

Jared Duval

Member, Vermont Climate Council

Co-Chair, Science & Data Subcommittee

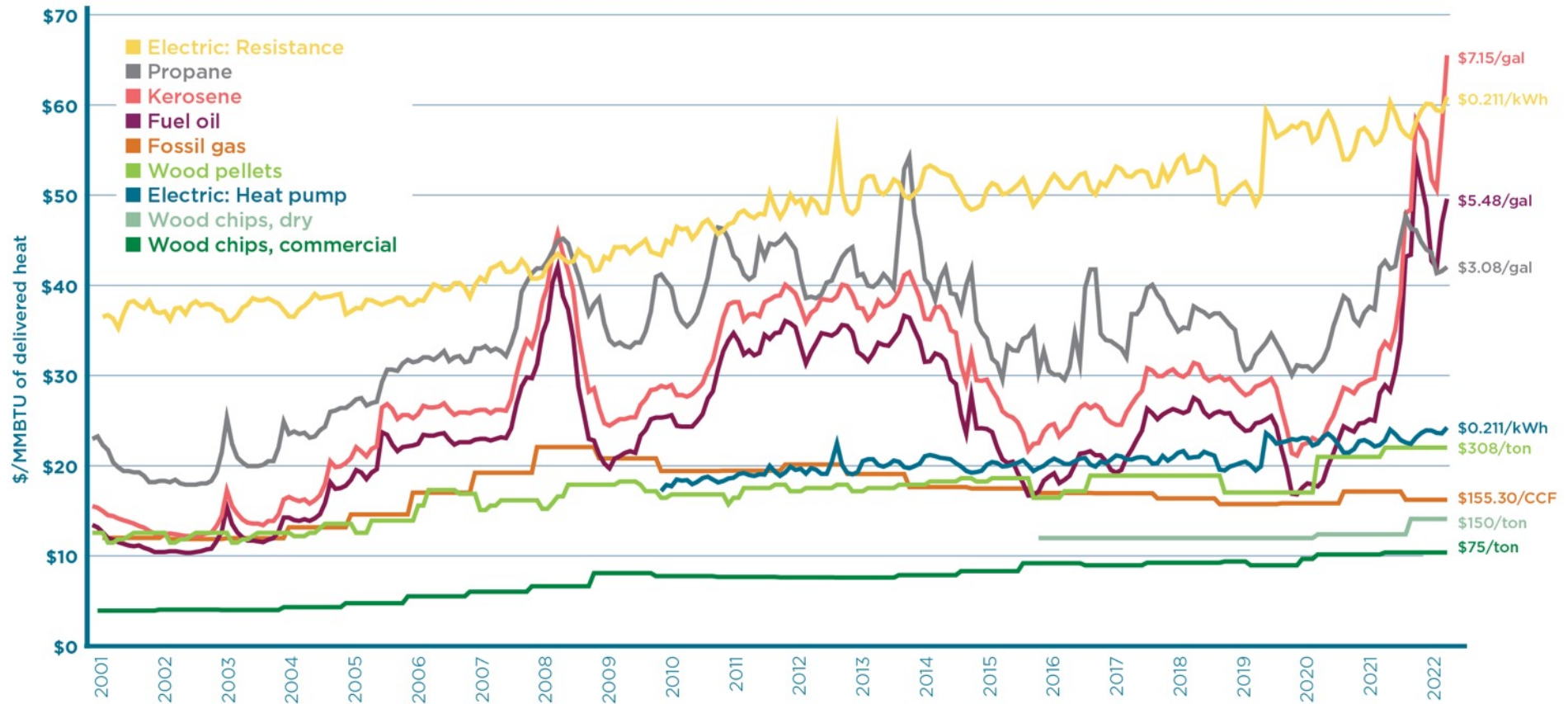
Member, Cross-Sector Mitigation Subcommittee

Member, Council Steering Committee

Testimony to Senate Natural Resources & Energy Committee,
January 19, 2023

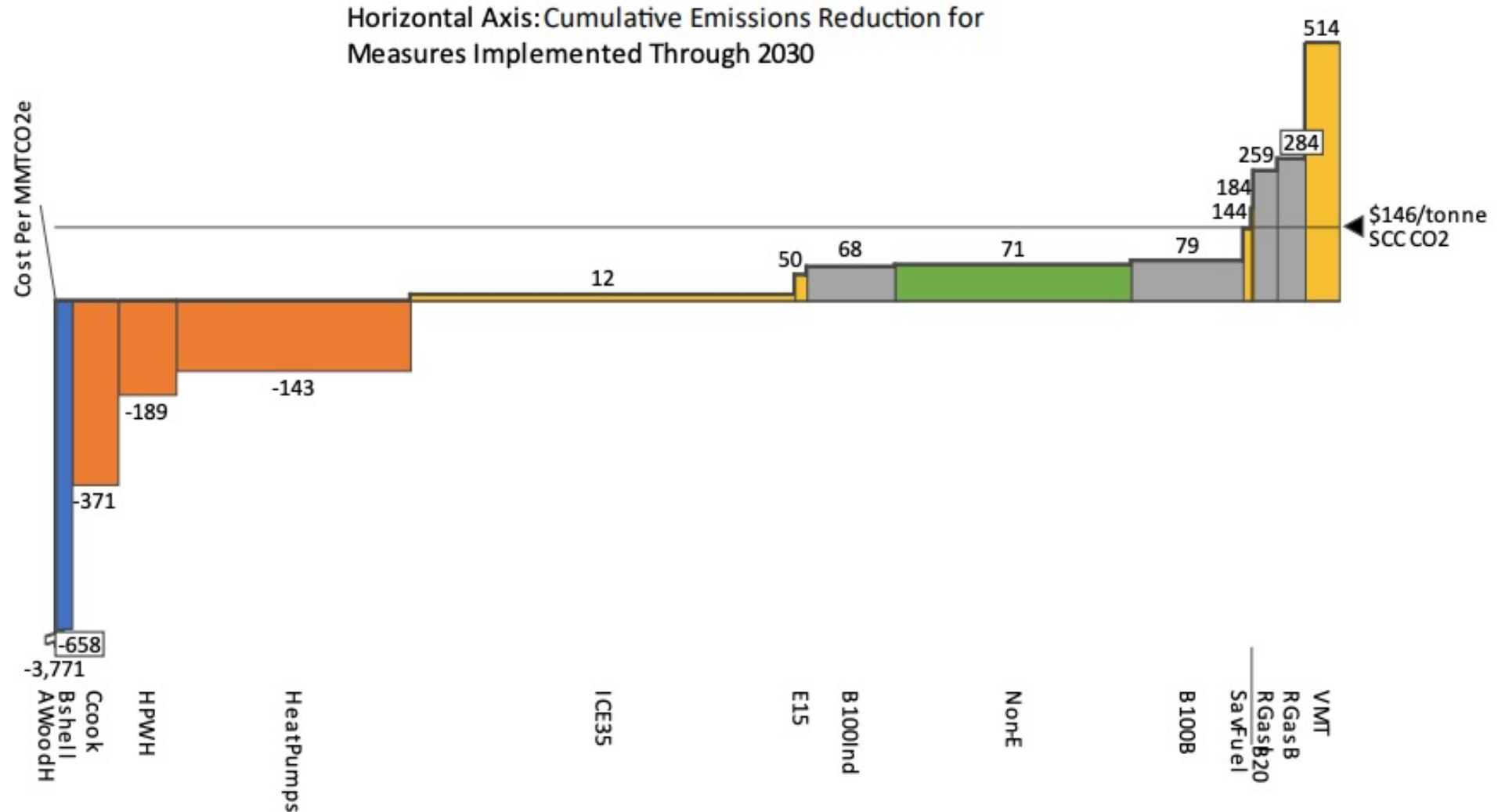
1. AHA Will Reduce Overall Heating Costs (Help VTers Get Off the Fossil Roller Coaster)

Cost comparison of different heating fuel options over time



Sources: Fuel Oil, Propane, Kerosene, Wood Pellets: VT Department of Public Service, Fuel Price Report, 2021. Fossil Gas, Electricity: EIA, 2021. Wood Chips: Biomass Energy Research Center, 2021. Note 1: Electricity prices presented here are a statewide average. Electricity prices vary by utility territory. Note 2: The reason propane can be more expensive per MMBTU than fuel oil but less expensive on a per gallon basis is because propane has a lower energy content per gallon. Propane's energy content is only 66% that of fuel oil, by gallon (EIA).

2. Maximize Savings As Soon As Possible (\$2 billion total/ \$7,500/household from actions through 2030)





3. The #1 Pollution Reduction Policy Recommendation in the Climate Action Plan Adopted by the VT Climate Council

1. Clean Heat Standard

- Expected share of total emissions reduction requirement by 2030: **34%**
- Status: **Not yet adopted**. (Vetoed by Governor, 1 House vote short of override in 2021).

2. Advanced Clean Cars II and Advanced Clean Trucks rules

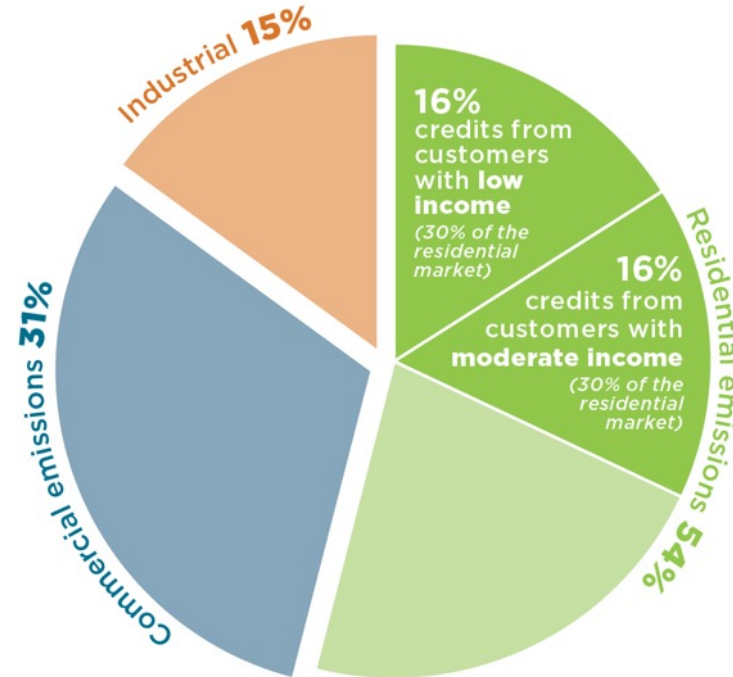
- Expected share of total emissions reduction requirement by 2030: **14%**
- Status: **Adopted**. (Proposed by Agency of Natural Resources; approved by Legislative Committee on Administrative Rules; adopted as of Dec.16th, 2022).

3. Transportation and Climate Initiative Program (TCI-P)

- Expected share of total emissions reduction requirement by 2030: Approx. **10%**
- Status: **Stalled** ("regional viability", or at least 3 participating states moving forward to implement the program, no longer exists since the decisions of CT, RI, and MA to withdraw from TCI-P in late 2021. Future uncertain).

4. A Progressive Distribution of Clean Heat Credits & Services: How 16+16=60

VT thermal sector GHG emissions and Clean Heat Credit requirements

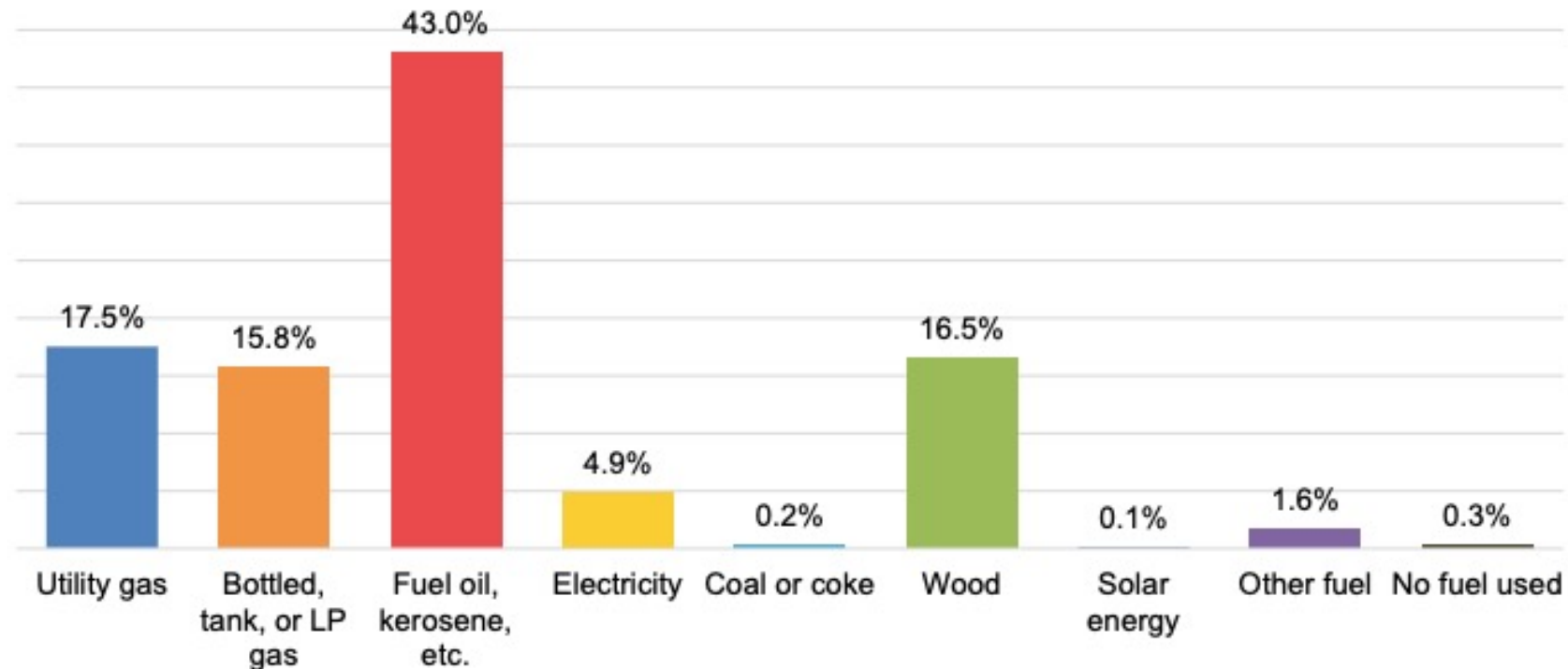


Sources: Vermont Agency of Natural Resources, Vermont Greenhouse Gas Emissions Inventory and Forecast (1990-2017), 2021; and S.5, the Affordable Heat Act, §8124 (d) (2).

5. Why a (limited) allowance of biofuels is necessary in the near to medium term

Home fuels

Figure 3-17: Vermont homes by primary heating fuel



Source: U.S. Census Bureau: American Community Survey 5-year estimates, 2013-2017 (Table B25040) from [housingdata.org](https://www.housingdata.org).

5. Why a (limited) allowance of biofuels is necessary in the near to medium term

The Vermont Transportation Energy Profile — 2021

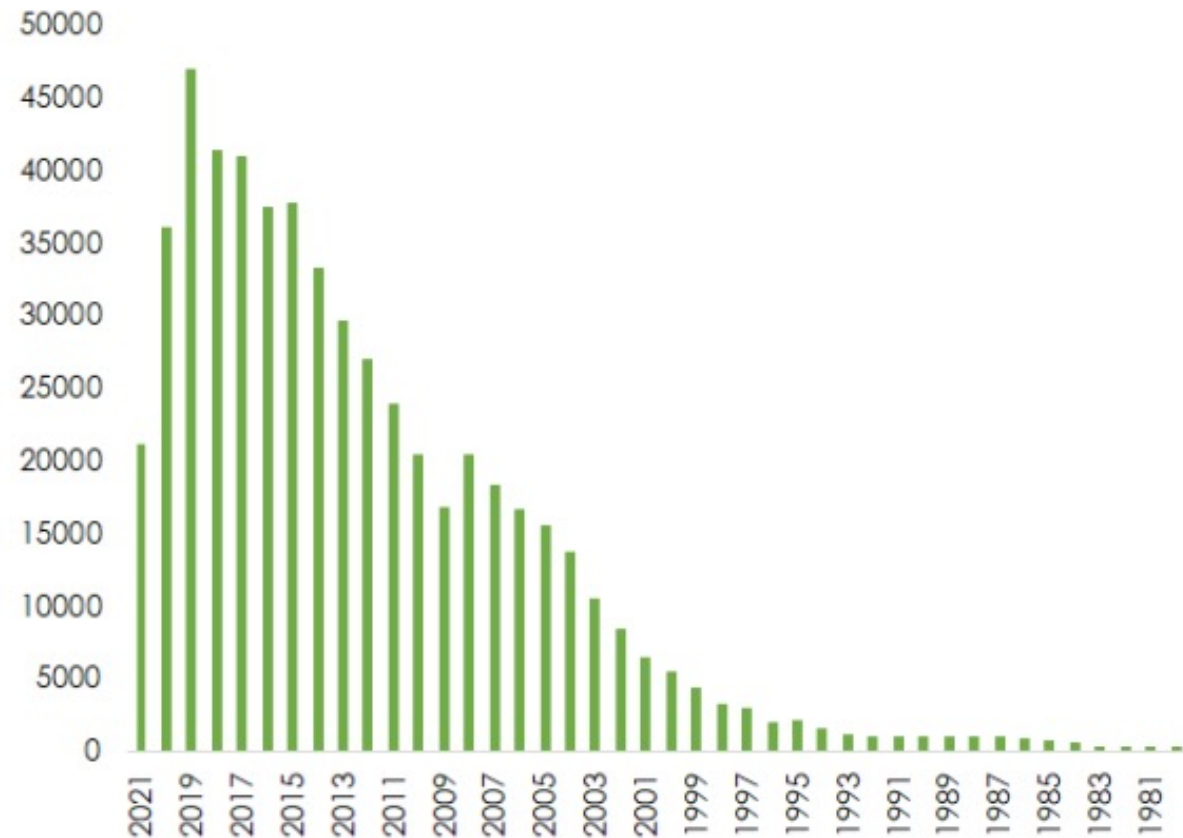
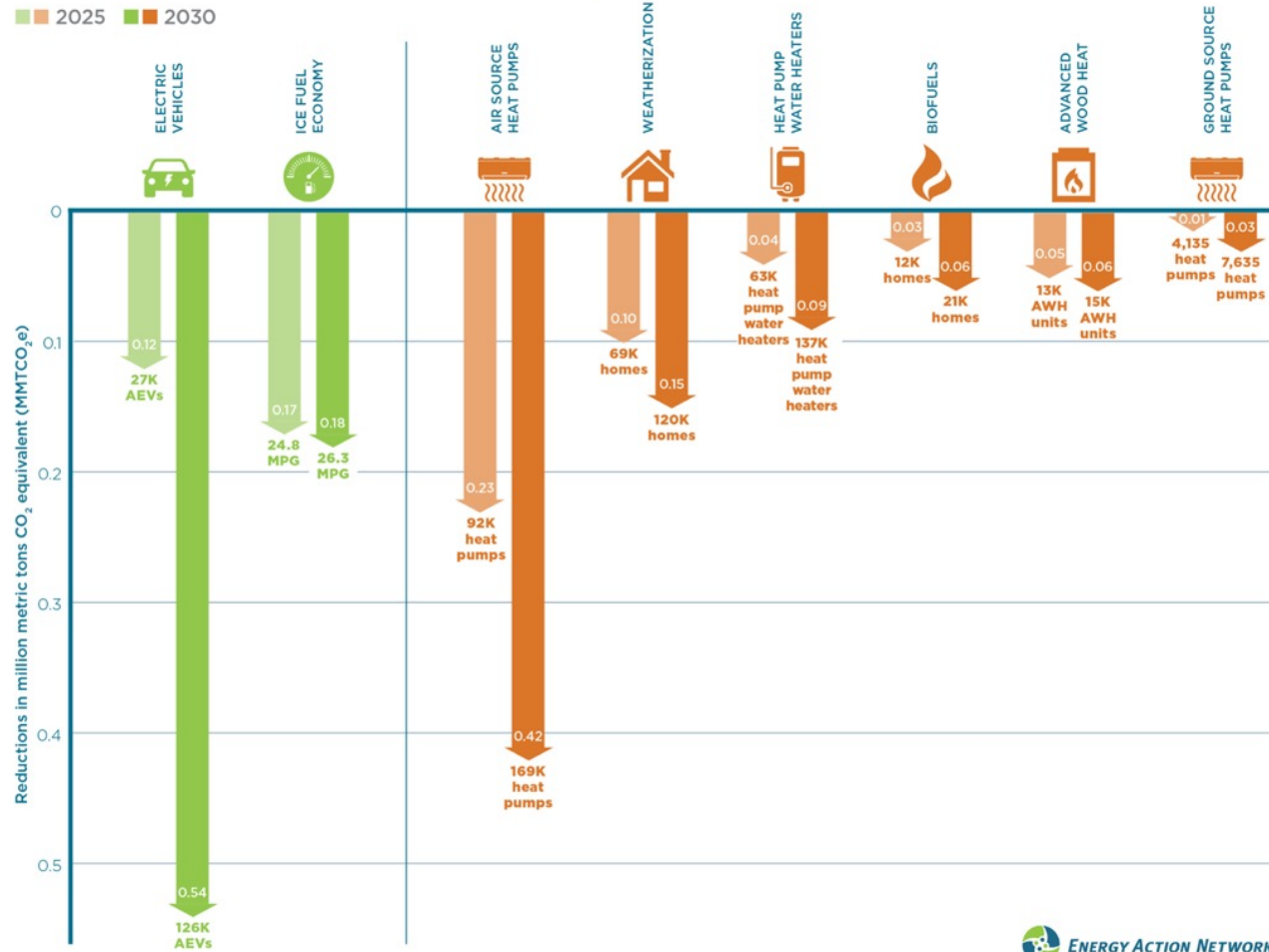


Figure 3-5. Distribution of Model Years for Vehicles in Vermont, end of June 2021 (VDMV, 2021)

5. Why a (limited) Allowance of Biofuels is Necessary in the Near to Medium Term

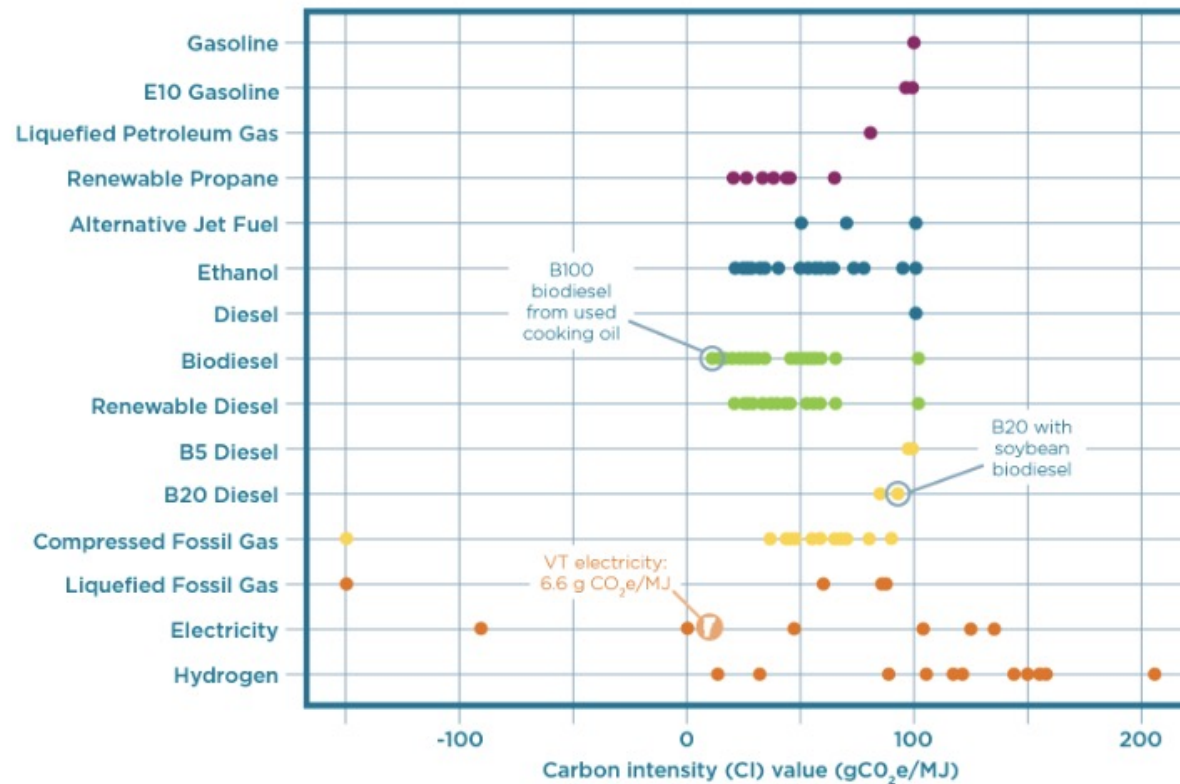
Pathways emissions reductions, 2025 and 2030



Source: Cadmus/EFG, Vermont Pathways Analysis Report 2.0, 2022; EAN Emissions Reduction Pathways Model, 2021 Note: While these Pathways account for a significant proportion of the required reductions, there are still necessary reductions that will need to come from other pathways in the transportation and thermal sectors, as well as from other non-energy sectors. These other reductions total to be roughly 0.45 MMT CO₂e in 2025, and 1.85 MMT CO₂e in 2030.

Biofuels are *not* all the same

Carbon intensity values of different transportation fuels: Oregon clean fuels program



Source: Department of Environmental Quality : Fuel Pathways - Carbon Intensity Values : Oregon Clean Fuels Program : State of Oregon. The carbon intensity values for the program are expressed in grams of carbon dioxide equivalent per megajoule of energy (gCO₂e/MJ). VT electricity carbon intensity figure is added by EAN and based on 2019 data from ANR of 15 lbs/MMBTU or 52 lbs/MWh.