

## **Jared Duval, Vermont Climate Council Member**

- Appointed by the Senate Committee on Committees to represent a Vermont based organization with expertise in energy and data analysis
- Co-Chair, Science & Data subcommittee
- Member, Cross-Sector Mitigation subcommittee
- Member, Council Steering Committee

# Climate Action Plan (CAP) Transportation Pathways

- Electrification - Light Duty
- Electrification - Heavy Duty
- Lower the carbon intensity of fuels/fuel switching
- Increase vehicle efficiency
- Reduce Vehicle Miles Traveled (VMT)
- Administration, coordination and implementation of programs, plans, and policies

# Comparing Relative Costs or **Savings** of Carbon Reduction Measures (PSD)

Measure Cost Type	Measure	Lifetime Net Resource Cost	Lifetime Avoided CO <sub>2</sub> (Tons)	Net Cost per Ton of CO <sub>2</sub> Saved (\$/ton)
Mixed	Electric Efficiency Portfolio	(\$61)	0.04	(\$1,429)
Incremental	Plug-in Hybrid Electric Vehicle	(\$3,761)	25	(\$148)
Incremental	Heat Pump Water Heater	(\$1,125)	8	(\$145)
Incremental	All-Electric Vehicle	(\$692)	42	(\$17)
Full	Residential Weatherization	\$453	28	\$16
Full	Wood Pellet Stove	\$3,366	82	\$41
Full	Heat Pump (Multizone)	\$1,427	18	\$80
Full	Heat Pump (Single Zone)	\$1,182	14	\$88
Incremental	Wood Pellet Boiler/Furnace	\$12,767	123	\$104
Incremental	Electric Transit Bus	\$236,812	711	\$333
Full	Tier II Resource - 4.9 MW	\$617,598	1,048	\$589
Incremental	Electric School Bus	\$194,388	189	\$1,028
Full	Solar Net-metering, 150 kW	\$72,633	22	\$3,234
Full	Solar Net-metering, 5 kW	\$6,980	0.75	\$9,325



# Union of Concerned Scientists Report: Rural VT Drivers Save an Avg. of > \$1,500/year by Driving EVs

## Clean Transportation Strategies for Rural Communities in the Northeast and Mid-Atlantic States

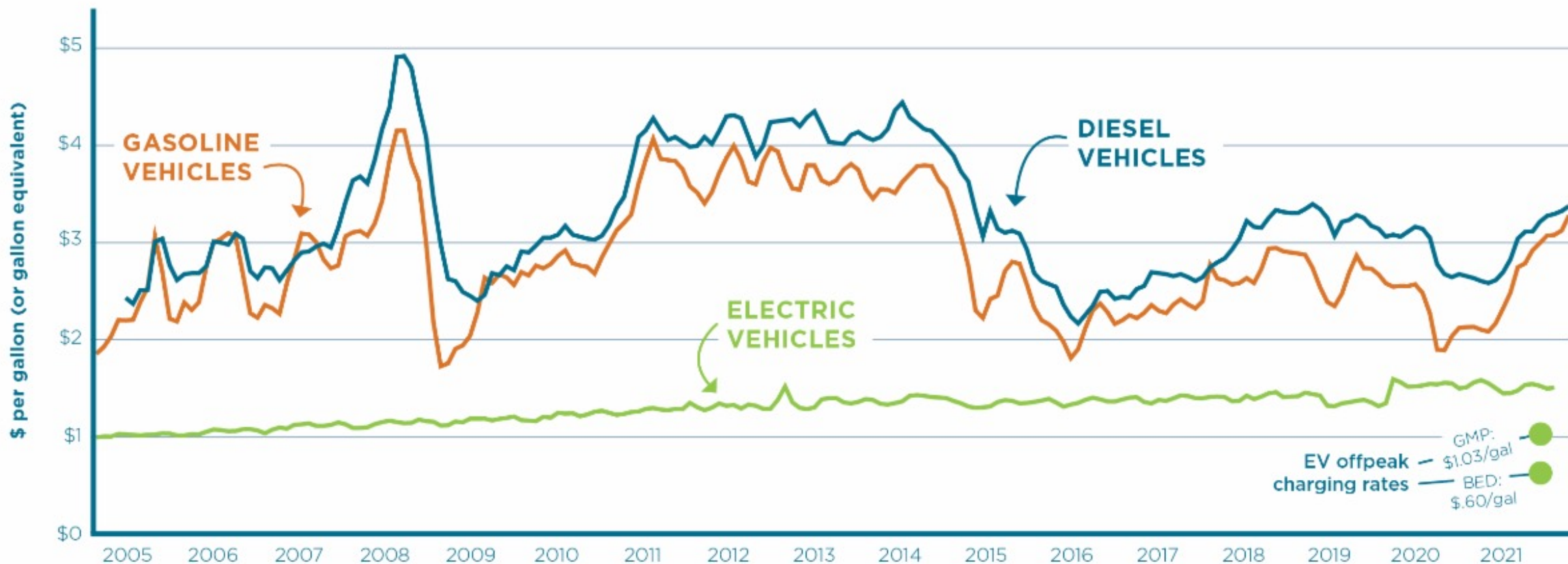
With Analysis of Maine, Vermont, Virginia, and Maryland





# VT'ers Driving Fossil Vehicles Pay High Costs and Are Exposed to Volatile Prices

## Comparison of Vermont transportation fuel costs, 2005–2021



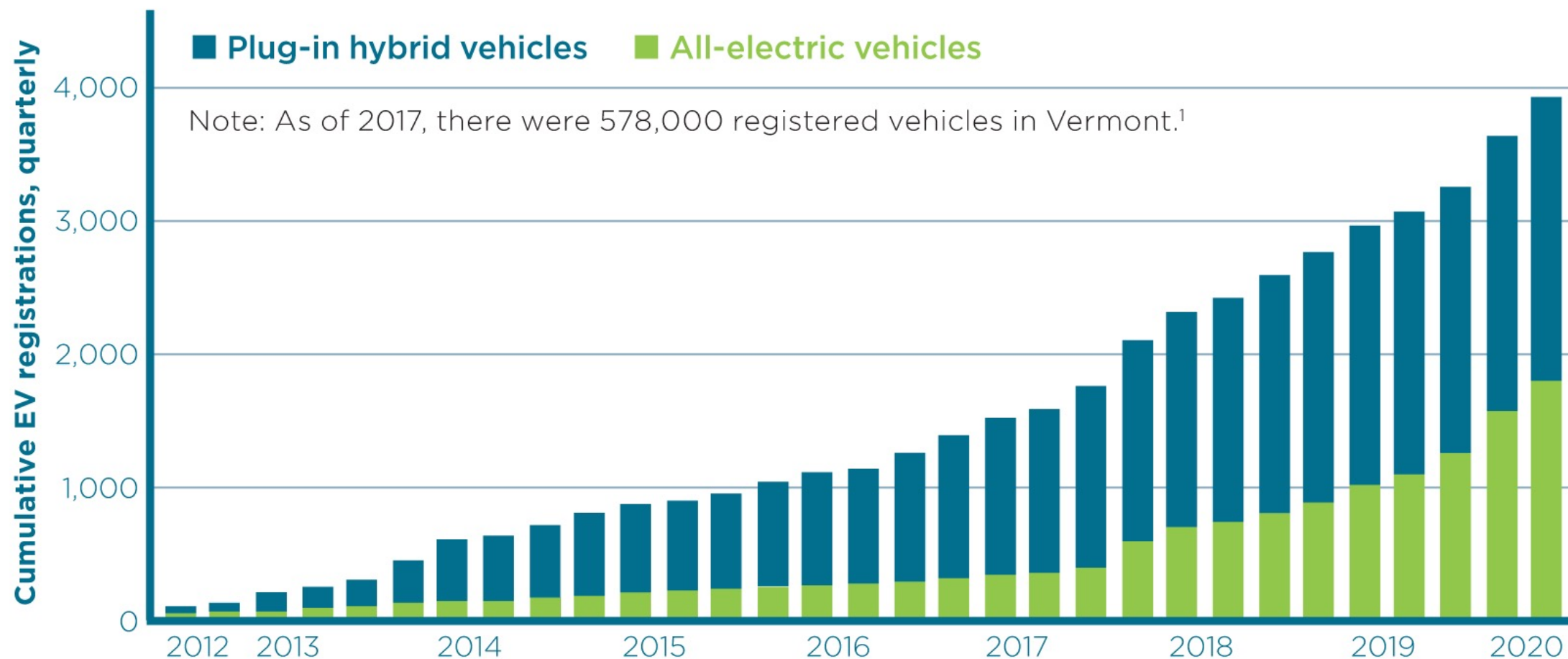
Sources: Gas and Electric – Drive Electric VT (via EIA); Diesel – Vermont Agency of Transportation (VTTrans).



# Some Key VT Transportation Statistics

- Total Vehicle Miles Traveled (VMT) in VT, 2019: **7,350,000,000**
- Total registered vehicles in VT, 2019: **580,284**
- Avg. VMT per registered vehicle in VT, 2019: **12,666**
- Avg. VT Fleet Fuel Efficiency, 2019: **23 miles per gallon (MPG)**
- Avg. Gallons/VT vehicle per year, 2019: **551**
- Avg. Annual Vehicle Fuel Cost @ \$3/gallon: **\$1,653**
- Avg. Annual Vehicle Fuel Cost @ \$4/gallon: **\$2,204**
- Avg. GHG emissions per VT vehicle/ year, 2019: **4.9 metric tons** (note: VT GHG emissions in 2018 were 13.84 tons of CO<sub>2</sub>e per capita)

# Vermont electric vehicle registrations



**Source:** Registration values based on Vermont Department of Motor Vehicles registration data; processed by VEIC 2012-2013; processed by Vermont Agency of Natural Resources 2014-present; July 2020 from Drive Electric VT.

**1.** Vermont Agency of Transportation, The Vermont Transportation Energy Profile, 2019.



# Important Climate Action Plan (CAP) Recommendations to Move Forward

## **Addressing the biggest barriers to greater EV adoption by:**

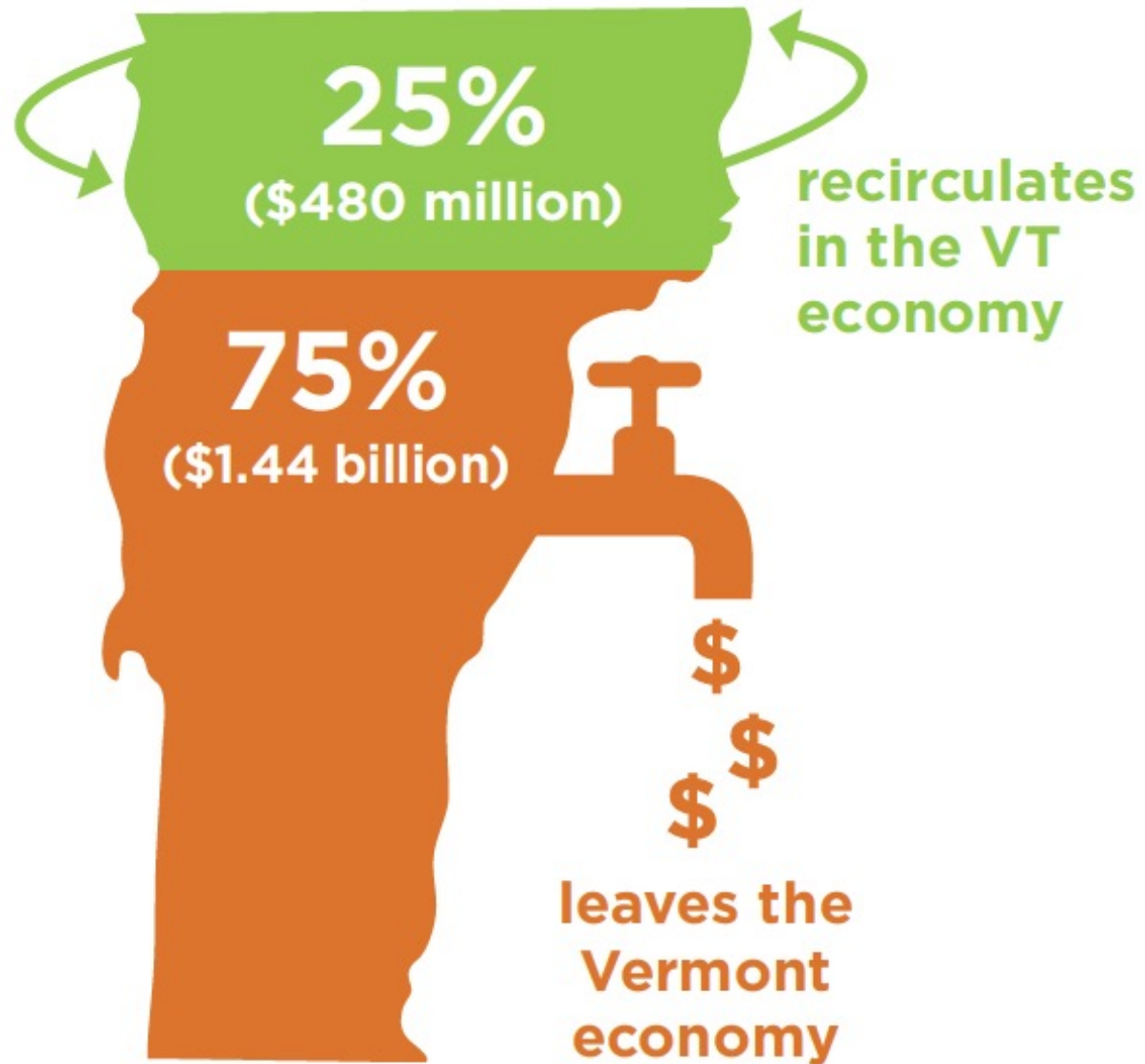
- Expanding charging infrastructure (EVSE), especially DC fast charging in underserved areas and Level 2 charging in multi-family buildings (16% of VT housing).
- EV Incentives for Low- and Moderate-Income Vermonters, including the State Incentive program and Replace Your Ride
- Incentives for EVs and/or more fuel-efficient used vehicles via Mileage Smart

## **Incentivizing Clean & Efficient Vehicles, Disincentivizing Inefficient New Vehicles, and Reflecting the True Cost of Pollution:**

- **Vehicle Efficiency Price Adjustment** (aka True Cost Pricing for new vehicles) (CAP Pathway 1, Strategy 2c)
- Unpaid social cost of avg. fossil vehicle > \$5,000



# Average annual fossil fuel spending in VT, 2009–2018



# Recommendation: Invest Wisely Now, Prepare for Major Policy and Regulatory Focus Next Year

- Unlike the electricity sector (Renewable Energy Standard (RES)) and, hopefully soon, the thermal sector (Clean Heat Standard (CHS)), **Vermont's transportation sector—our most polluting sector—lacks a primary policy or regulatory framework to ensure emissions reduction requirements are met and met equitably.**
- The **Transportation and Climate Initiative Program (TCI-P)** was going to be this framework, until it fell apart days before the Climate Action Plan (CAP) was finalized.
- The Climate Council is currently assessing alternate options to recommend, including a **Clean Transportation Standard** and/or the **Western Climate Initiative.**
- For the CAP to add up and for the Global Warming Solutions Act (GWSA) requirements to be met, **our forthcoming recommendation will almost certainly have to be taken up, considered, and acted on next session.**