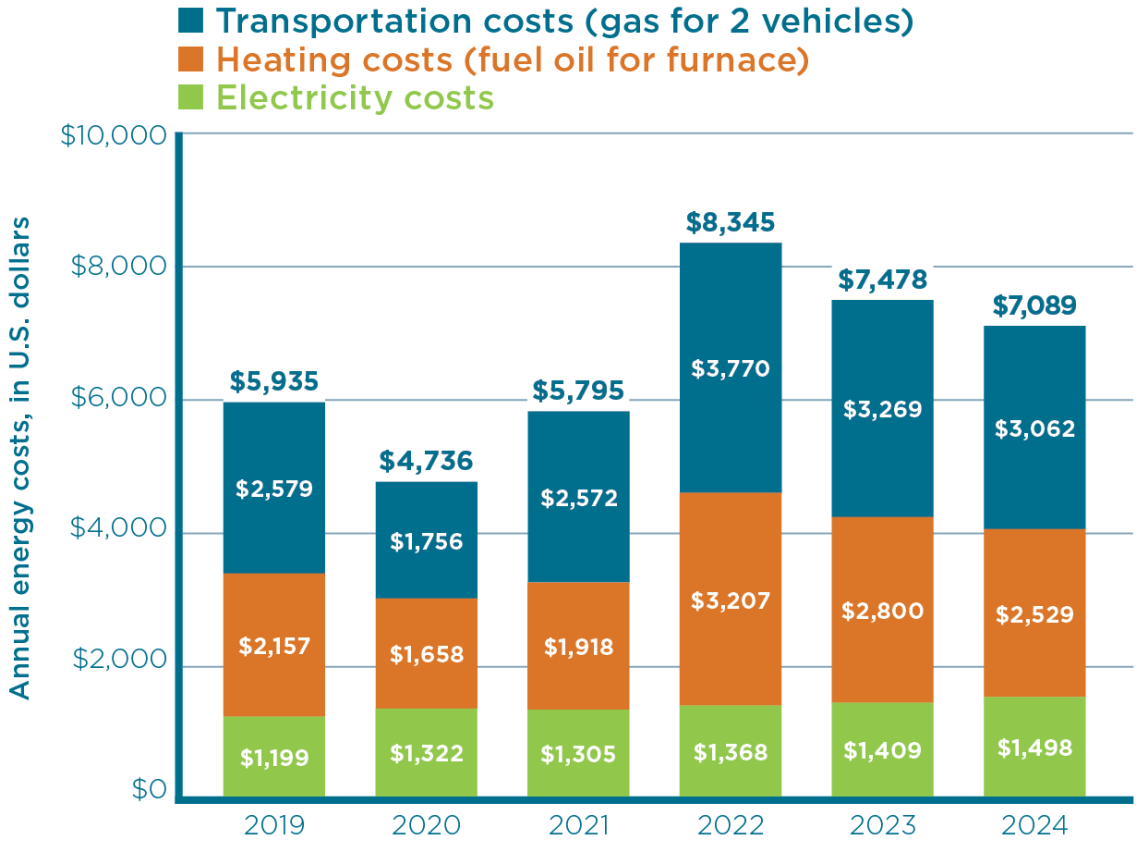
Annual energy costs for an example VT household, 2019–2024



Sources: Transportation costs estimated for a household with 2 gasoline vehicles based on VT average annual VMT from the Federal Highway Administration, average MPG assumption from the 2021 Vermont Transportation Energy Profile, and average annual gasoline prices for New England from EIA. Heating costs for a fuel oil furnace estimated based on average Vermont heating load of 83 MMBtu (adjusted based on annual heating degree days), average fuel oil furnace efficiency from the Efficiency Vermont Technical Reference Manual (TRM), 2024, and average VT fuel oil prices from the Department of Public Service. Electricity costs estimated based on average monthly electricity consumption and average annual electricity prices from EIA. **Note:** Costs are presented using nominal prices and are not adjusted for inflation.

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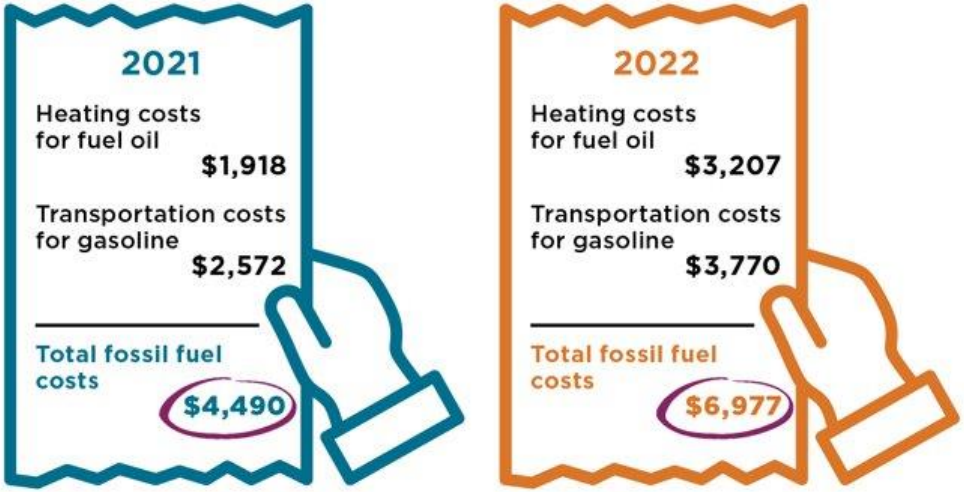
Not in report

Fossil fuel costs spiked in 2022: Example cost impacts for a Vermont household



Sources: Transportation costs estimated for a household with 2 gasoline vehicles based on average fuel efficiency (23.4 MPG) from "Vermont Transportation Energy Profile 2021"; average annual gasoline prices for New England (2021: $2.94/gal; 2022: $3.98/gal) from EIA; and VT average annual vehicle miles traveled (VMT) from the Federal Highway Administration (10,236 in 2021 and 11,084 in 2022 - this difference in VMT accounts for $72 of the total cost increase). Heating costs for a fuel oil furnace estimated based on average Vermont heating load of 83 MMBtu (adjusted based on annual heating degree days); average fuel oil furnace efficiency (81%) from the Efficiency Vermont, "Technical Reference Manual" (TRM), 2024; and average VT fuel oil prices from the Department of Public Service.

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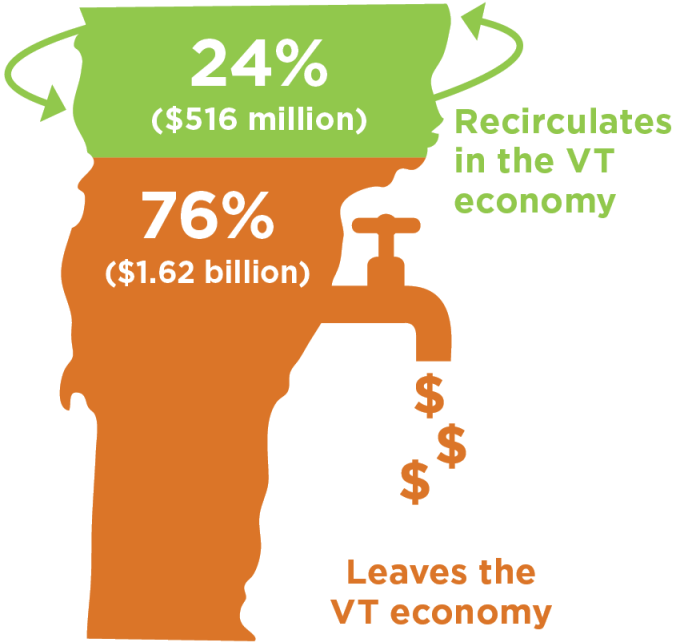
Table 1. Average spending by energy category +/- standard deviation for the current report and the previous version of the report released in 2019.

Energy Type	Average Expenditure (2019)	Range of expenditures (2019)	Proportion of total energy cost (2019)	Average Expenditure (2023)	Range of expenditures (2023)	Proportion of total energy cost (2023)
Electricity	$1,150 ±$199	$302 - $1,777	20%	$1,417 ±$209	$619 - $2,073	20%
Thermal	$2,050 ±$290	$1,041 - $2,916	35%	$2,447 ±$390	$1,050 - $4,340	35%
Transportation	$2,638 ± $126	$2,047 - $2,874	45%	$3,217 ±$417	$1,682 - $4,196	45%
Total	$5,837 ± $471	$3,859 - $6,949	-	$7,071 ±$741	$3,498 - $9,100	-

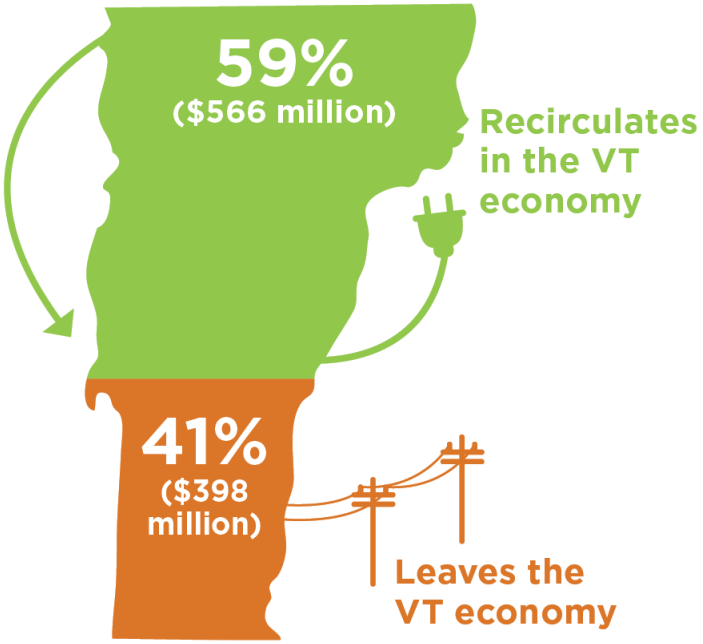
Source: Efficiency Vermont, 2023 Vermont Energy Burden Report

VT average annual fossil fuel spending



Sources: Fossil fuel spending: VT Department of Taxes, 2025; VGS, 2025; EIA, 2025; Dollar recirculation share: Ken Jones, EAN Senior Fellow for Economic Analysis, 2025. **Note:** Data shown are an average of 2021-2024. This graph includes spending on thermal and transportation fuels only.

VT average annual electricity spending



Sources: Electricity spending: Vermont Department of Public Service and VT electric utilities. Dollar recirculation share: Ken Jones, EAN Senior Fellow for Economic Analysis, 2025. **Note:** Data shown are an average of 2021-2024. The methodology for the dollar recirculation share was updated in January 2025 to account for out-of-state transmission costs.

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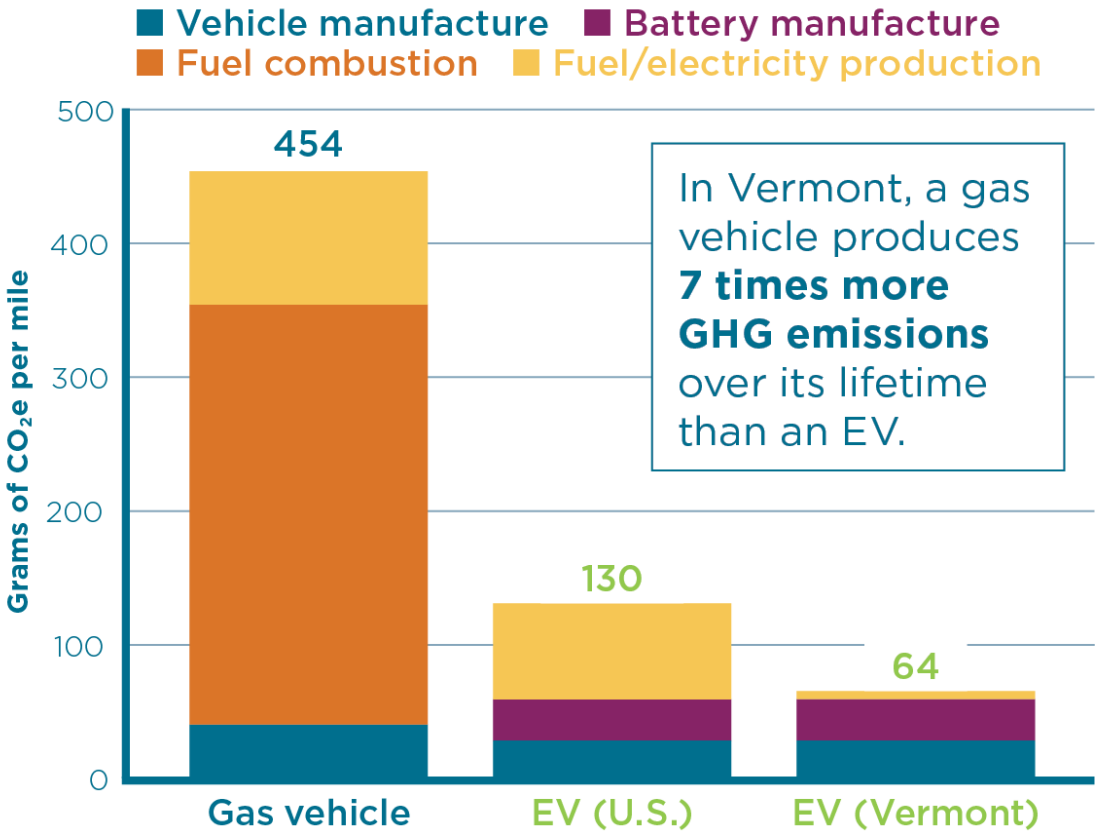
Lifecycle GHG emissions of gas vs. electric vehicles



Sources: ICCT, "Life-cycle greenhouse gas emissions of U.S. sedans and SUVs with different powertrains and fuel sources," 2024. Vermont electricity emissions based on 2020 life cycle emissions from Vermont Agency of Natural Resources/ERG, "Vermont Energy Sector Life Cycle Assessment," 2024. **Notes:** Values represent emissions over the lifetime of a vehicle purchased in 2024. Emissions from EVs are presented separately for the U.S. and Vermont because Vermont's electricity portfolio is much lower-emitting than the national average.

Four Features of Fossil Fuels

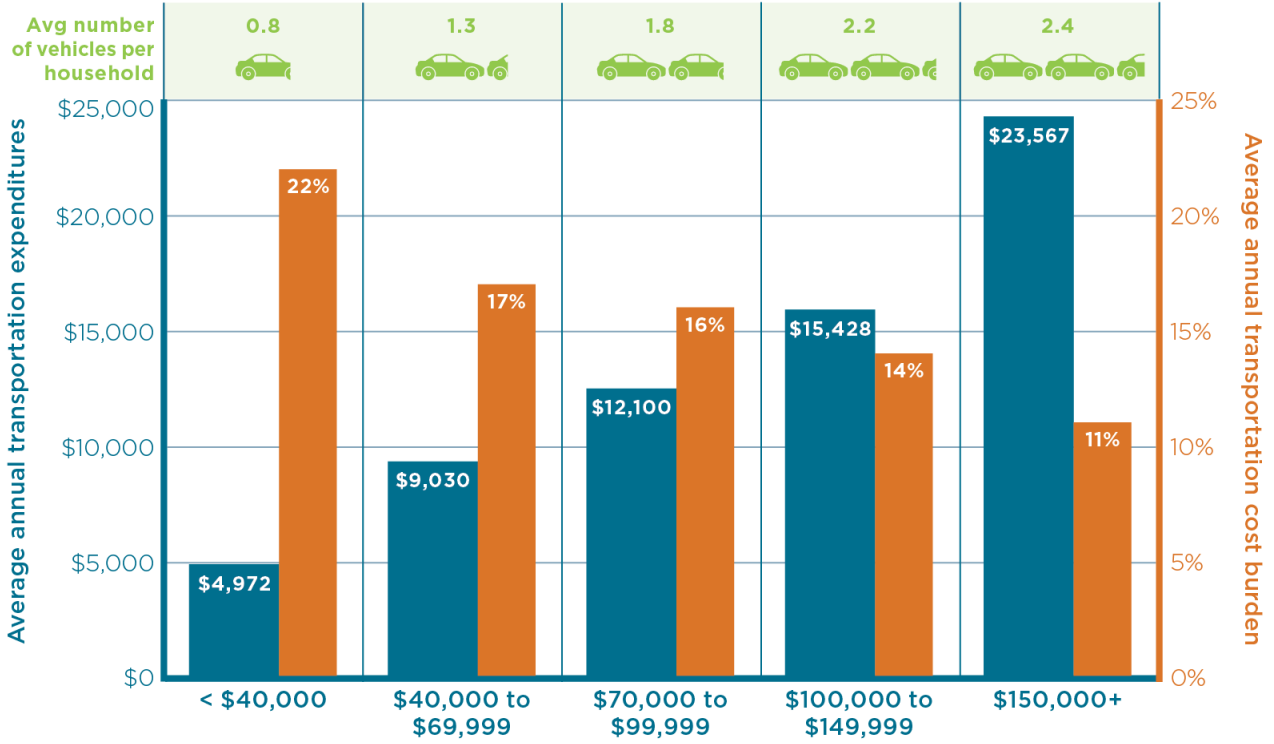
1) Expensive

2) Price-volatile

3) Drain $ out of Vermont (100% imported)

4) Heavily polluting (harming human health and worsening climate destabilization)

Transportation expenditures and burden by household income, Northeast, 2022-2023



Source: U.S. Bureau of Labor Statistics, Consumer Expenditure Surveys, average expenditures for the Northeastern U.S., 2022-2023. **Note:** Transportation cost burden is the share of household income that is spent on transportation-related costs, including vehicle purchase, fuel, maintenance, insurance, etc.

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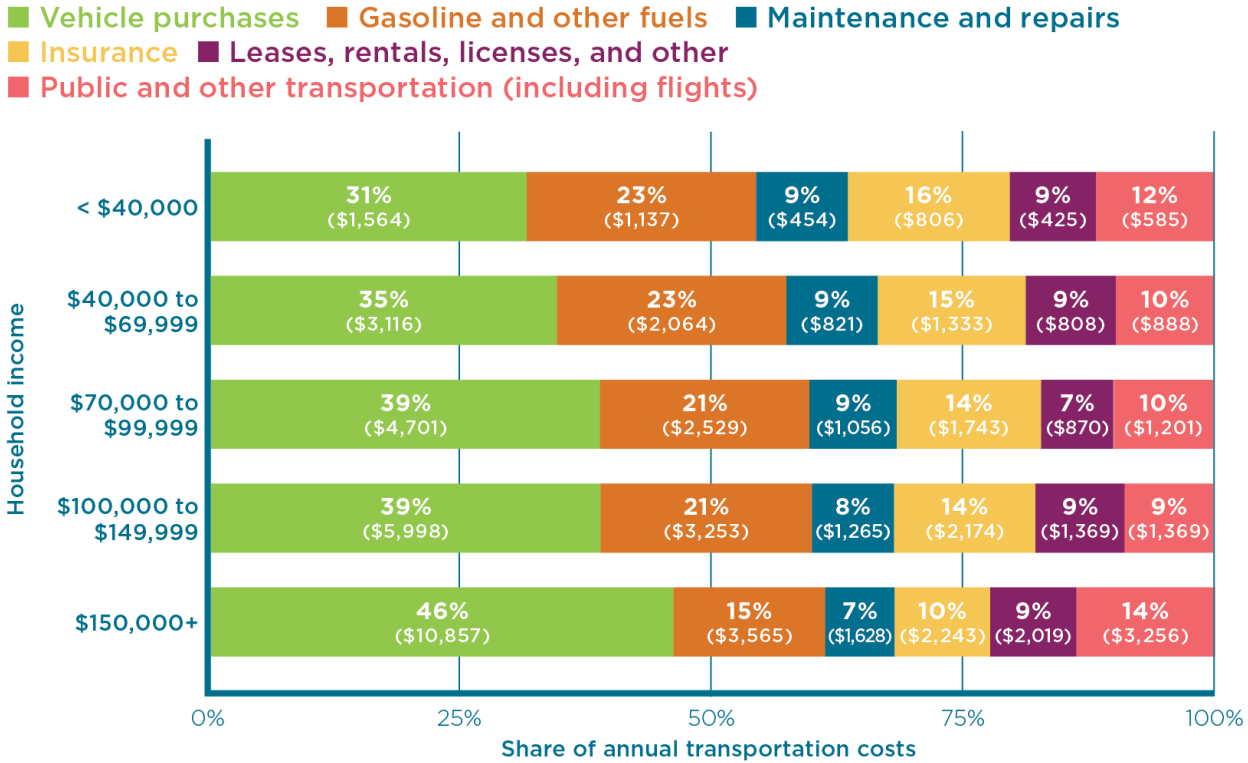
Share of annual transportation costs by expense type and income category, Northeast, 2022–2023



Source: U.S. Bureau of Labor Statistics, Consumer Expenditure Surveys, average expenditures for the Northeastern U.S., 2022-2023.

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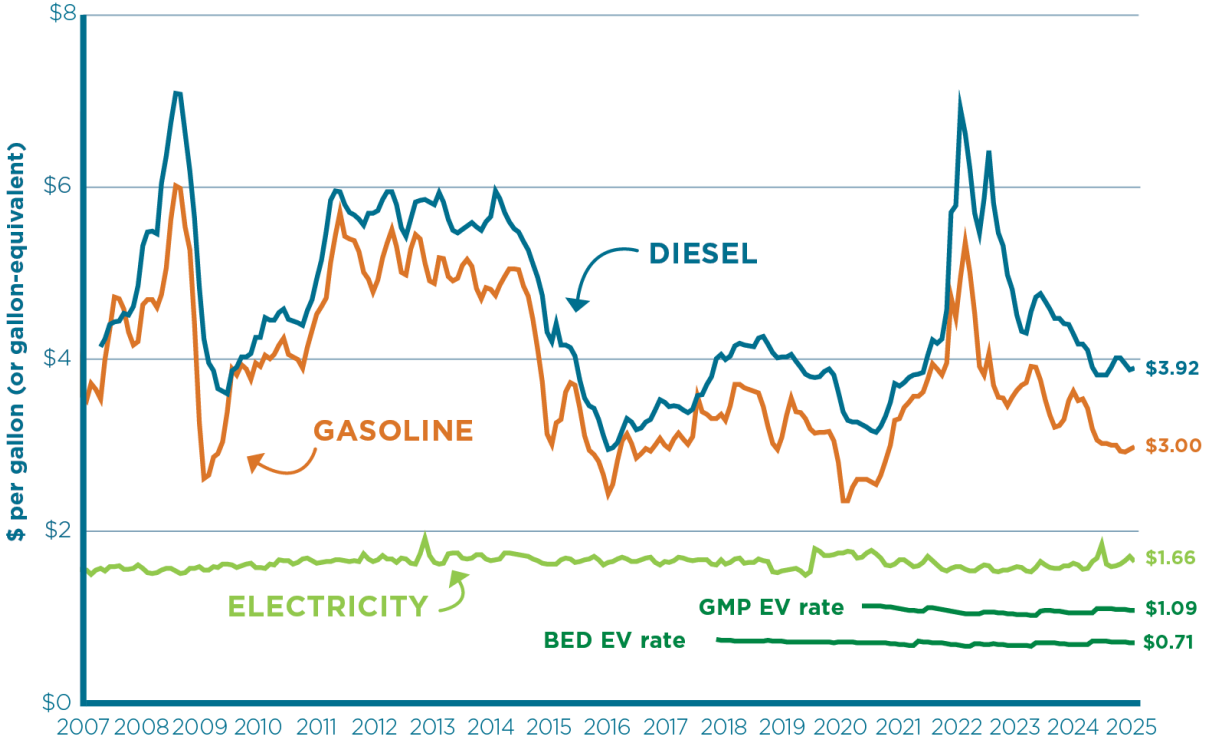
Cost comparison of different transportation fuels over time in VT



Sources: VT electricity, gasoline, and diesel prices: EIA, 2025; Off-peak EV rates: Green Mountain Power and Burlington Electric Department, 2025. **Notes:** Data through June 2025. Prices shown are adjusted for inflation and shown in June 2025 dollars, using the U.S. Bureau of Labor Statistics Consumer Price Index. The electricity prices shown in light green are average statewide residential prices.

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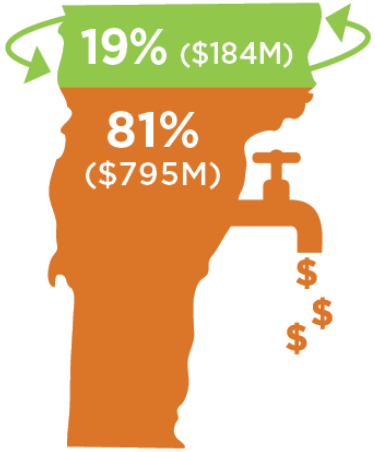
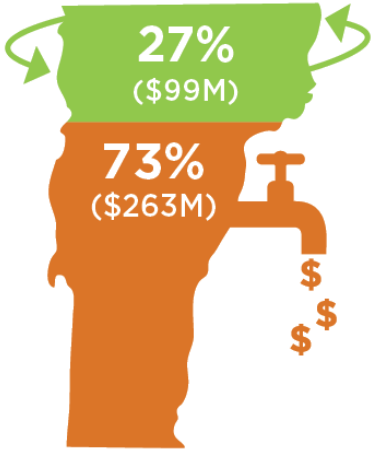
Average annual transportation spending in VT, 2021–2024

■ Recirculates in the VT economy ■ Leaves the VT economy

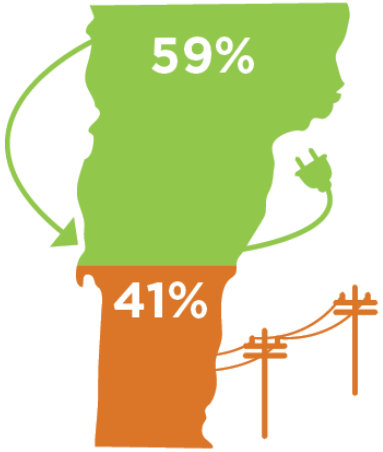
GASOLINE



DIESEL



ELECTRICITY



Sources: Fossil fuel spending: VT Department of Taxes, 2025; EIA, 2025; Electricity spending: VT Department of Public Service and VT electric utilities, 2025; Dollar recirculation share: Ken Jones, EAN Senior Fellow for Economic Analysis, 2025.

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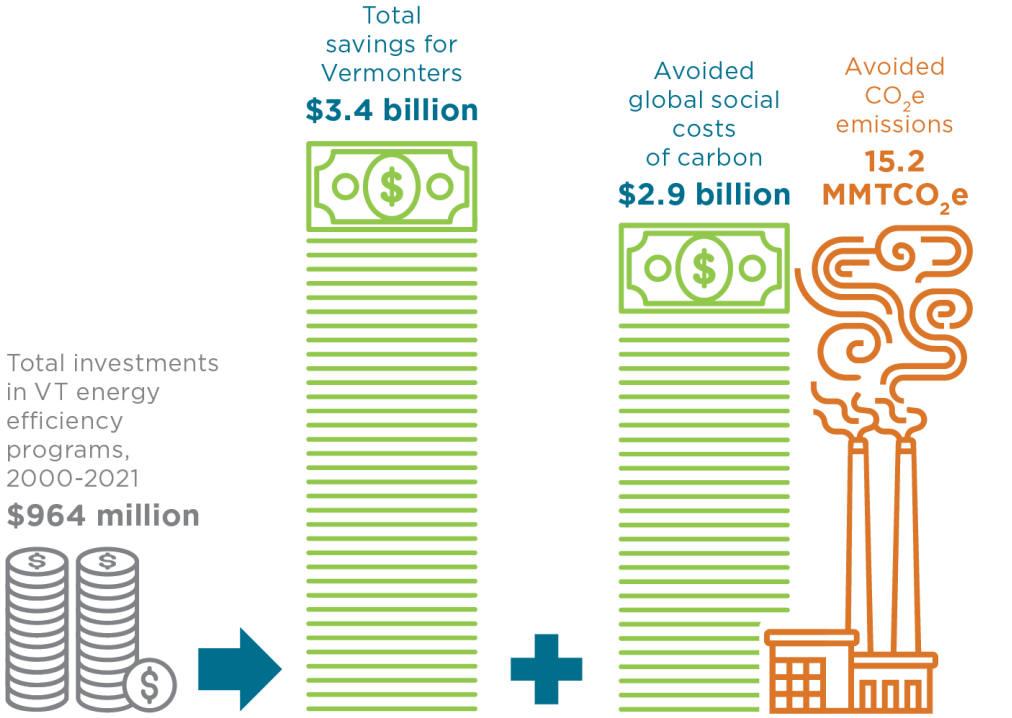
Investment vs. Cost & Fleeting vs. Durable Affordability

Lifetime return on investment from Vermont energy efficiency programs



Source: Efficiency Vermont, 2023; Burlington Electric Department, 2023; VGS, 2023. **Notes:** Social cost of carbon based on estimate of $190 per metric ton ("EPA Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances", 2023). Savings, avoided costs, and avoided emissions incorporate the modeled lifetime of the measures. Avoided CO_2e emissions are calculated by energy efficiency utilities using marginal emissions of the ISO-NE mix, rather than of VT's electricity portfolio.

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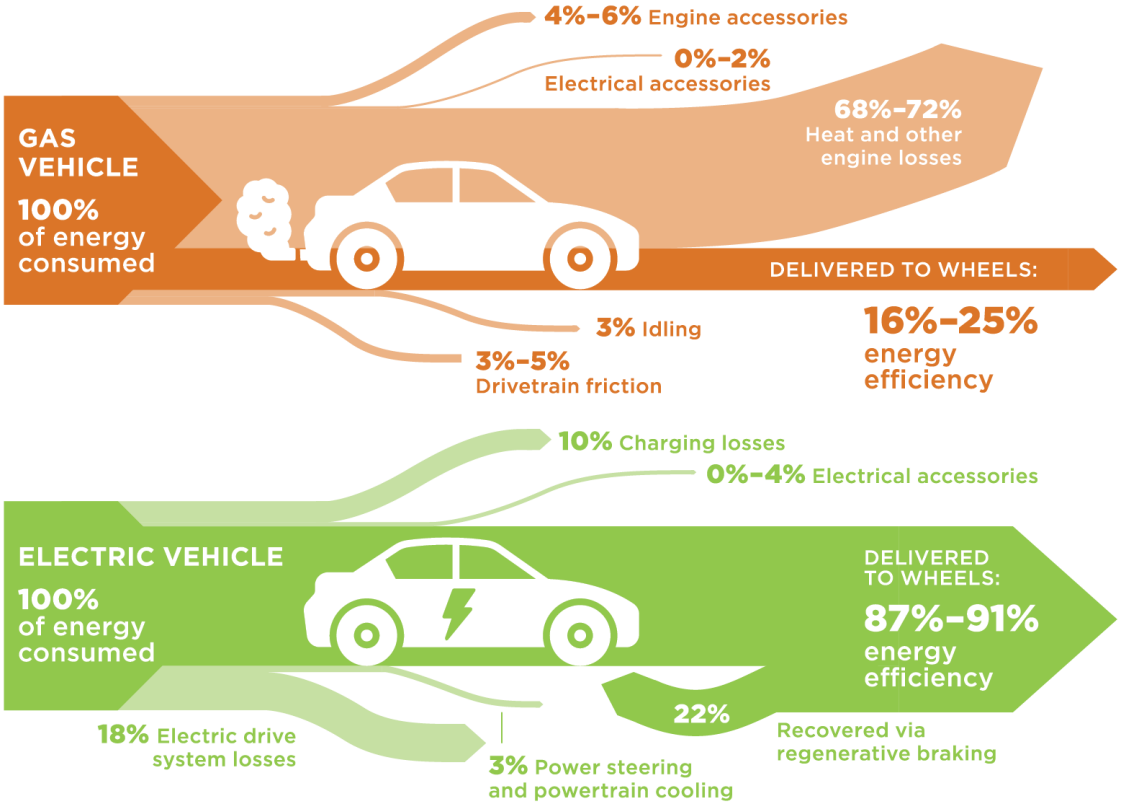
Efficiency of energy use: Gas vehicles vs electric vehicles



Source: Fueleconomy.gov, 2024. **Note:** Estimates shown are for combined city and highway driving.

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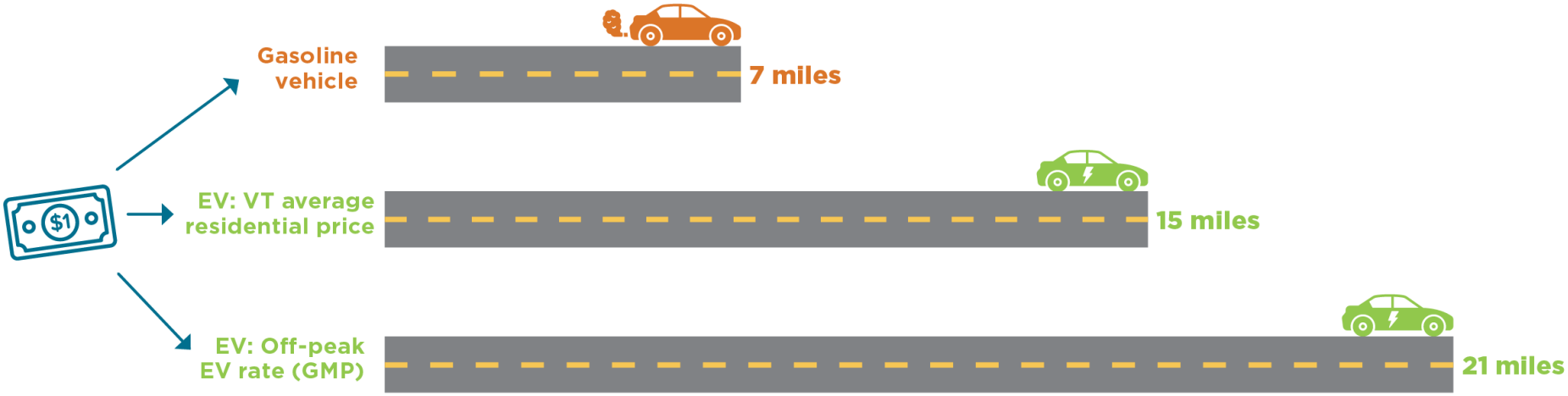
With an electric vehicle, your dollar takes you farther

Average miles per dollar: gasoline vs. electric



Sources: Average 2024 gasoline prices ($3.24/gal) for New England and average residential electricity prices ($0.22/kWh) for VT from EIA; Off-peak EV charging rate (rate 74: $0.15/kWh) from Green Mountain Power (GMP); Average EV efficiency rate of 0.306 kWh/mile and average VT fleetwide fuel economy of 23.4 MPG from "Vermont Transportation Energy Profile 2021."

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Gas vehicles cost more over time — for drivers and society

Extra fuel and maintenance costs over the life of the vehicle: ~ $9,900

+

Extra societal costs from gasoline GHG emissions over the life of the vehicle: ~ $7,400

Sources: Annual mileage assumed to be 11,153 based on 2023 data for Vermont from Federal Highway Administration; Fuel economy assumptions from "Vermont Transportation Energy Profile 2021"; Gasoline and electricity prices from EIA Annual Energy Outlook; maintenance costs per mile (gas vehicle $0.11/mile; EV $0.08/mile) from AAA "Your Driving Costs," 2024; gasoline emissions factors from EIA and EPA; electricity emissions intensity assumed to decrease linearly to 100% carbon-free by 2035; Social Cost of GHG values from EPA (2023), using a 2% discount rate. Calculation based on a vehicle lifetime of 8 years, per assumptions in the 2023 "Vermont Tier III Technical Reference Manual." **Note**: Upfront vehicle costs vary based on make/model and incentive eligibility; because of this variance, upfront vehicle costs are not quantified here. All costs presented in 2024 dollars.

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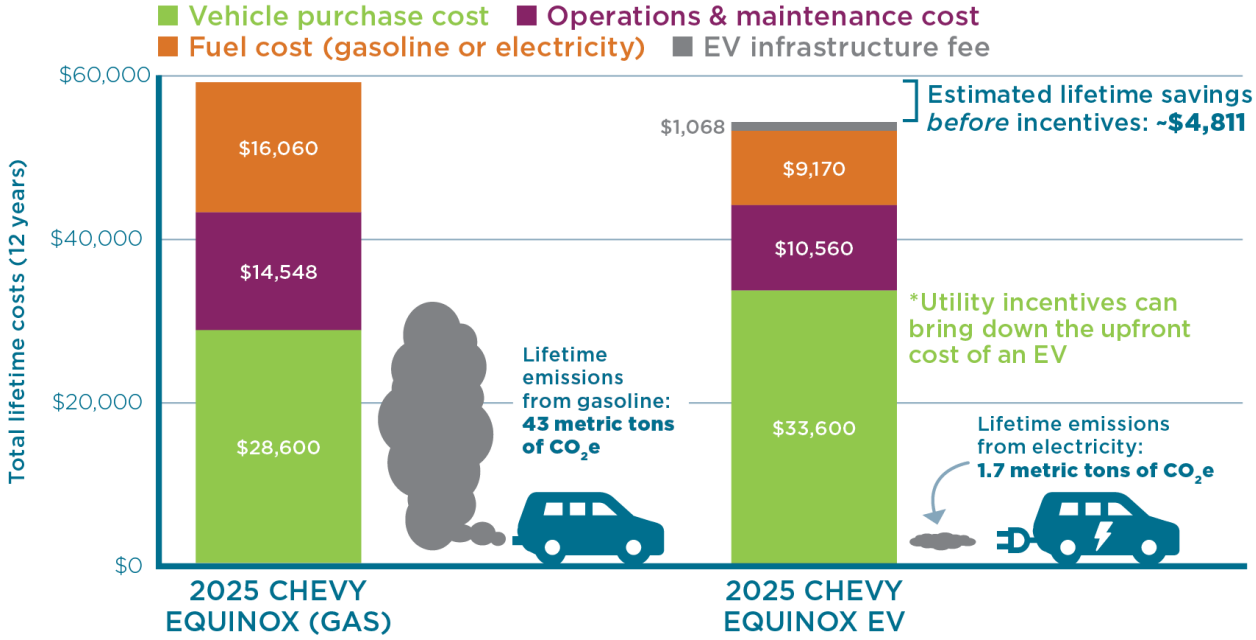
Lifetime costs and GHG emissions of comparable gas vs. electric vehicles in Vermont



Sources: Vehicle costs represent the base MSRP for 2025 models. Gasoline emissions factor from EIA; electricity emissions factor calculated based on Vermont's GHG Emissions Inventory (VT ANR, 2025). Fuel costs calculated based on 2024 average gasoline prices for New England ($3.24/gal) and average VT electricity prices ($0.22/kWh) from EIA. Operations and maintenance costs estimated based on AAA 2024 Your Driving Costs study. Operating costs and fuel costs are calculated based on 2023 VT average annual mileage of 11,153 miles from the Federal Highway Administration. For EV infrastructure fee ($89/year), VT Act 148 of 2025. **Notes:** Charging costs for EVs can be even lower than presented with the use of EV charging rates offered by some VT utilities. Vehicle efficiency rates are from manufacturer reporting; however, actual efficiency rates are often lower in colder temperatures. For vehicle lifetimes beyond 12 years, average total EV savings relative to gas vehicles would be higher than presented here, with additional accumulated annual fuel and maintenance savings. Vehicle purchase costs for EVs can be lower after incentives — for the latest information about EV incentives, visit driveelectricvt.com.

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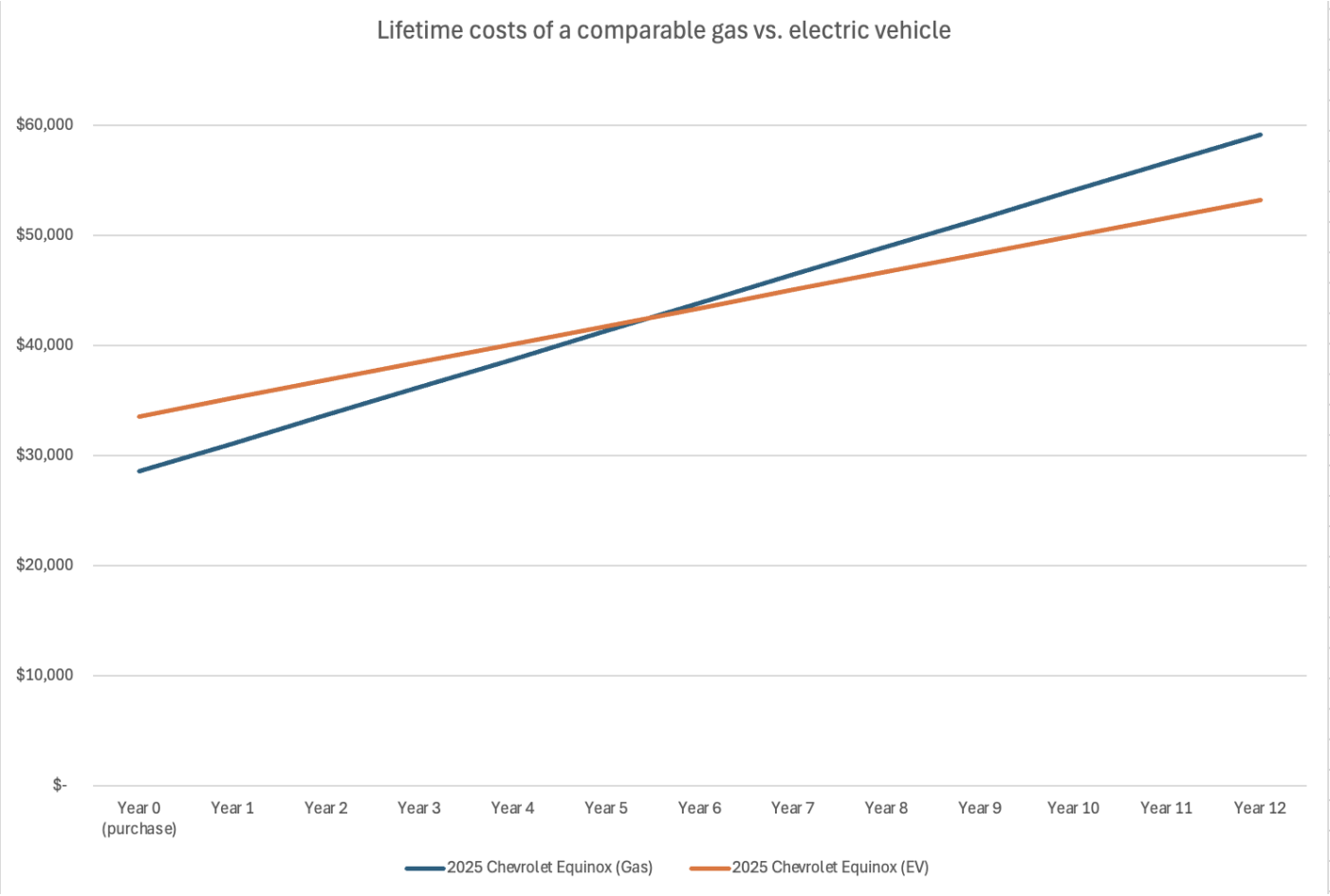
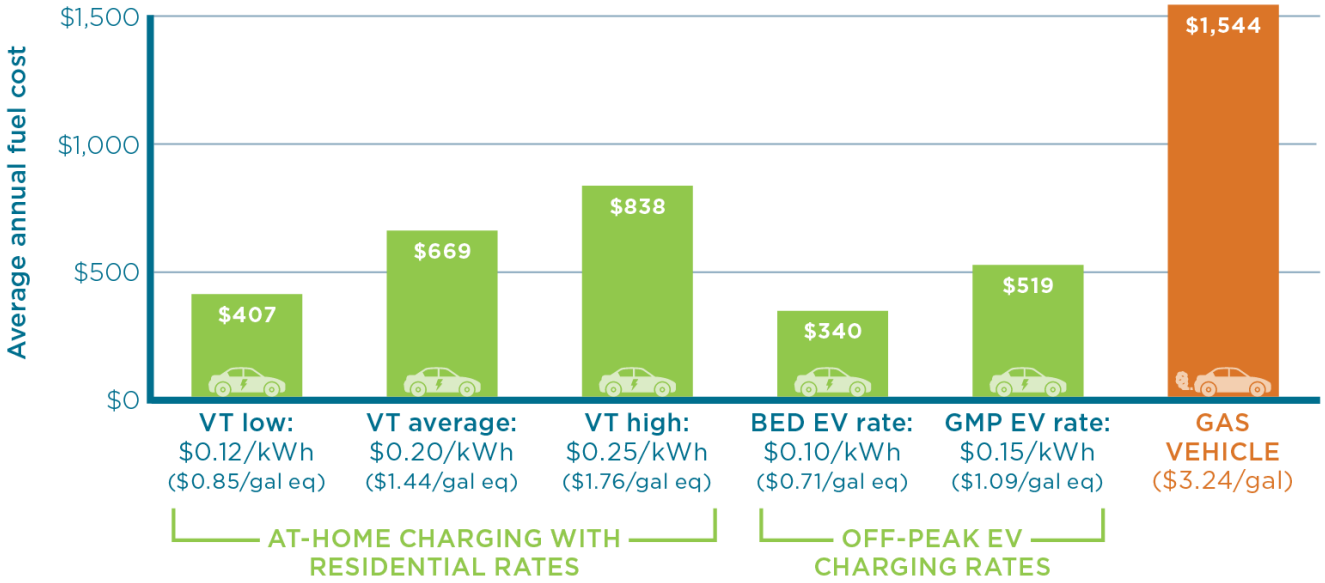

Lifetime costs of a comparable gas vs. electric vehicle
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$-
Year 0 (purchase)
Year 1
Year 2
Year 3
Year 4
Year 5
Year 6
Year 7
Year 8
Year 9
Year 10
Year 11
Year 12
2025 Chevrolet Equinox (Gas)
2025 Chevrolet Equinox (EV)

Annual vehicle fueling costs at various Vermont electricity rates, 2024



Sources: Electricity rates from Vermont electric utility rate filings; Gasoline prices are an average of New England monthly prices in 2024 from EIA; Annual costs based on Vermont average VMT of 11,153 miles from the Federal Highway Administration and average vehicle efficiency rates from the 2021 Vermont Transportation Energy Profile. **Notes**: As of 2025 Burlington Electric Department (BED) and Green Mountain Power (GMP) are the only two VT utilities that offer EV charging rates, though other utilities are also developing EV rates. $/gallon equivalent ($/gal eq) denotes how the price per kWh would compare to the price per gallon of gasoline at average vehicle efficiencies. In addition to electricity rates, utility bills also include fees and charges, which are not shown on this graph. It is not uncommon for charges and fees to make up 10% of total electricity bills.

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The funding stack, including other state programs and the federal rebate, that was in place to support low- and moderate-income consumers purchase an EV has dwindled

Potential cost of a used EV after incentives

	Standard incentive	< $57,000 income incentive
Used 2022 Chevrolet Bolt EV 1LT Hatchback 4D: Typical listing price	**$20,043**	**$20,043**
Federal: Tax credit	-$4,000	-$4,000
Electric utility: Rebate*	-$250 to -$1,500	-$900 to -$2,500
State: MileageSmart**	$0	-$2,500 to -$5,000
State: Replace Your Ride (if applicable*)	$0 to -$2,500	$0 to -$5,000
Total incentives	**-$4,250 to -$8,000**	**-$7,400 to -$16,500**
Cost after incentives	**$12,043 to $15,793**	**$3,543 to $12,643**

What a difference a year makes…

Example cost of a used EV in Vermont after incentives

	Standard incentive	< 80% Area Median Income incentive	
Used 2023 Nissan LEAF S Hatchback 4D: Typical listing price	$16,598	$16,598	Incentive status
Electric utility: Rebate*	-$250 to -$1,500	-$900 to -$2,500	Expected to continue
~~Federal: Tax credit ($4,000)~~	$0	$0	Expired Sept. 30, 2025
~~State: MileageSmart (up to $5,000)~~	$0	$0	Fully expended in 2024
~~State: Replace Your Ride (up to $5,000)~~	$0	$0	Fully expended in 2024
Total incentives available	-$250 to -$1,500	-$900 to -$2,500	
Cost after incentives	**$15,098 to $16,348**	**$14,098 to $15,698**	

Sources: Incentive amounts and eligibility: Drive Electric VT; Pre-incentive vehicle cost: Kelley Blue Book, typical listing price for a used 2023 Nissan LEAF S Hatchback 4D. **Notes:** MileageSmart and Replace Your Ride were state incentive programs that were fully expended in 2024 and new funding has not been allocated as of 2025. *Exact incentives vary by utility. To learn more about incentives, visit driveelectricvt.com.

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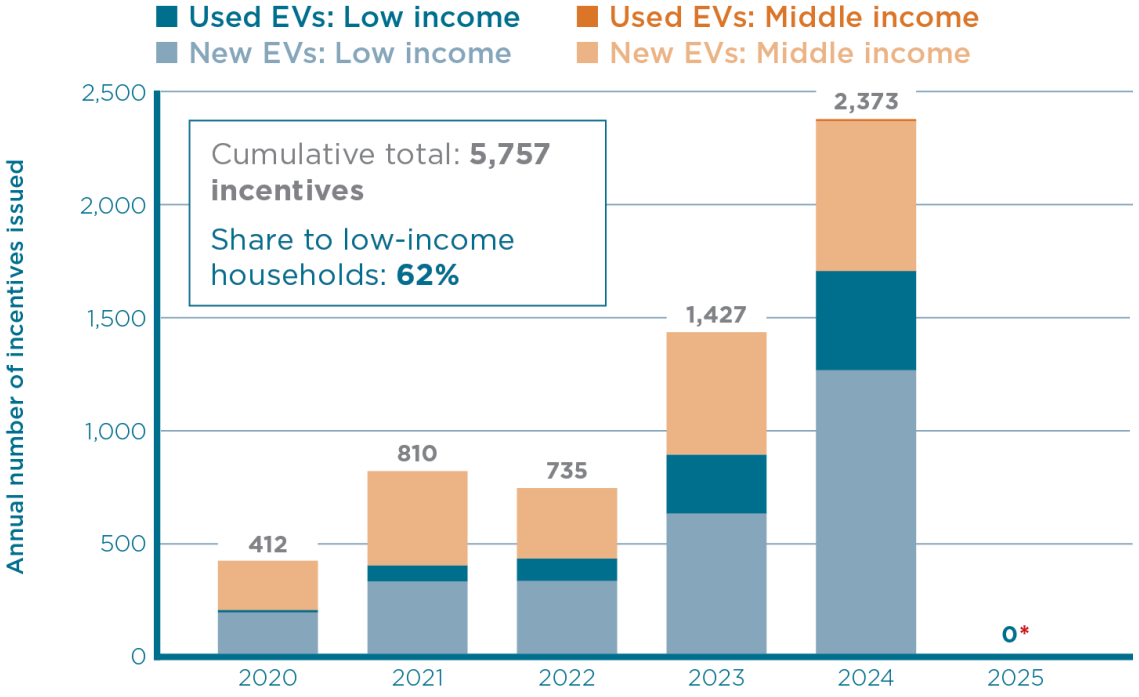
State EV incentives issued by income level in VT, 2020–2025



*Funding for state EV incentives was fully expended in 2024. As of the publication of this report new funding has not yet been allocated.

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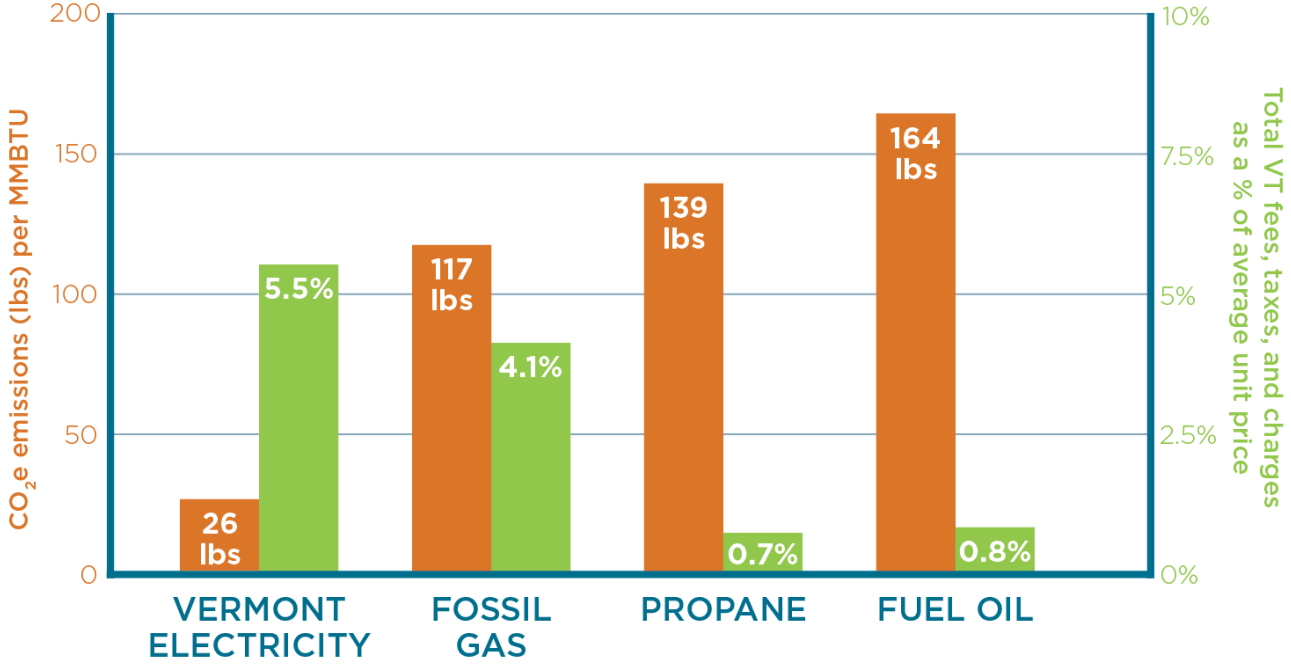
Source: Vermont Agency of Transportation, 2025. **Notes:** Data include Vermont's incentive program for new EVs, MileageSmart, and Replace Your Ride. Specific income eligibility and low income definitions vary by program. Data do not include incentives provided by the Electrify Your Fleet program.

Vermont's most polluting energy sources pay the least in fees, taxes, and charges



Sources: Thermal fuels fees and taxes: Vermont Department of Taxes, 2024; 2024 Energy Efficiency Charge for electricity and fossil gas: PUC Determination of 2024 Energy Efficiency Charge Rates; emissions factors for fossil fuels: EPA; emissions factor for Vermont electricity: Vermont Agency of Natural Resources, "Vermont Greenhouse Gas Emissions Inventory and Forecast, 1990-2022," 2025. **Note:** Unit price of fuels is based on the annual average residential rates in 2024.

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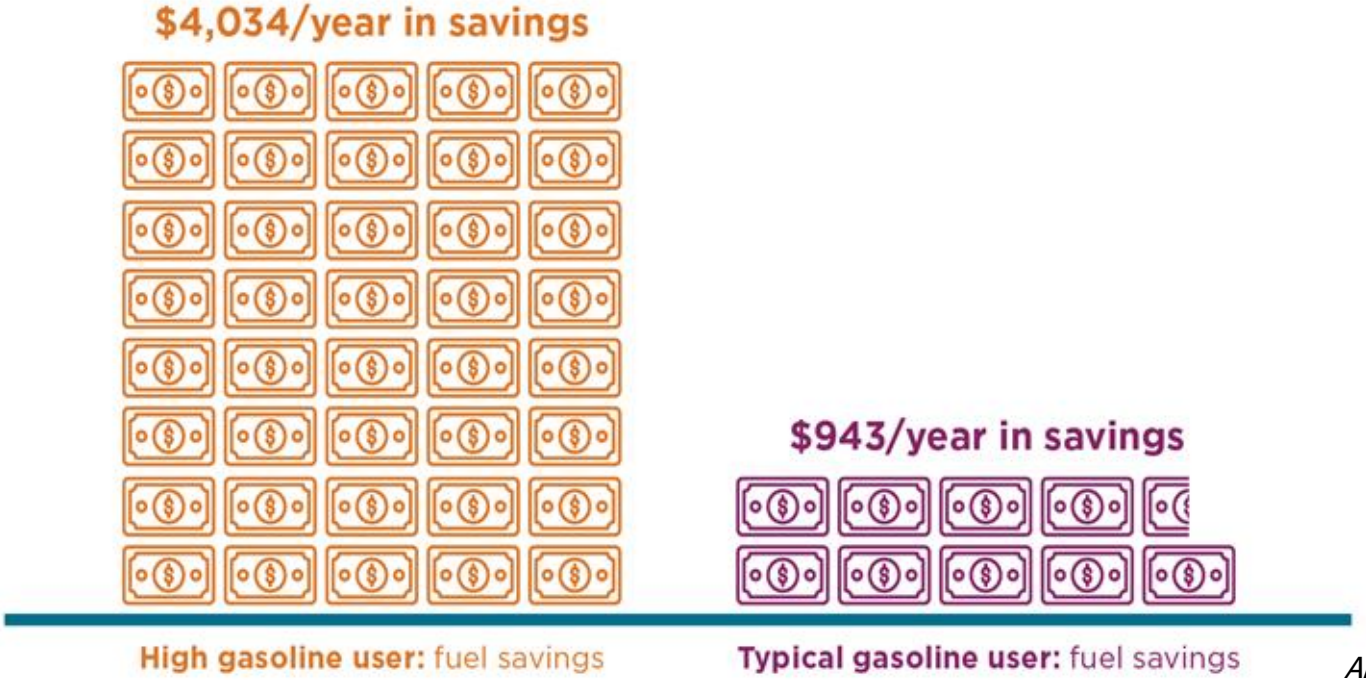
Thank you!

Questions?

jduval@eanvt.org

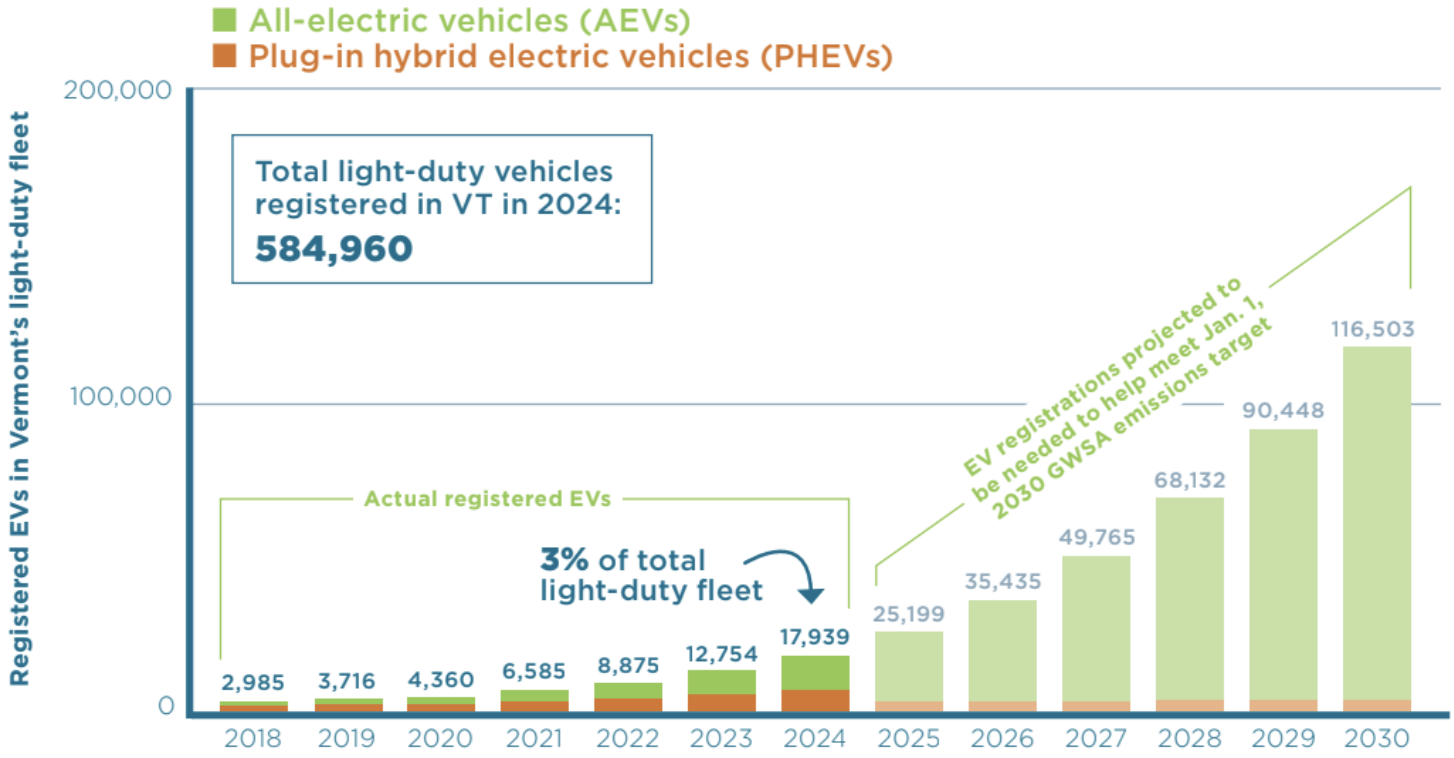
https://eanvt.org

Average annual fuel savings from switching to an EV: Vermont high gasoline users vs. typical gasoline users



Analysis by Coltura

Vermont EV registrations and future Pathways targets



Sources: Drive Electric Vermont, 2025; Energy Futures Group/Cadmus for VT Agency of Natural Resources, "Vermont Pathways Report 2.0," 2022; VT Agency of Natural Resources, 2025; Atlas Public Policy, EValuateVT Dashboard, 2025.

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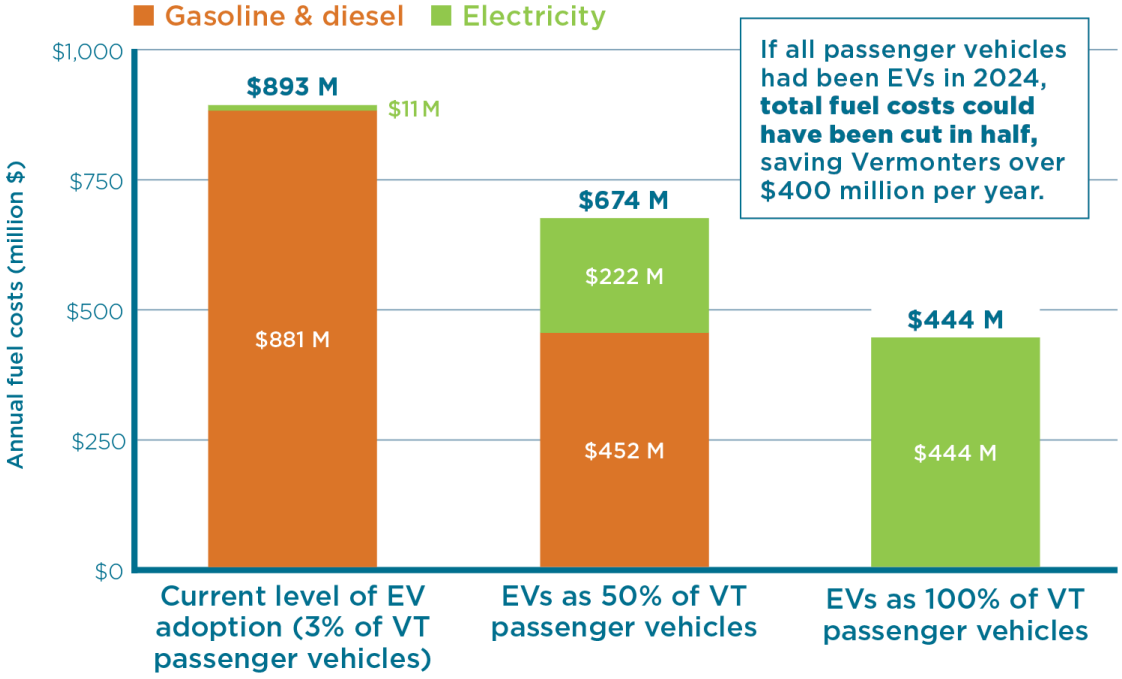
Statewide transportation fuel costs under different EV adoption scenarios (2024 prices)



Sources: Current VT vehicle registration data from the Vermont Department of Motor Vehicles via Drive Electric Vermont; scenarios assume average electricity, gasoline, and diesel prices in 2024 from EIA; average annual VMT of 11,153 from the Federal Highway Administration, 2023; average vehicle fuel efficiency from "Vermont Transportation Energy Profile 2021." **Note:** Electrification scenarios model light-duty fossil fuel vehicles being replaced by all-electric vehicles using 2024 as a reference year. As of 2024, there were approximately 585,000 light-duty vehicles registered in Vermont. Total electricity cost estimates do not incorporate potential transmission costs that could accompany increased electric load.

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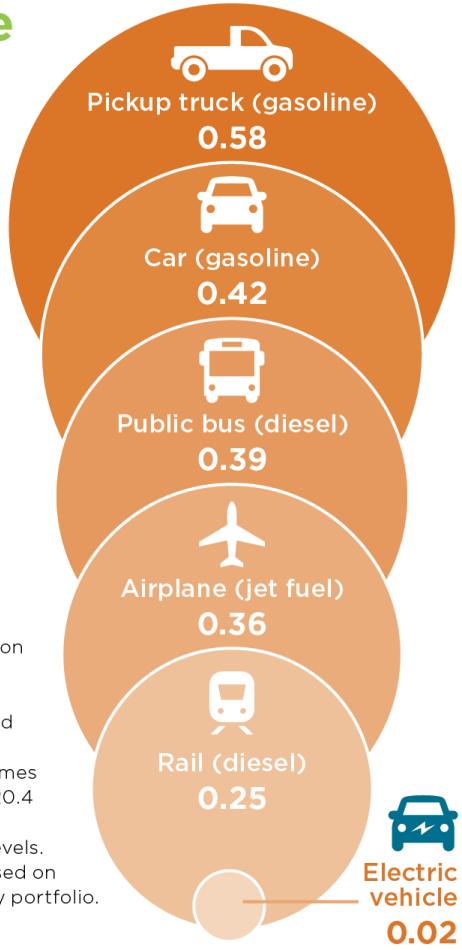
Pounds of CO_2e per passenger-mile by vehicle type (fuel emissions only)

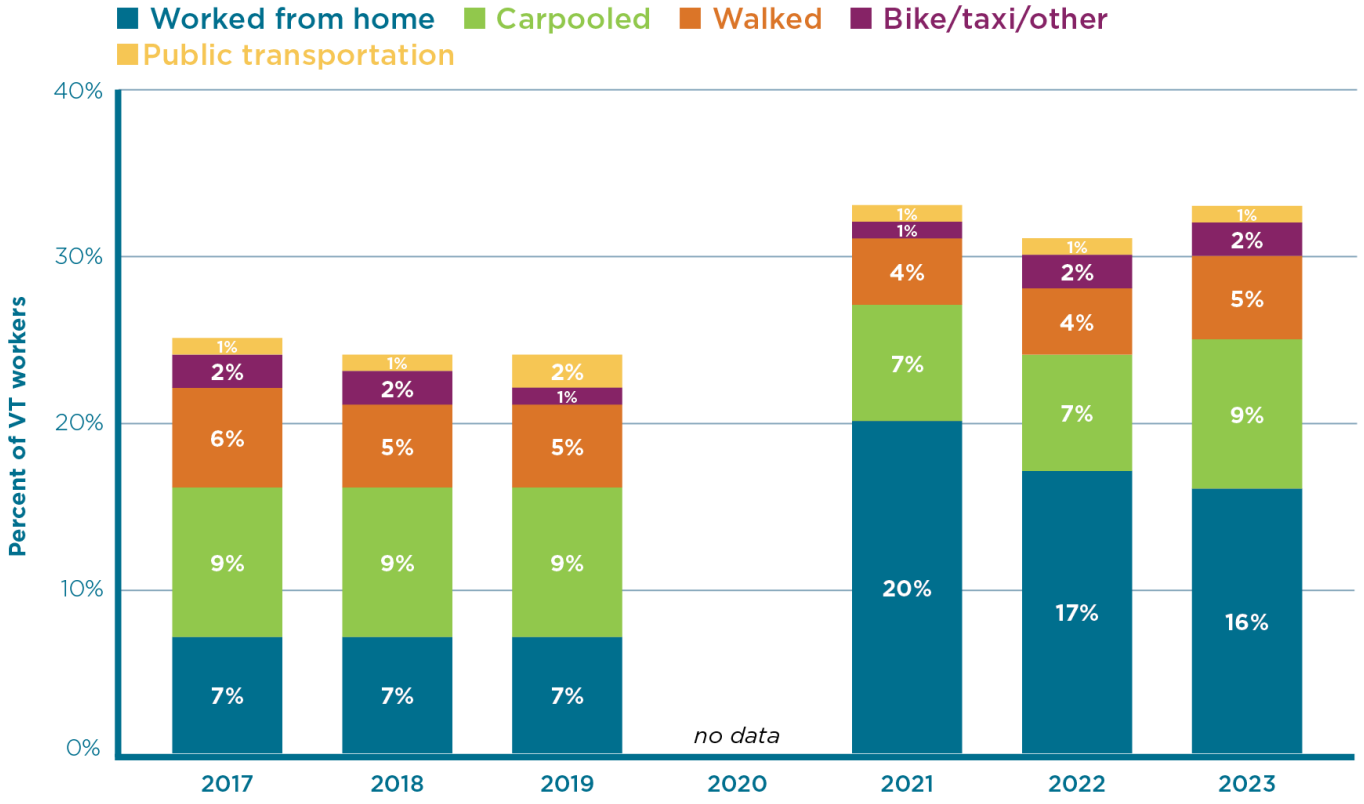
Walk/bike **0**



Sources: U.S. Department of Energy, "Transportation Energy Data Book: Edition 40," 2022; Congressional Budget Office, 2022. Fuel emissions factors from EIA. Estimates for pickup trucks, gas cars, and EVs calculated using VT average vehicle occupancy of 1.58. Estimate for rail assumes 23.2 passengers, for airplane assumes 120.4 passengers. **Notes:** Emissions can vary significantly depending on occupancy levels. Electric vehicle emissions calculated based on the emissions intensity of VT's electricity portfolio.

ENERGY ACTION NETWORK

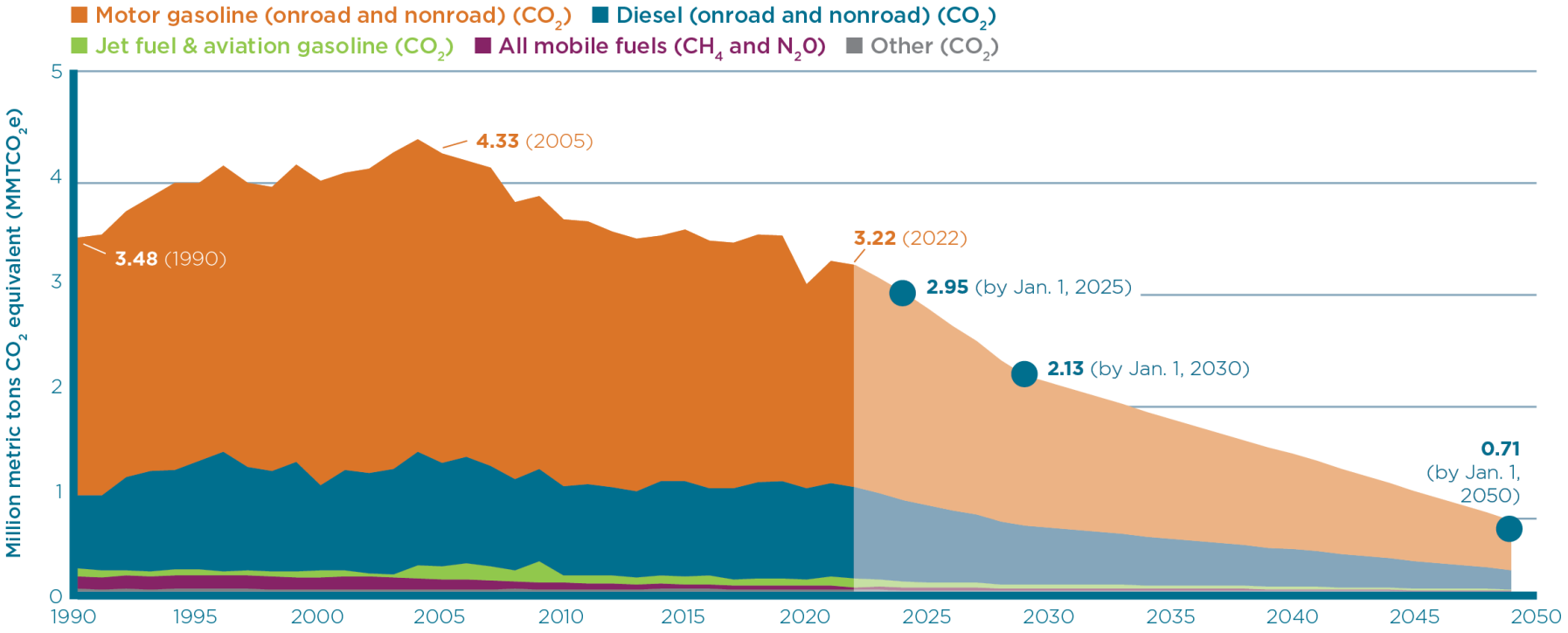
VT commute modes pre- and post-pandemic (other than single-occupancy vehicle)



Source: U.S. Census Bureau, American Community Survey 1-year estimates, 2017-2023. **Notes:** 2020 data not available due to the pandemic. Remaining commute mode share is by single-occupancy vehicles.

ENERGY ACTION NETWORK

Historical VT transportation GHG emissions and future sector targets



Source: Vermont Agency of Natural Resources, "Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990-2022," 2025. **Note:** The VT Climate Council set sectoral emissions targets for GWSA compliance, which are represented by the blue dots on the graph.

ENERGY ACTION NETWORK