Pollution & Cost Cutting Recommendations in Vermont's Climate Action Plan

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<u>Vermont Climate Action Plan – Highest Priority Pollution Reduction Recommendations</u>

- Take preparatory steps now **and join a cap-and-invest program** as soon as a viable option is available

- **Weatherize homes**, focusing on **low- and moderate-income households**

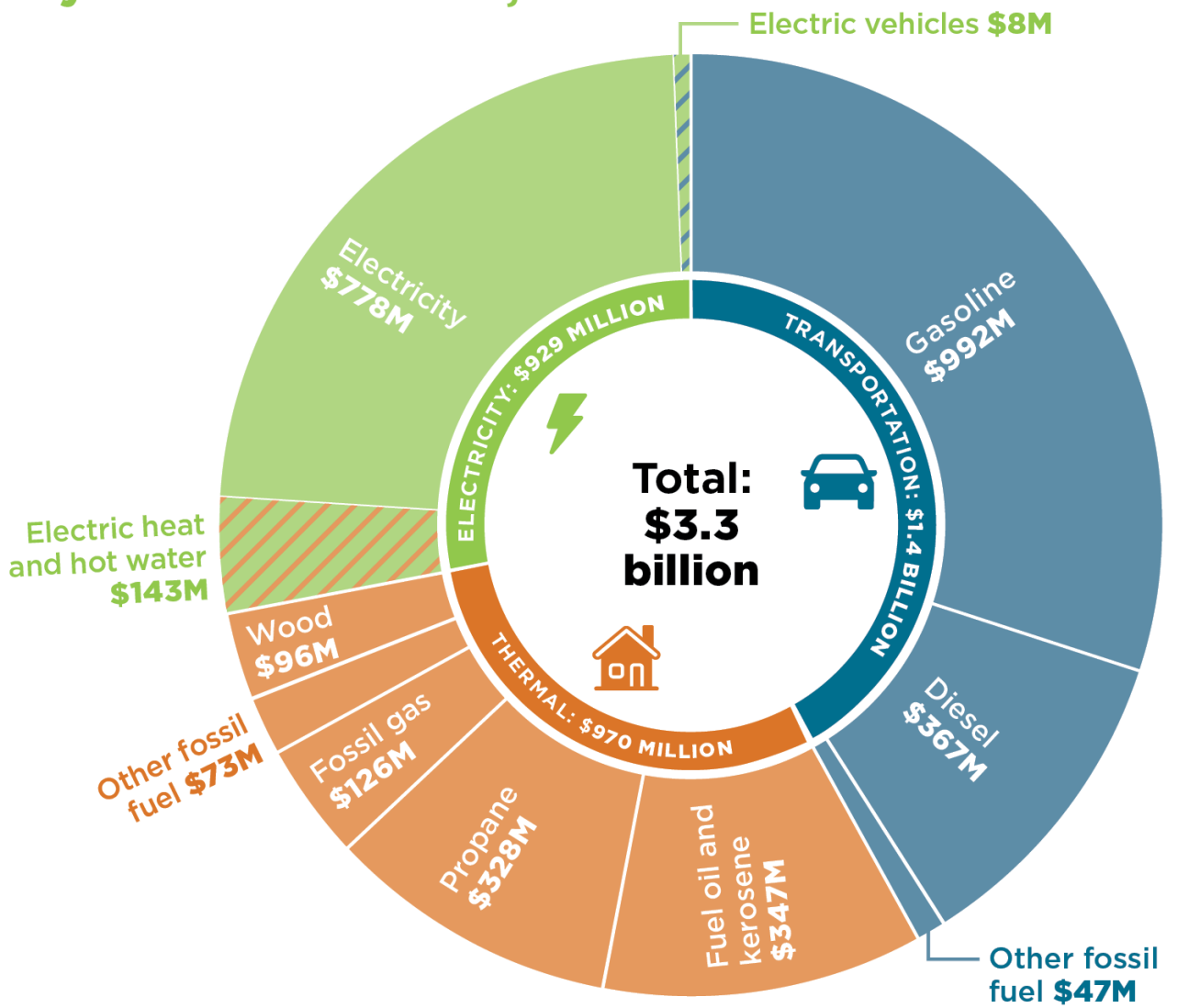
- Reduce greenhouse gas emissions from vehicles and buildings through electrification

- Support utility programs that ensure the electric grid supports customer electrification and resilience

Vermont Climate Action Plan – Key *Approach* to Developing Pollution Reduction Recommendations

- Develop and advance **win/win** solutions – *cut costs while cutting pollution to advance energy affordability*

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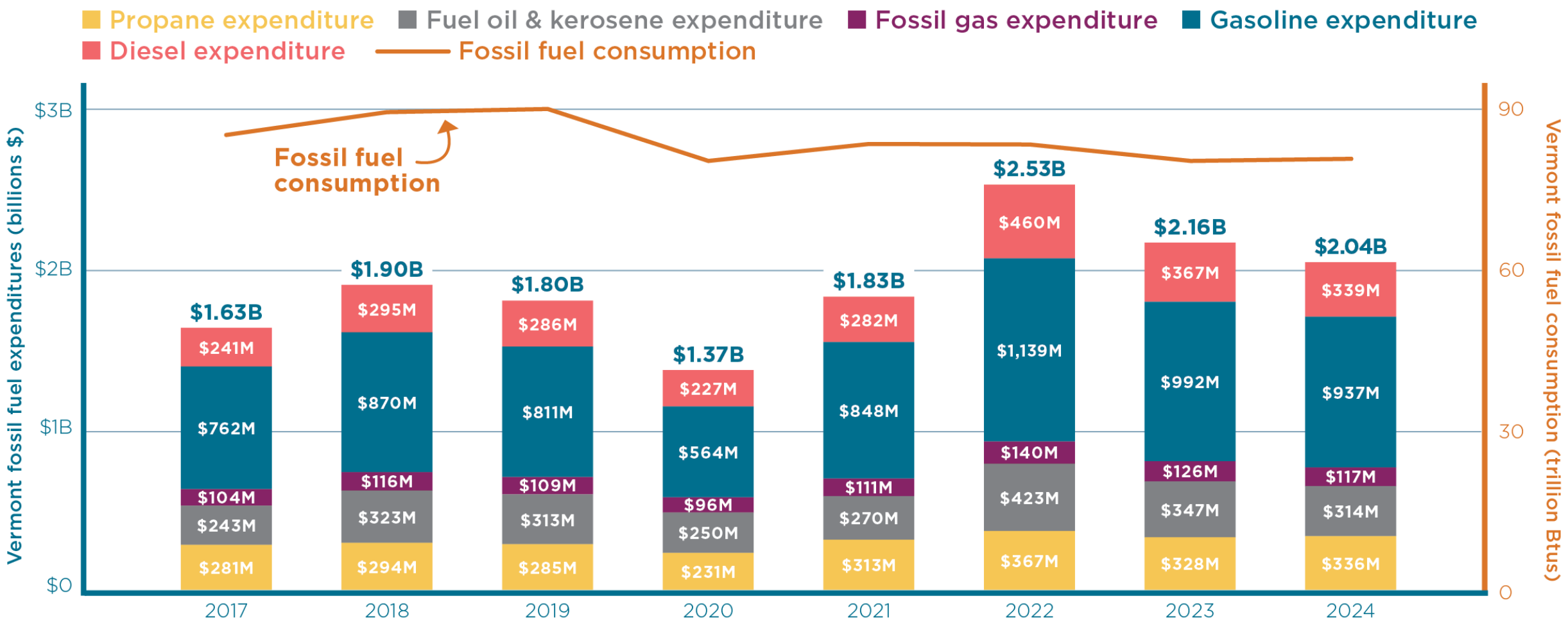
Fossil fuel price volatility has led to large cost swings for Vermont, despite relatively flat consumption



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 not adjusted for inflation.

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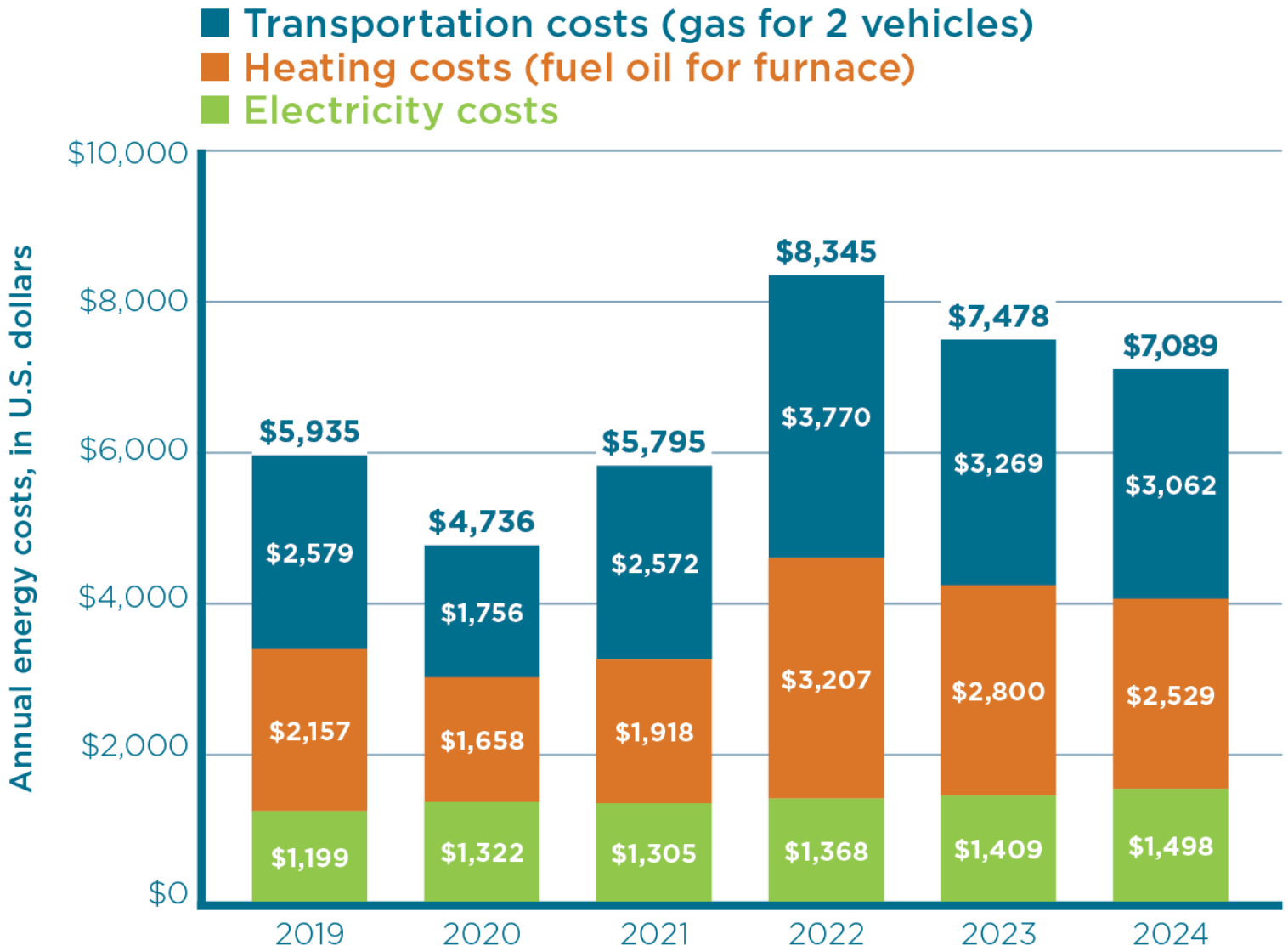
Annual energy costs for an example VT household, 2019–2024



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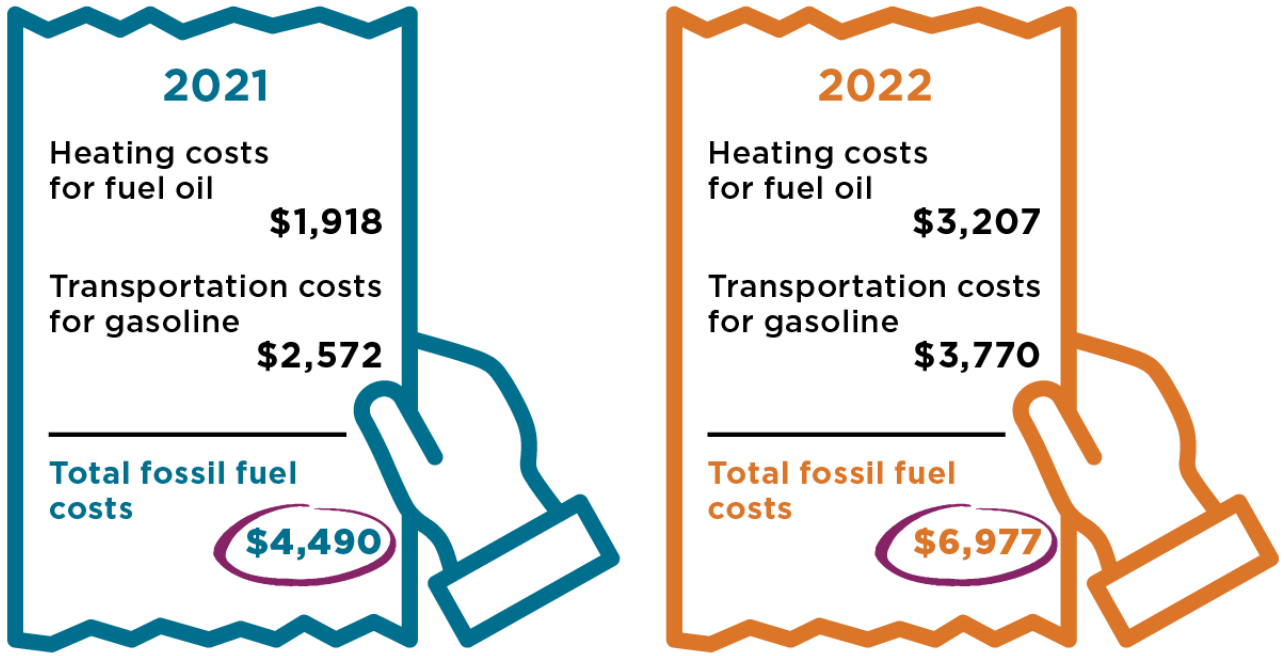
Fossil fuel costs spiked in 2022: Example cost impacts for a Vermont household



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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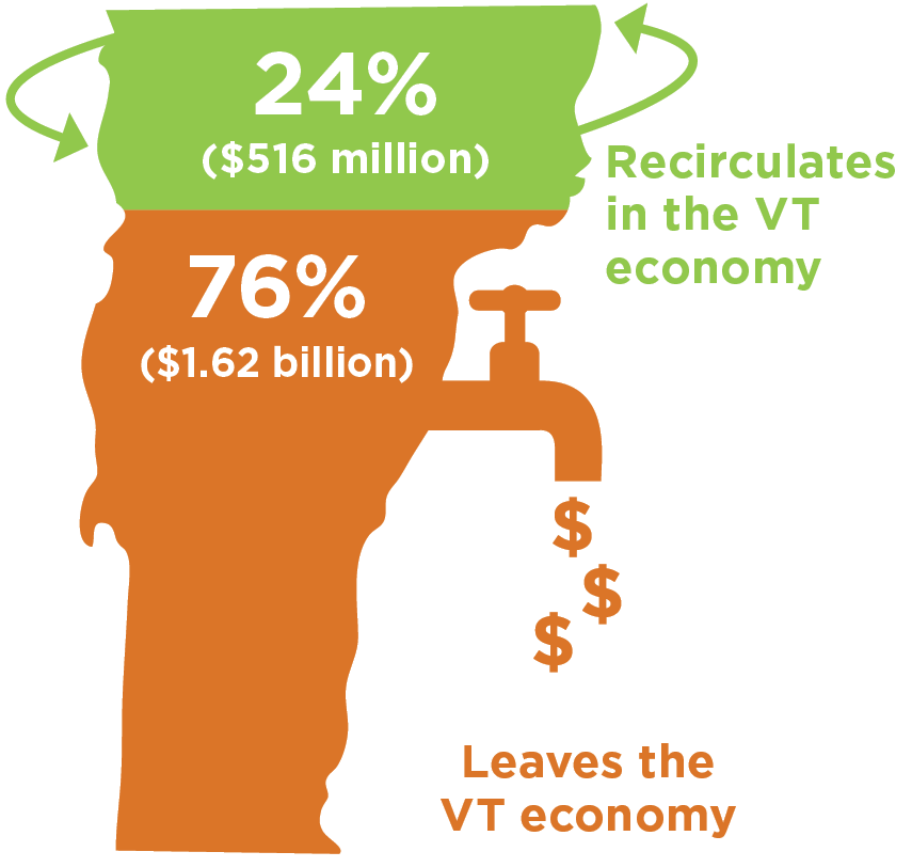
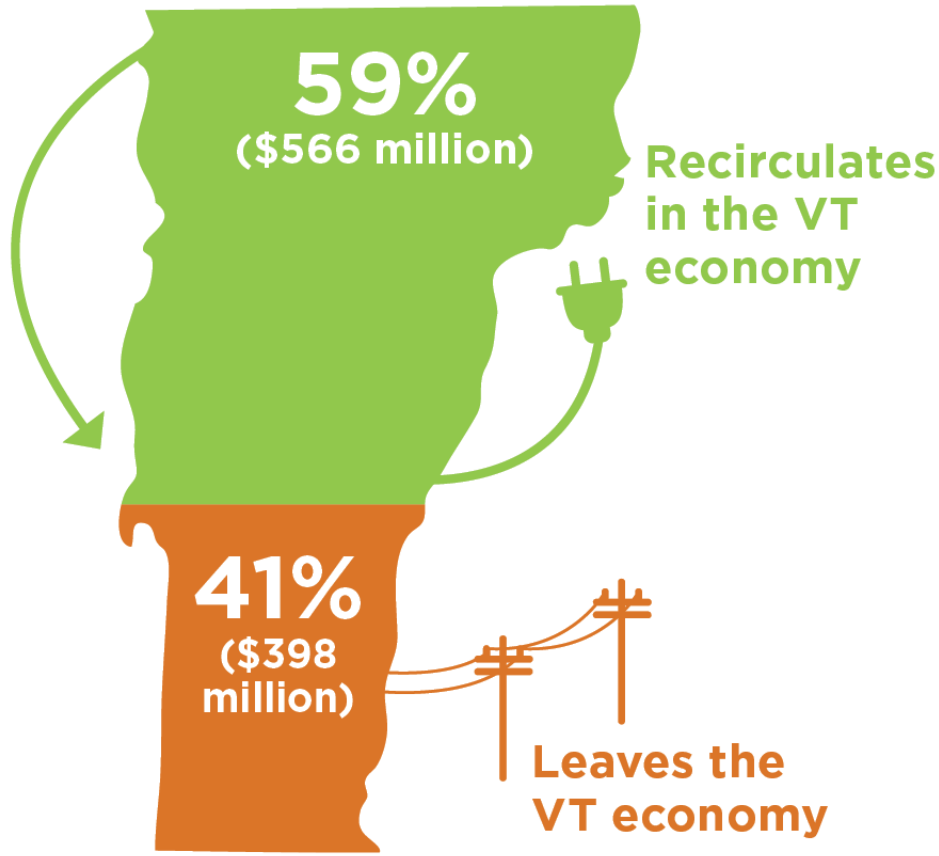
VT average annual fossil fuel spending



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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Four Features of Fossil Fuels

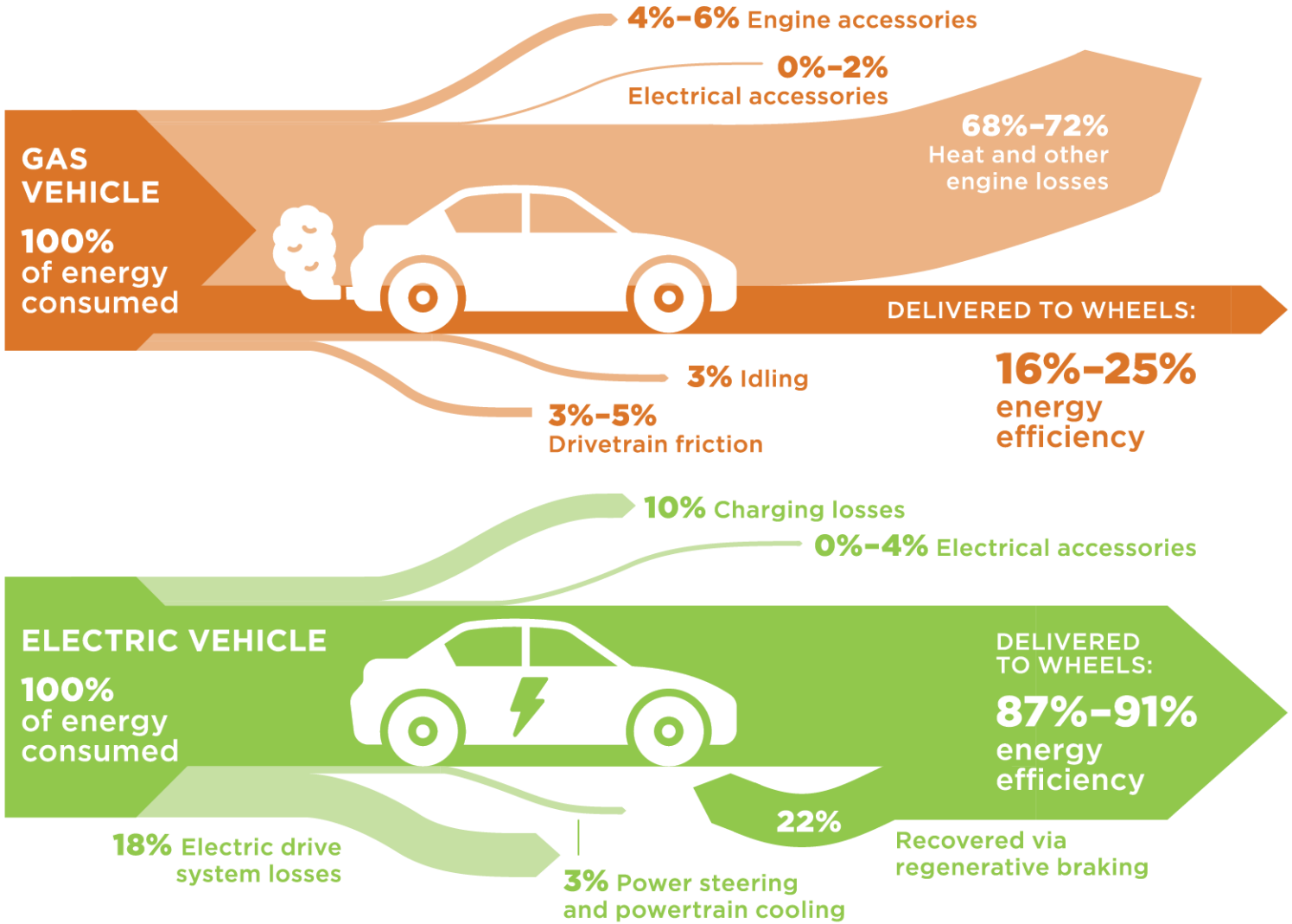
1) Expensive

2) Price-volatile

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

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

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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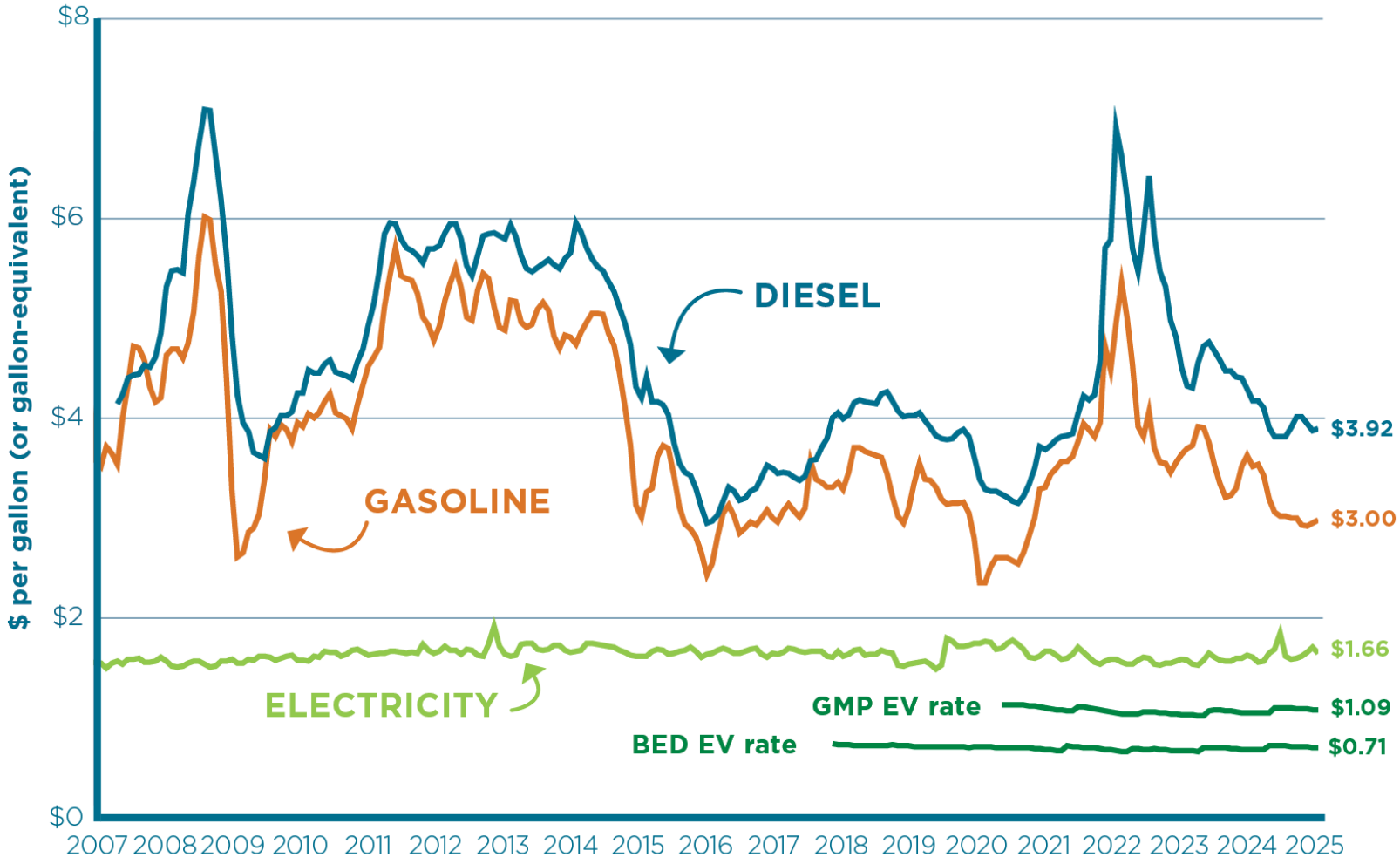
Cost comparison of different transportation fuels over time in VT



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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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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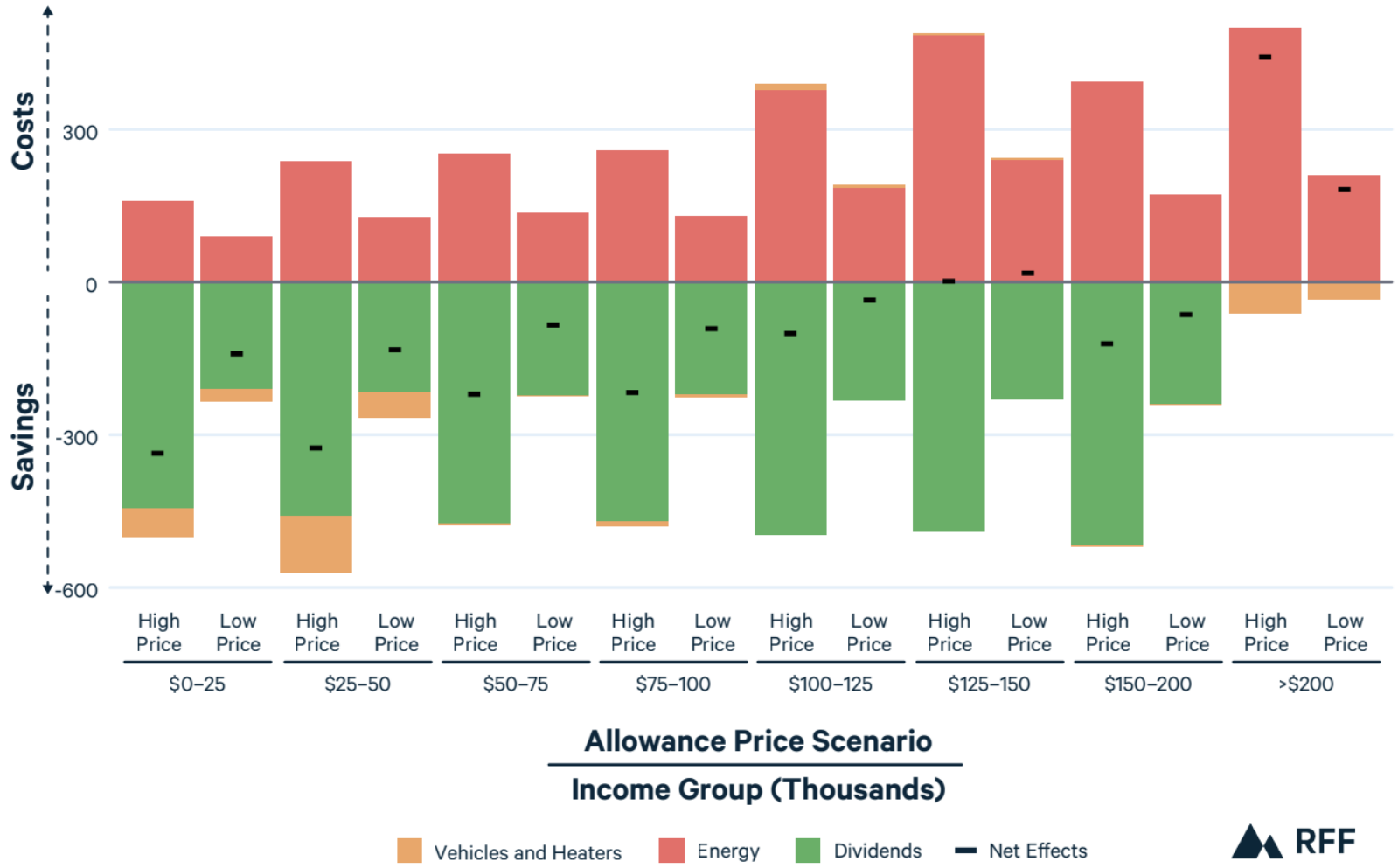
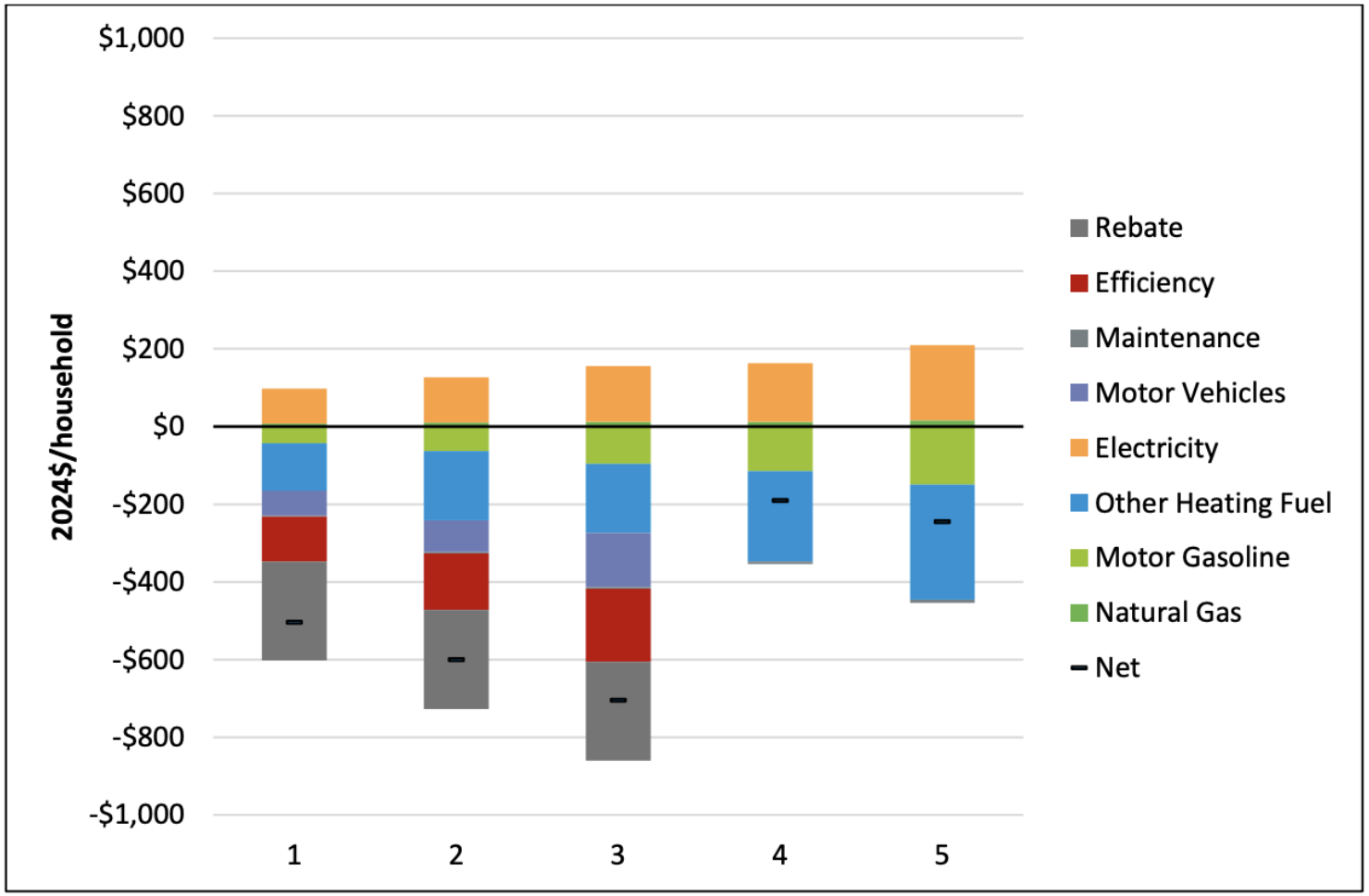
Analysis of New York Cap & Invest (NYCI)

Figure 4. Annual Costs and Savings with Targeted Dividends, by Income Group, 2030



Analysis of Cap-and-Invest for Vermont

Figure 4-11 Household Expenditure Change by Income Quintile



Note: Figure shows results in 2030 with 50 percent reinvestment of proceeds in emissions-reducing activities; medium price scenario; coverage of transportation + thermal sectors; targeting of rebates and incentives to lower three income quintiles. Individual households will see different cost changes depending upon their specific fuel mix and consumption level.