



ENERGY
EMISSIONS
ECONOMY
EQUITY

2019 ANNUAL PROGRESS REPORT
for VERMONT

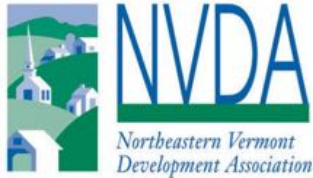
Energy Action Network Members

Over 100 Network Members

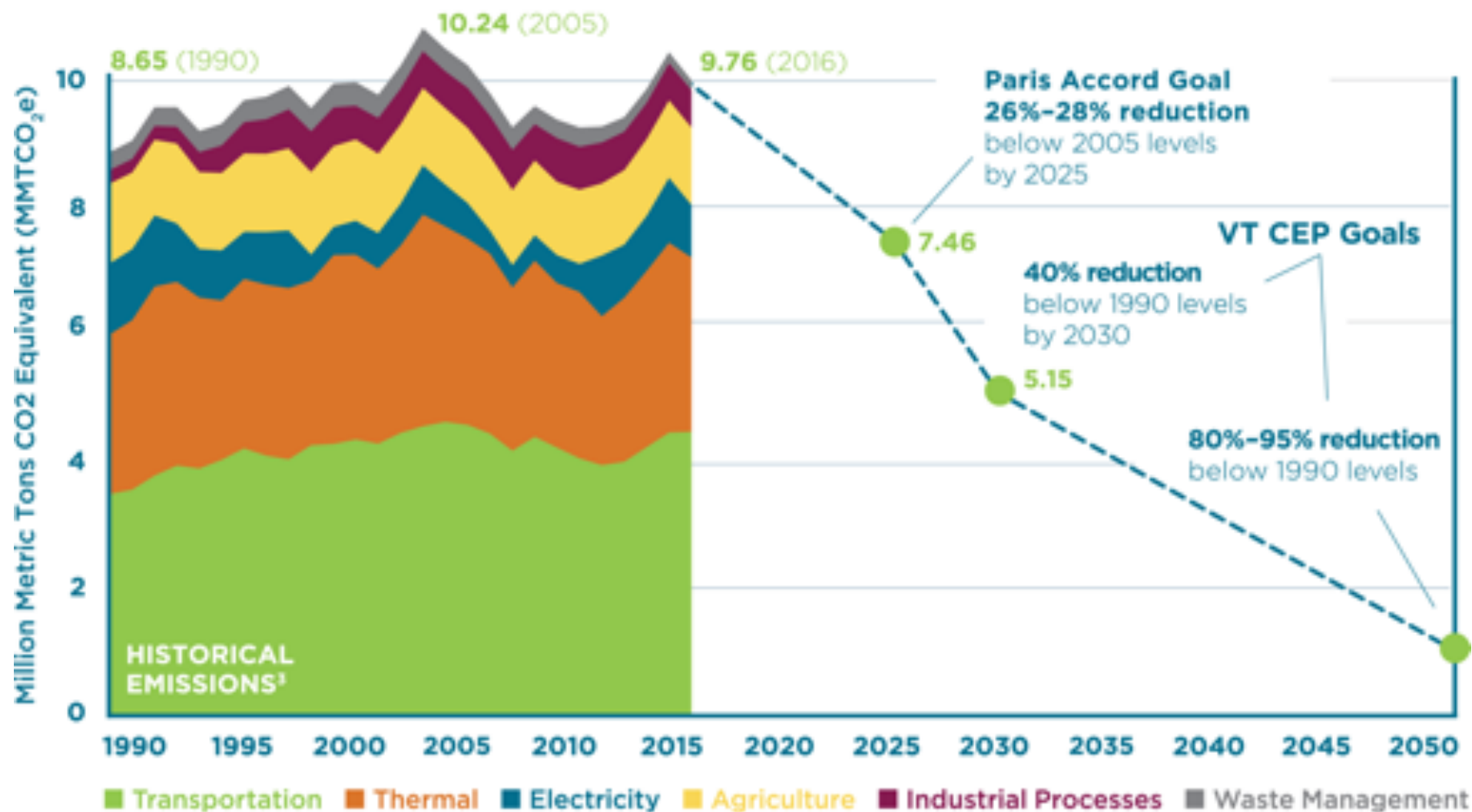


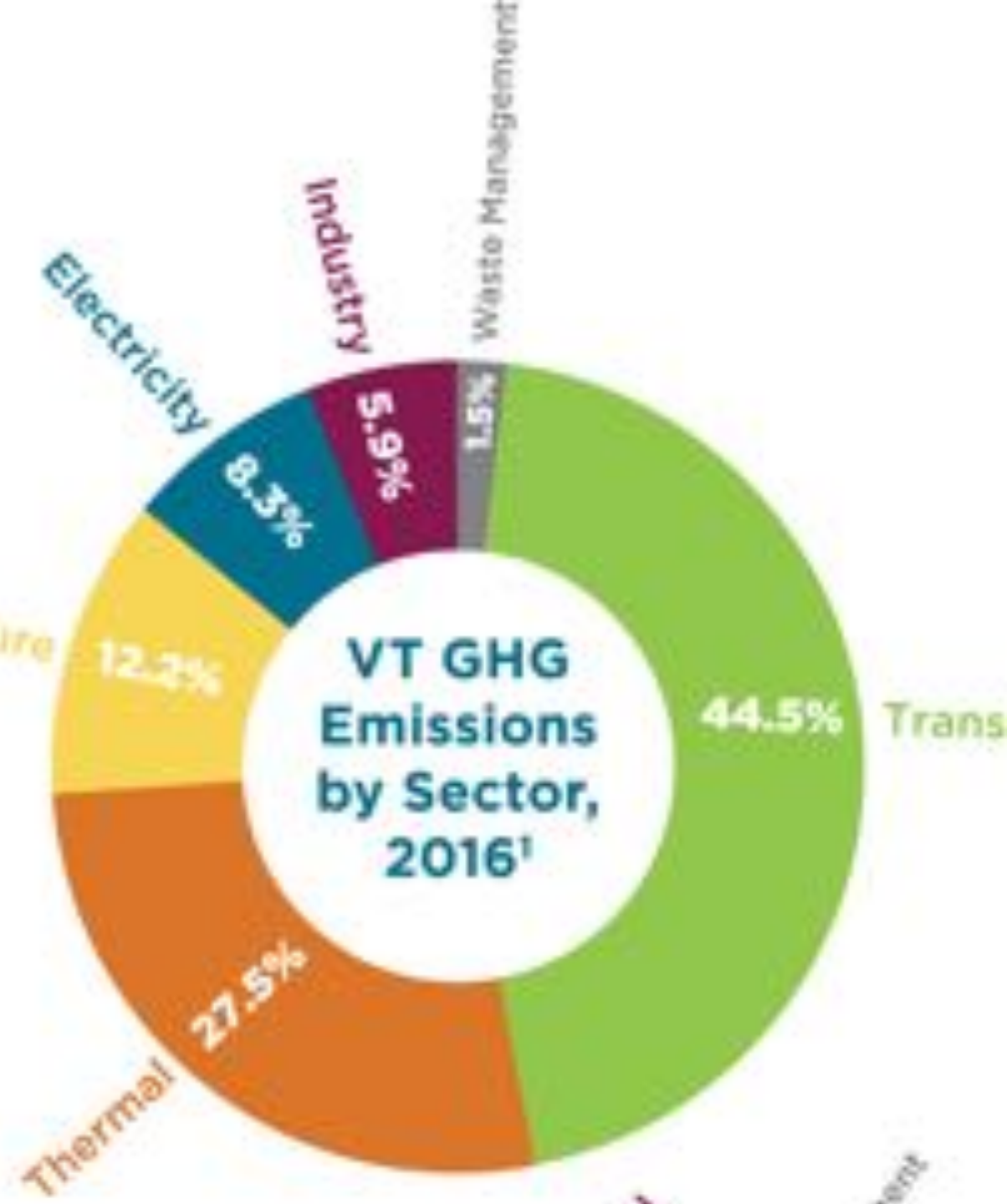
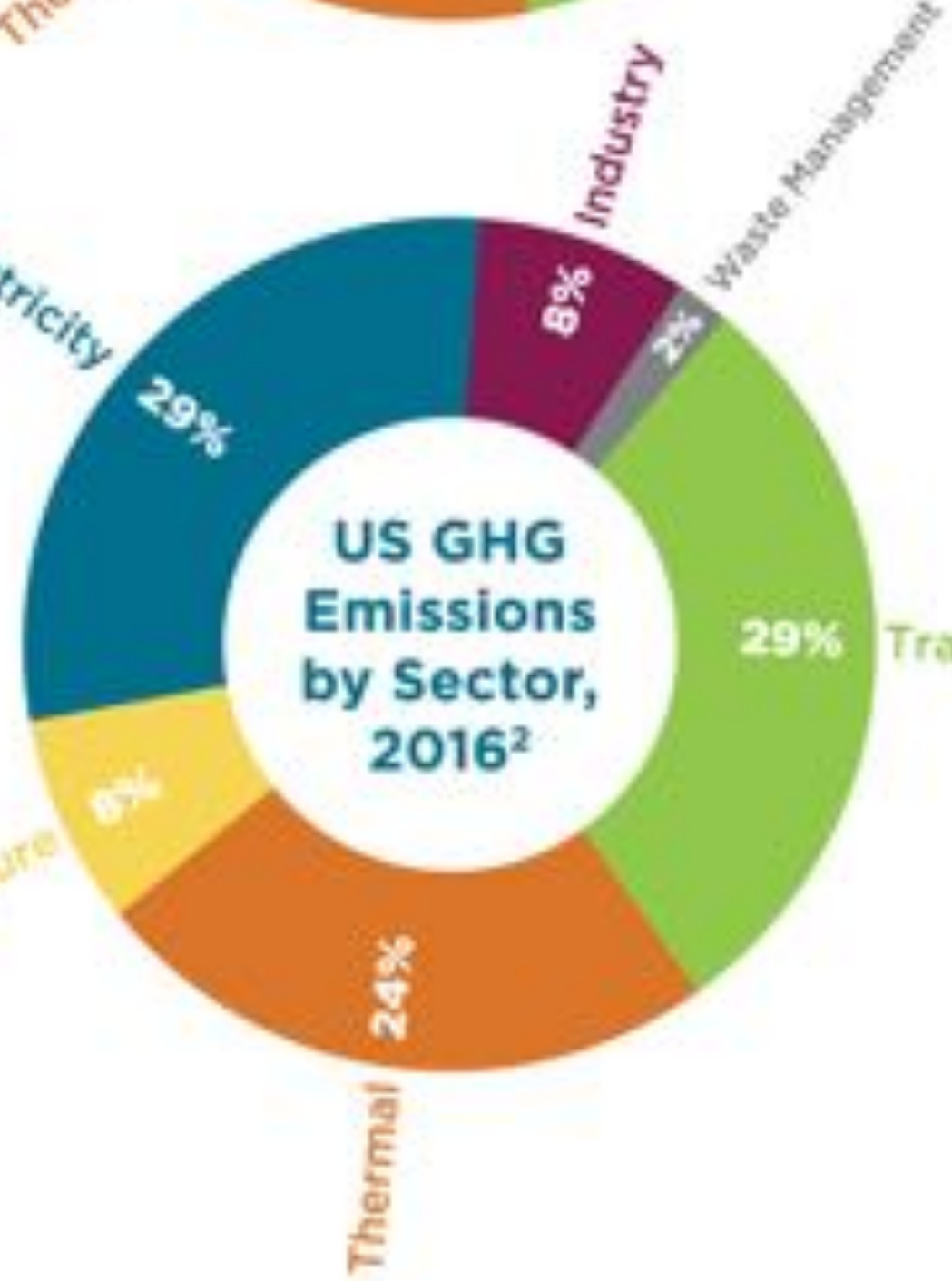
Energy Action Network Public Partners

Over 100 Public Partners

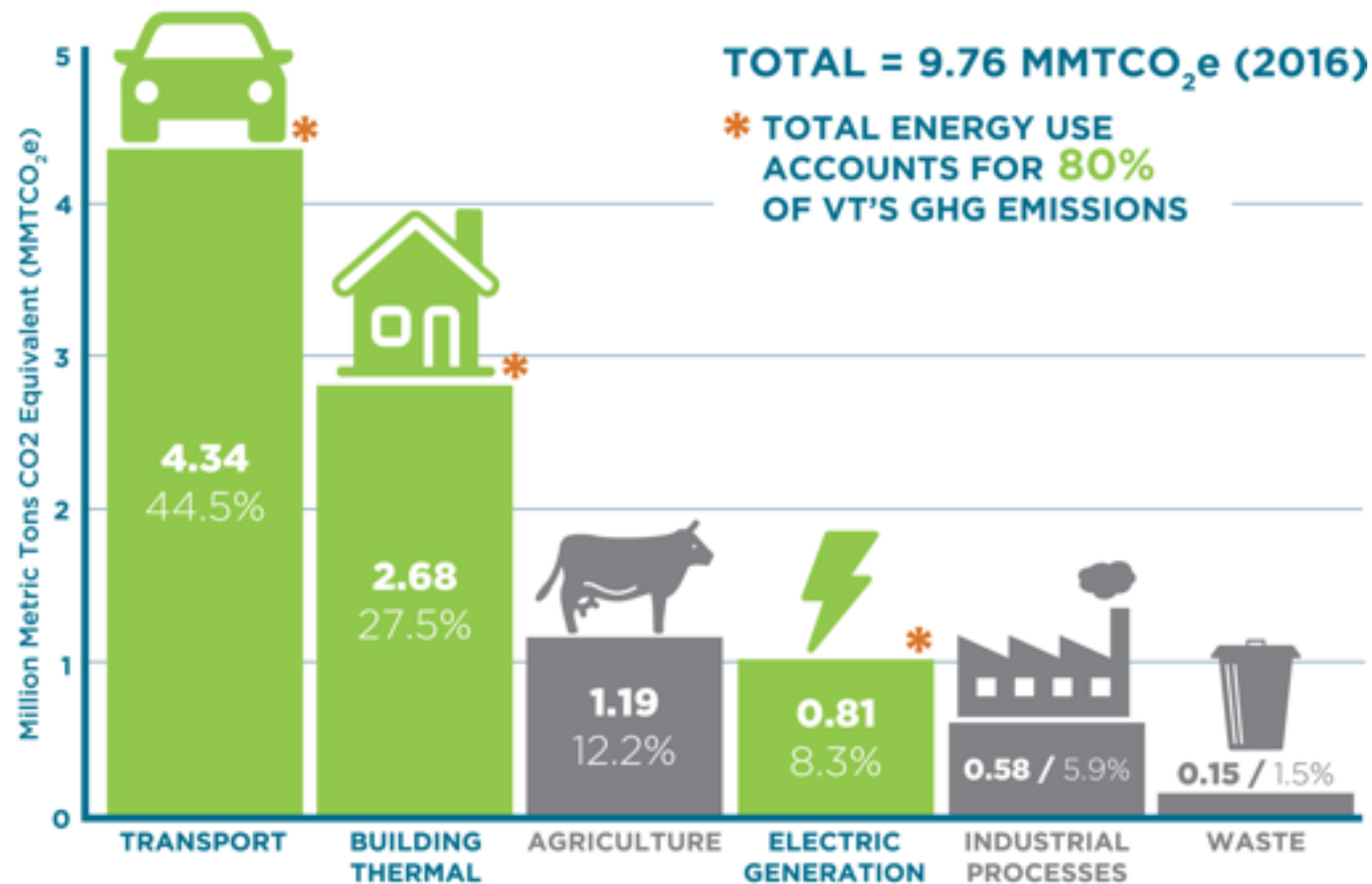


Now is the time for rapid emissions reductions beyond the electricity generation sector





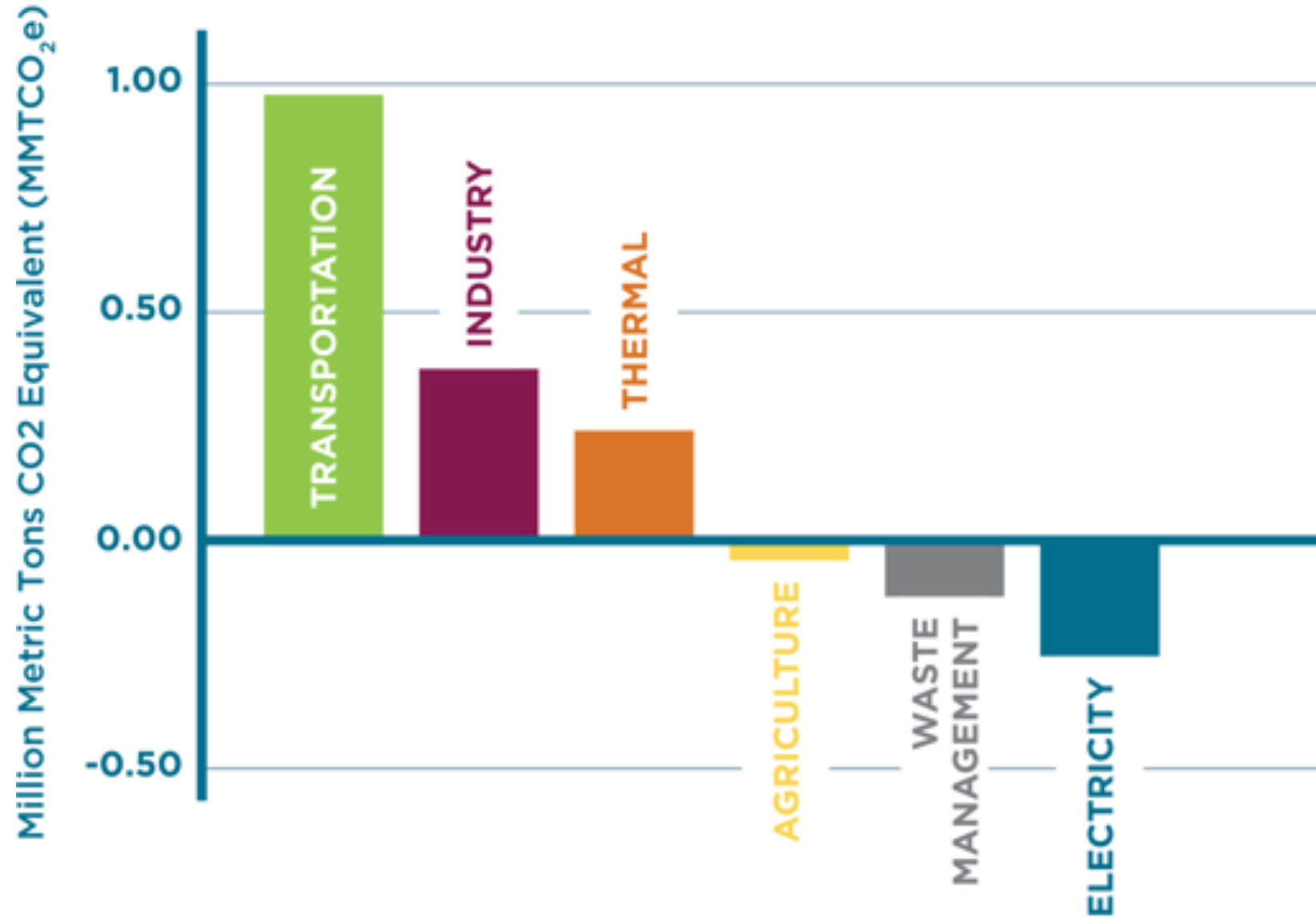
Vermont's GHG emissions by sector



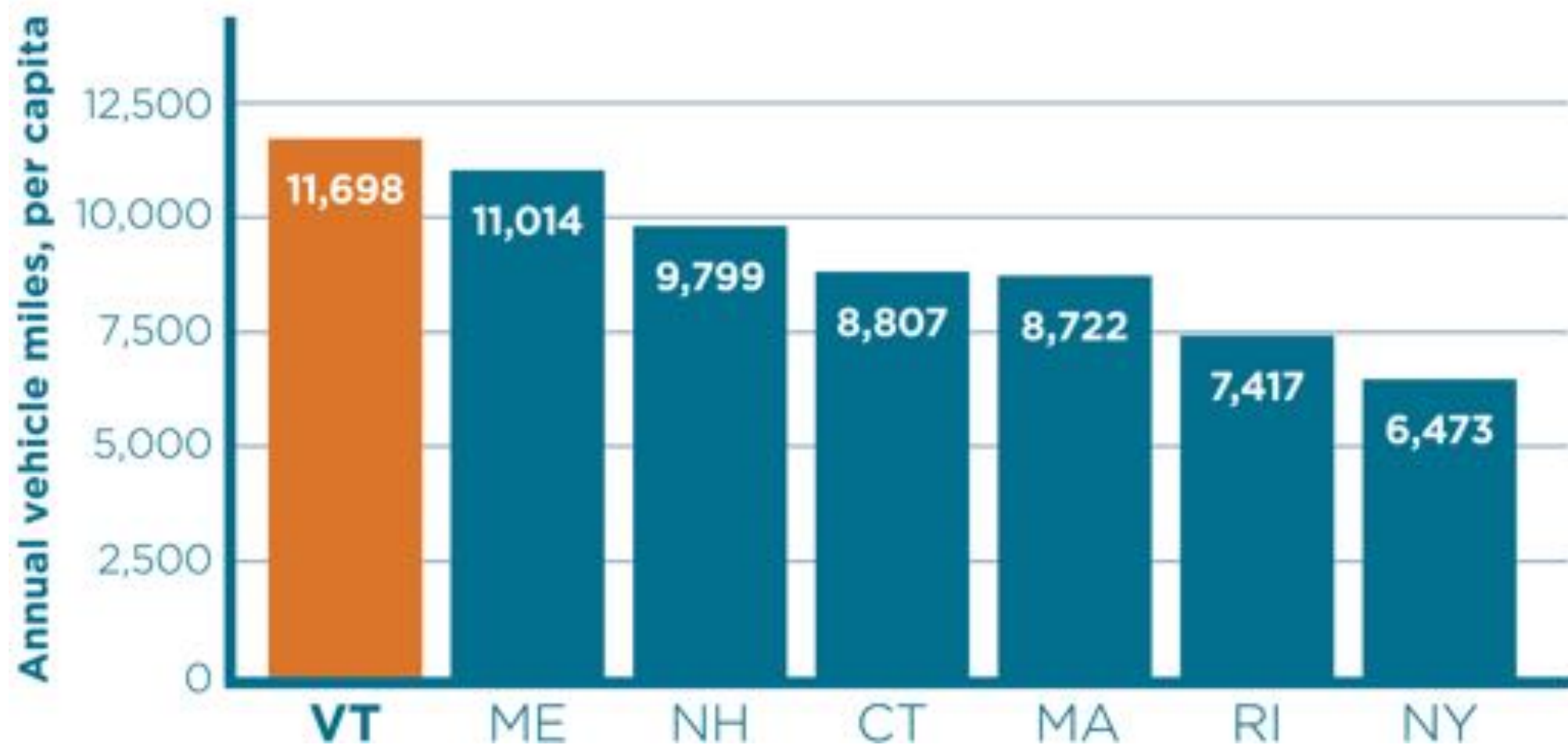
GHG emissions from the electricity sector, consumption based



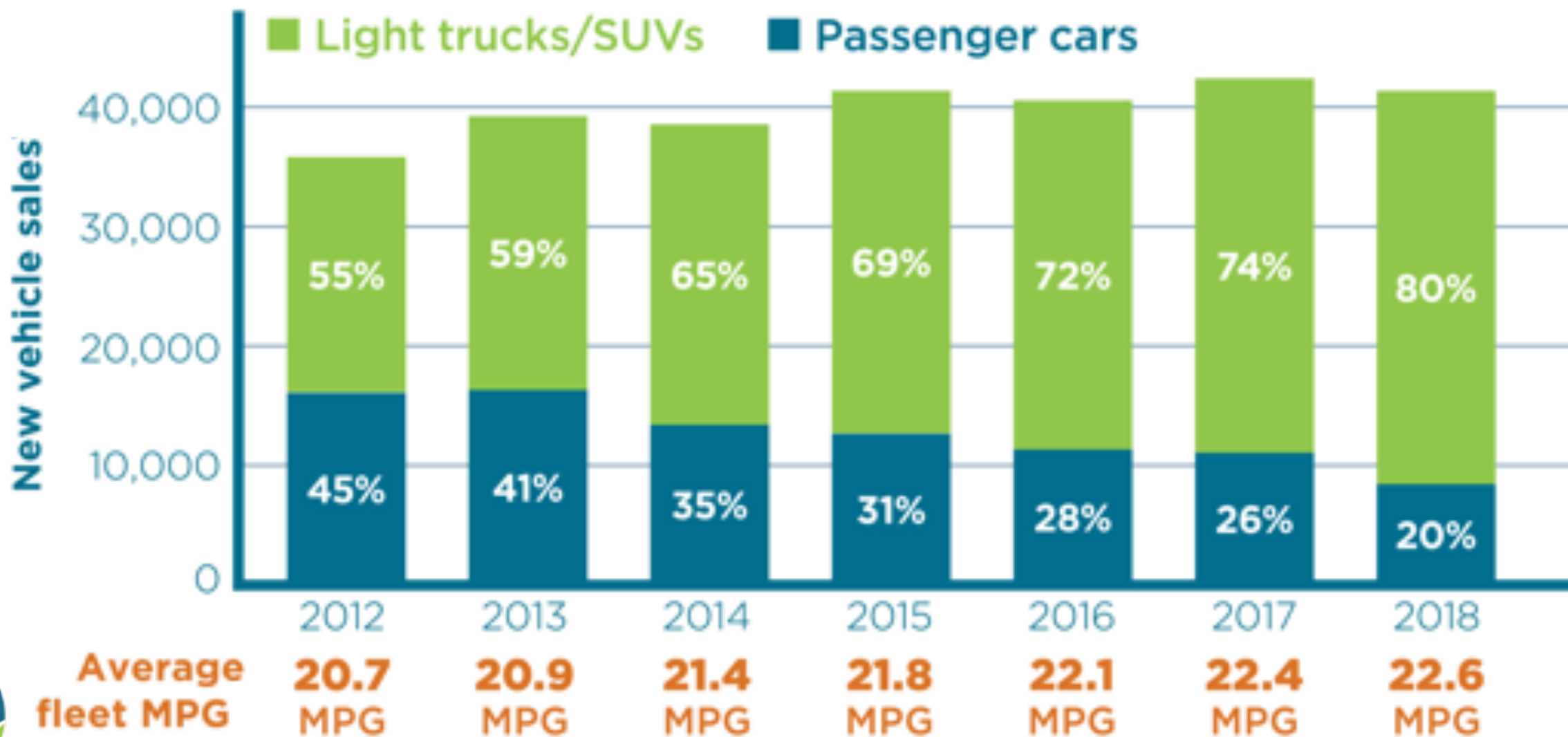
Total net change in VT GHG emissions, 1990 vs 2016: 1.11 MMTCO₂e



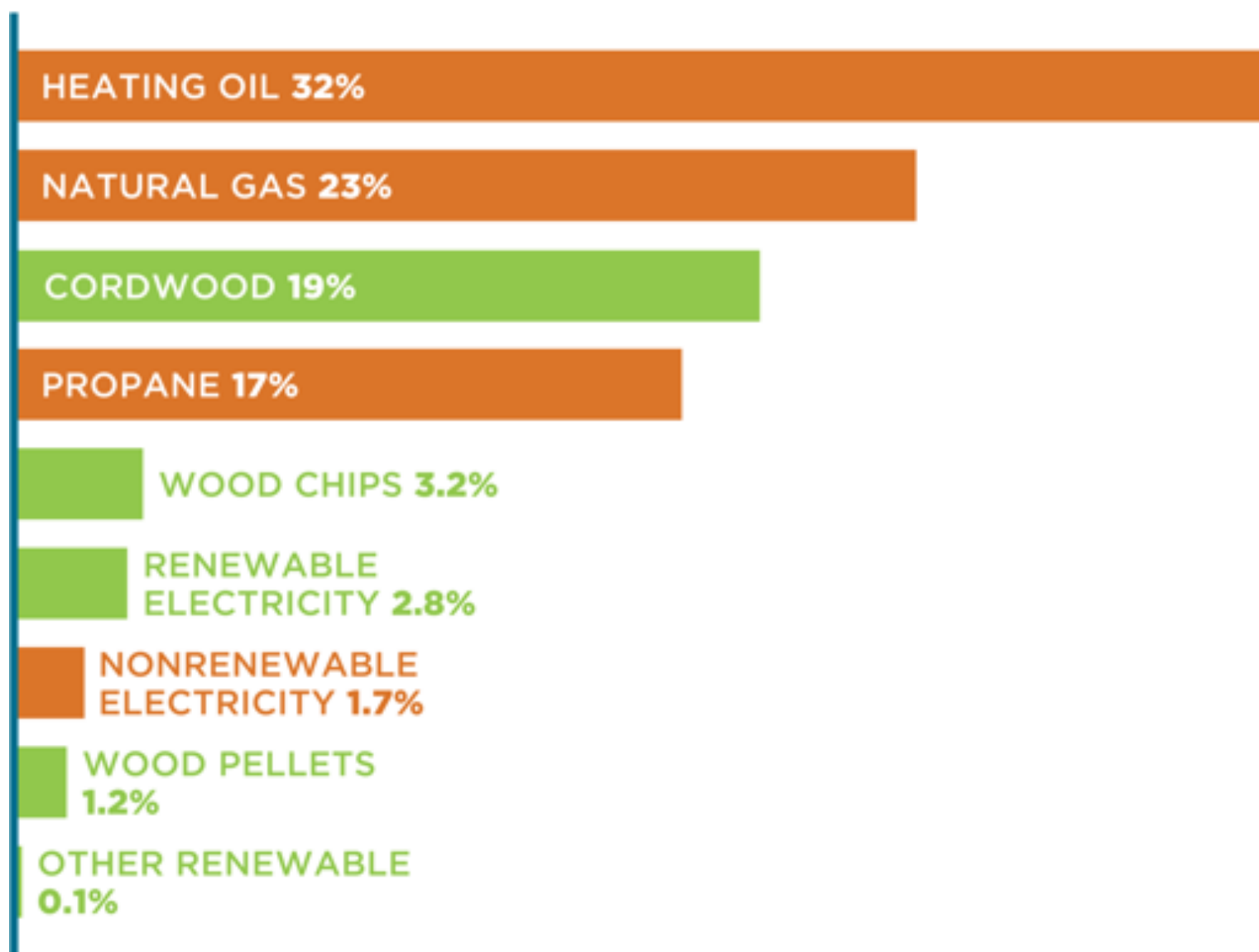
Vehicle miles traveled per capita, 2015



As cars get more efficient, we're buying bigger cars

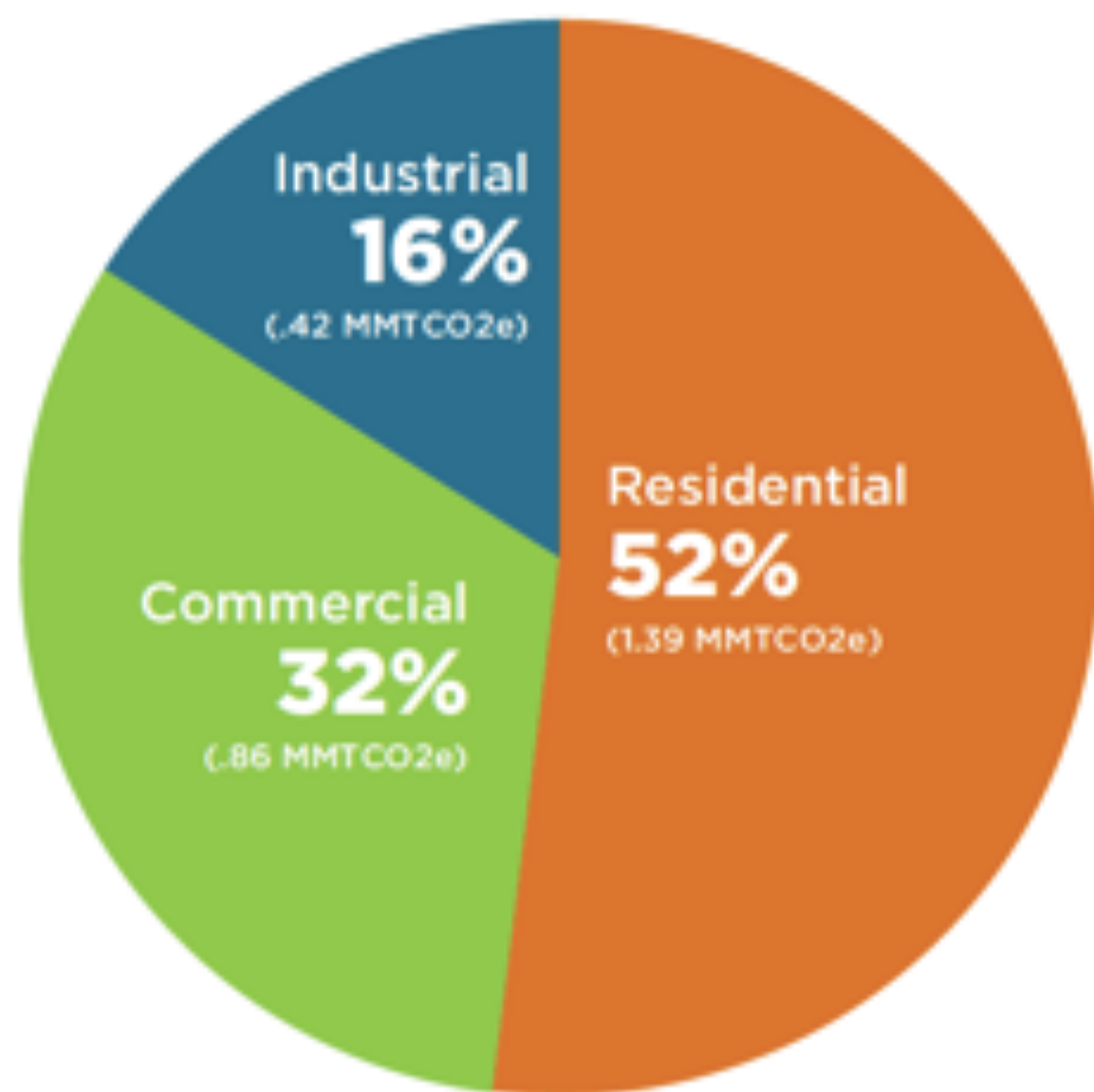


Vermont heating energy sources



GHG Emissions from Thermal Fuel Use In VT

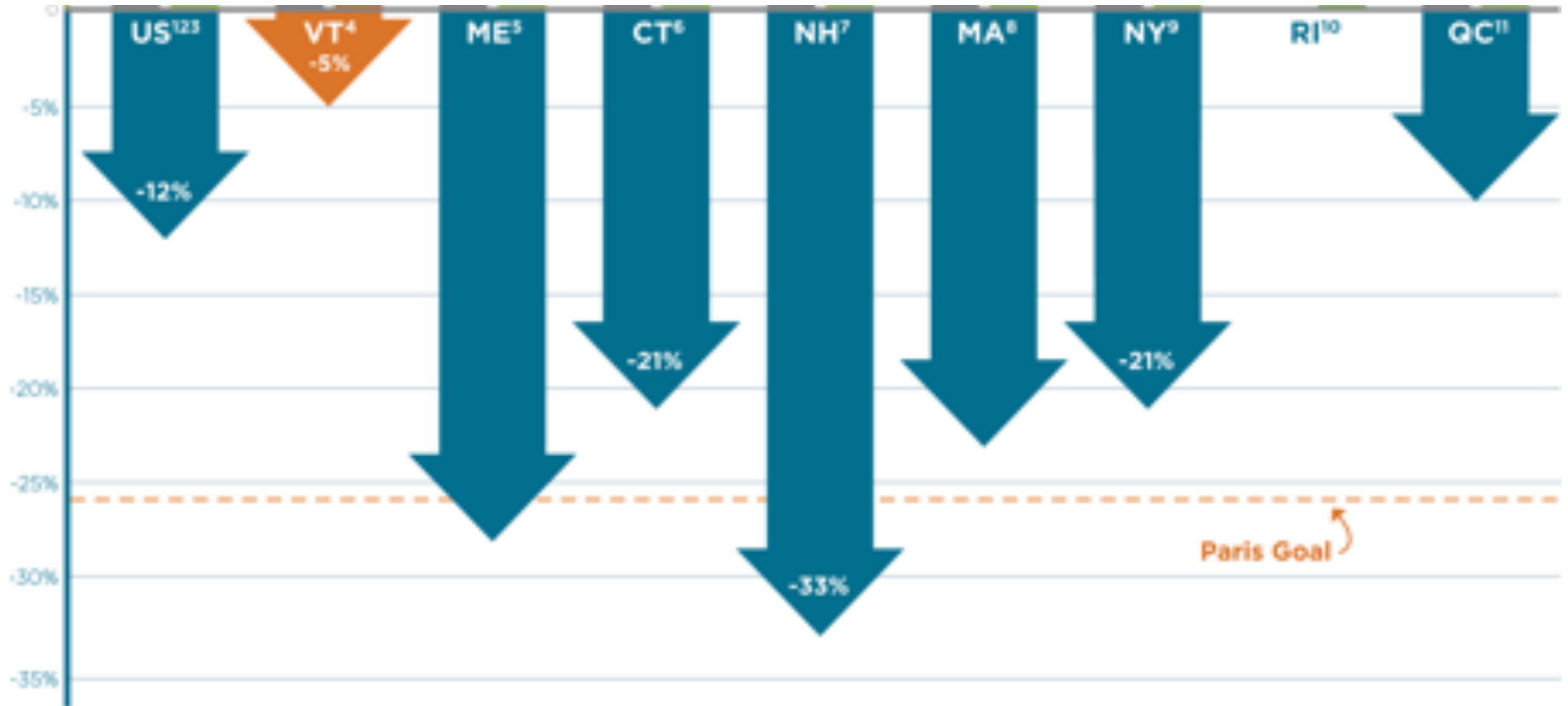
RCI Total: 2.68 MMTCO₂e

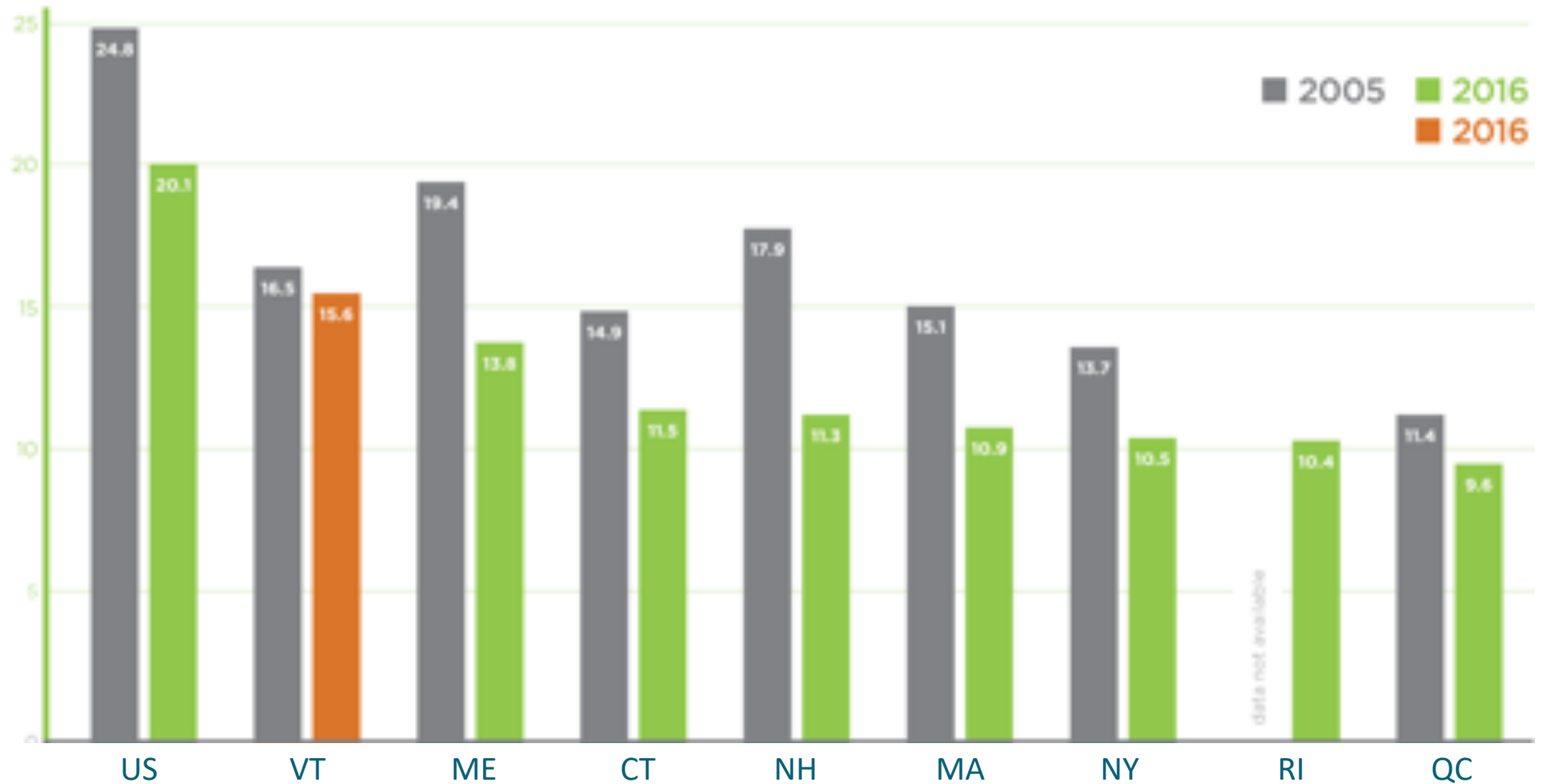


Source: Vermont Department of Environmental Conservation, 2019
Greenhouse Gas Emissions Inventory Brief (1990-2016)

Progress to Paris

Percent decrease in overall GHG emissions
(2016, compared to 2005 levels)



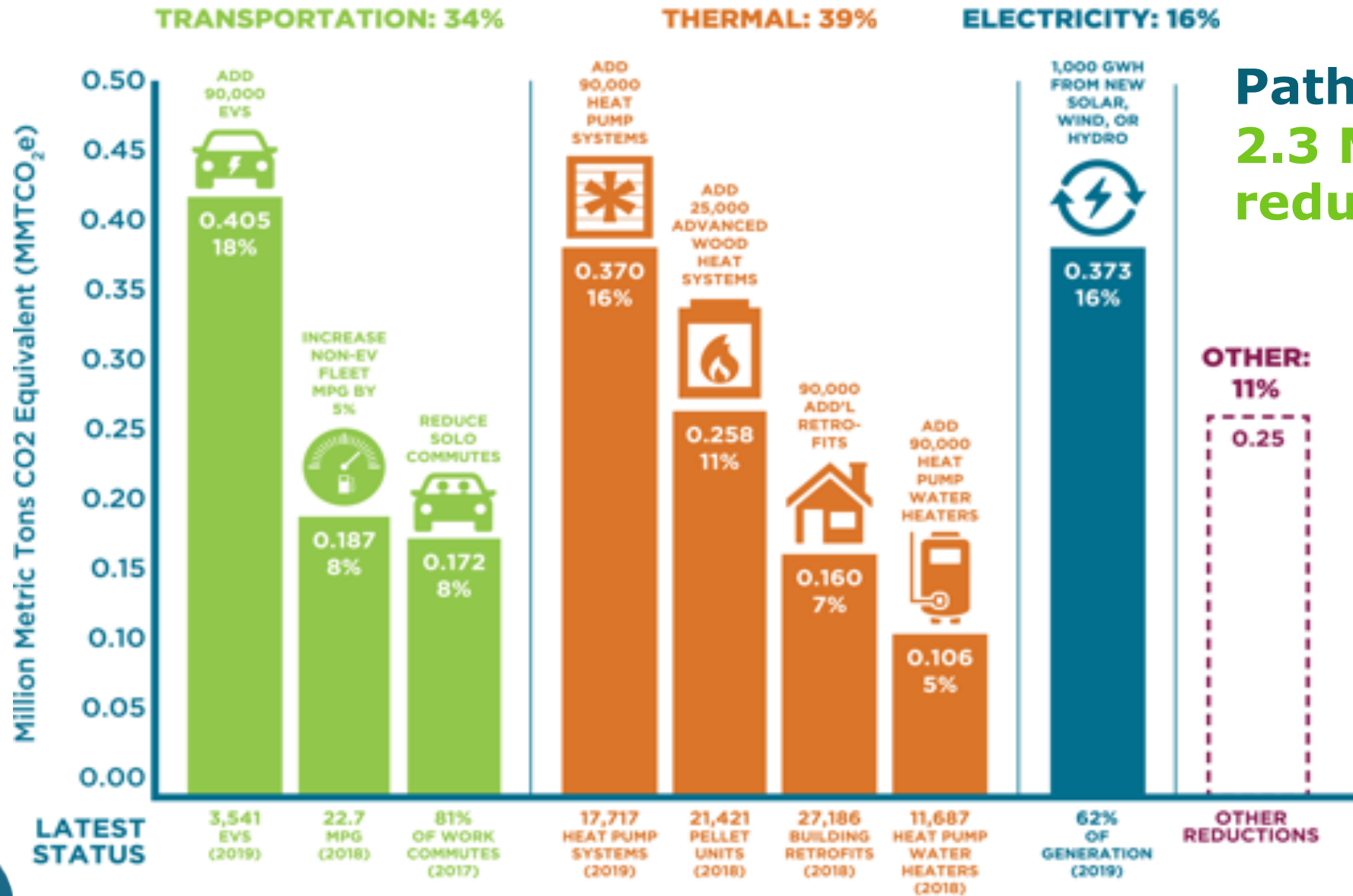


Per capita emissions

(metric tons CO₂e per person)



Path to Paris: 2.3 MMTCO₂e reduction by 2025



Economic impacts of EAN's Path to Paris: 2020 - 2035



INCREASE in
in-state investment:
**\$323
million**

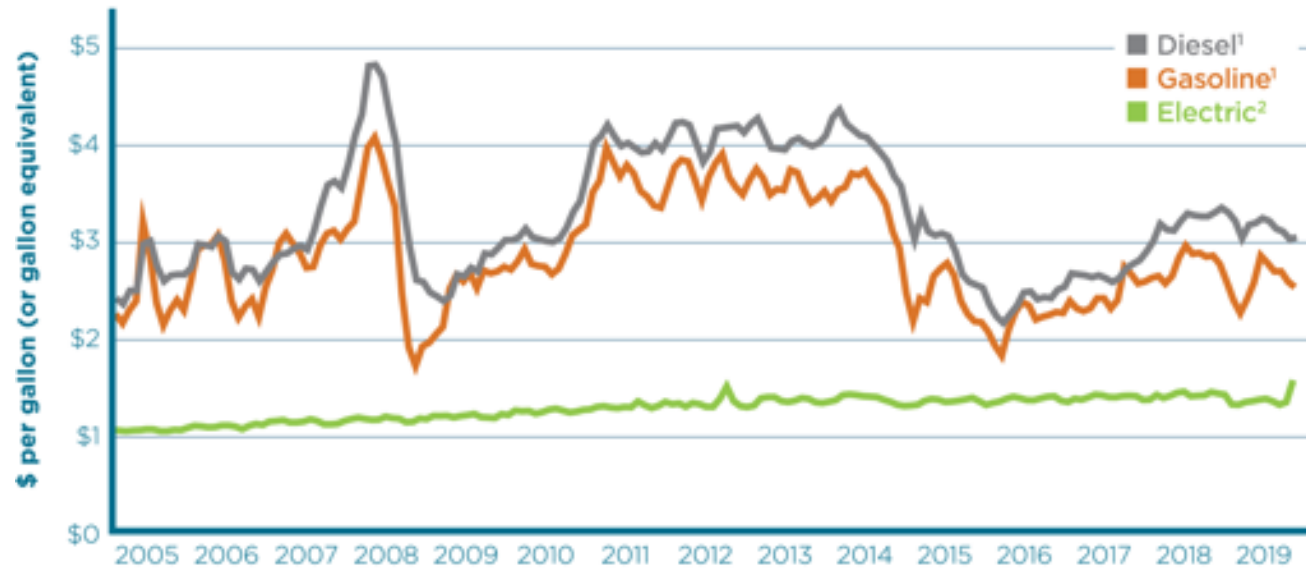


DECREASE in
out-of-state spending:
**\$1.115
billion**



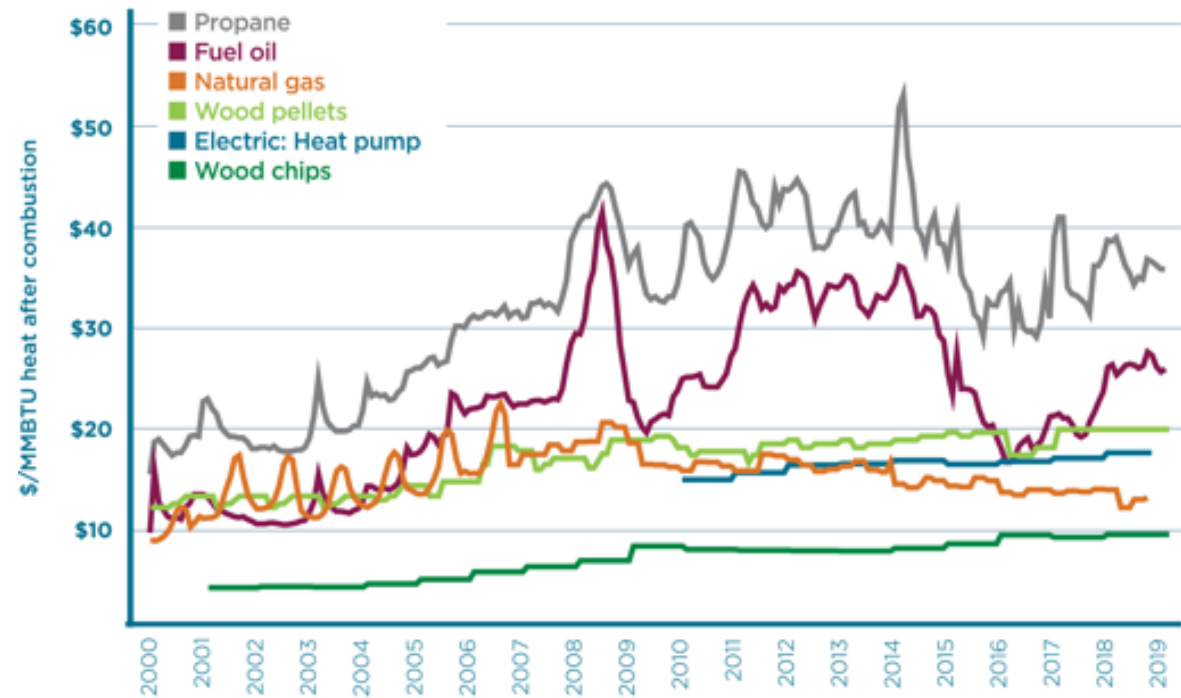
Net consumer savings:
**\$792
million**



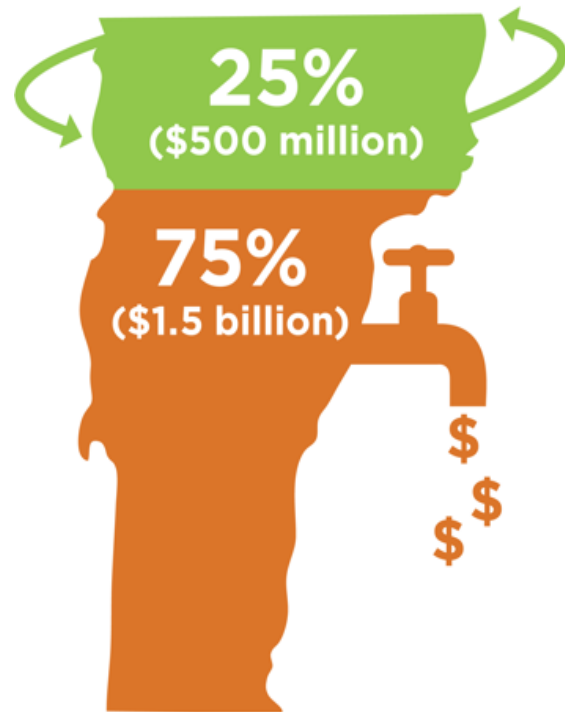


Electric vehicles are less expensive to drive than gas vehicles

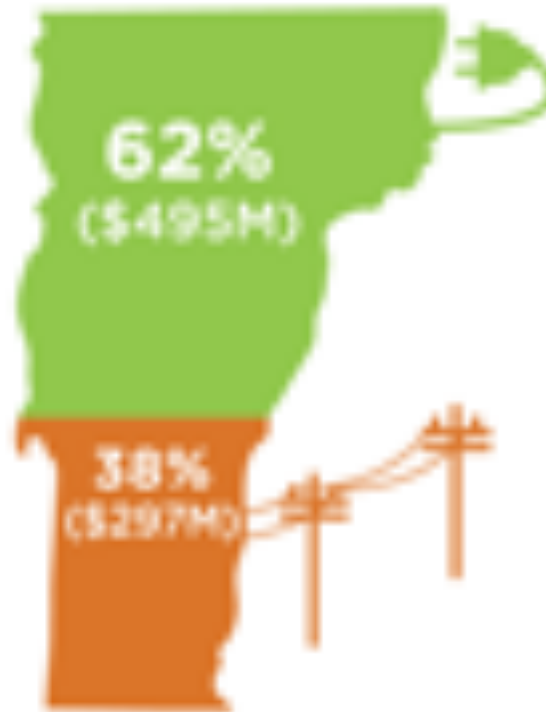
Renewable heating options are lower cost and more stable than fossil fuel options



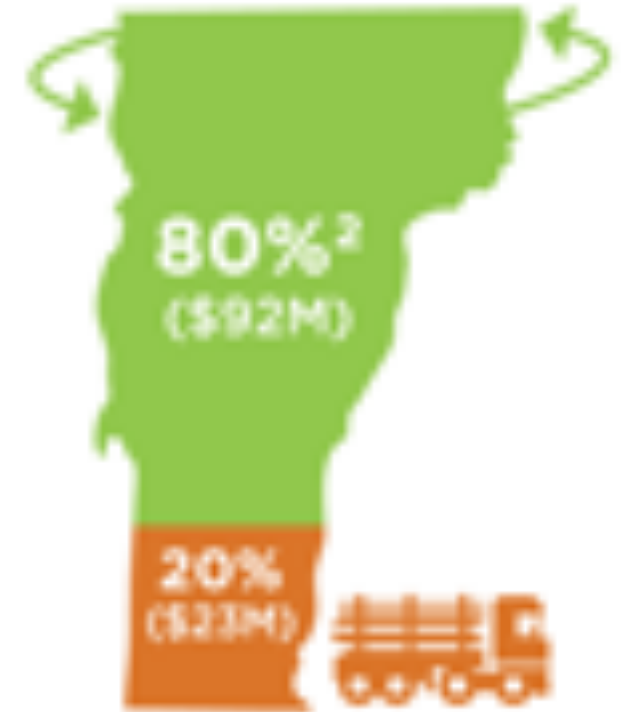
FOSSIL FUELS



ELECTRICITY



WOOD



 Recirculates in the VT economy
 Leaves the VT economy



Vermont clean employment growth by technology, 2014-2019



Vermont median hourly wages for clean energy jobs

	RENEWABLE ENERGY			ENERGY EFFICIENCY		
	Entry	Mid	High	Entry	Mid	High
Electricians	\$13.57	\$19.43	\$28.89	\$18.91	\$25.47	\$32.95
HVAC workers	\$13.10	\$20.77	\$32.66	\$18.43	\$25.15	\$35.05
Installation, maintenance, and repair technicians	\$13.10	\$20.77	\$32.66	\$14.84	\$20.72	\$30.23
Sales representatives	\$17.60	\$28.71	\$56.74	\$30.55	\$39.57	\$68.70
Engineers	\$24.99	\$37.21	\$56.61	\$23.78	\$39.38	\$57.98





Energy Equity: A Working Definition

Energy equity is based on the principle that **all people should have access to reliable, safe, and affordable sources of energy; protection from a disproportionate share of negative impacts or externalities associated with building and operating our energy supply and distribution systems; and equitable distribution of and access to benefits from these systems.**

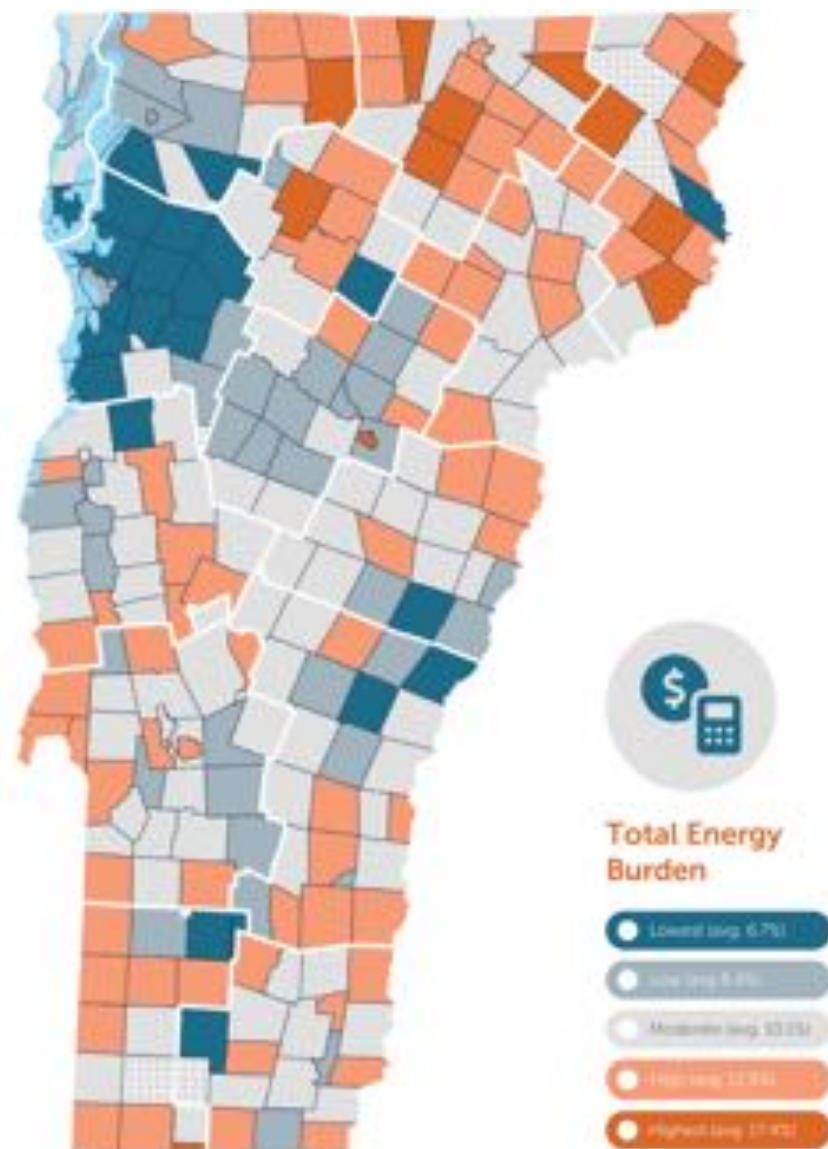
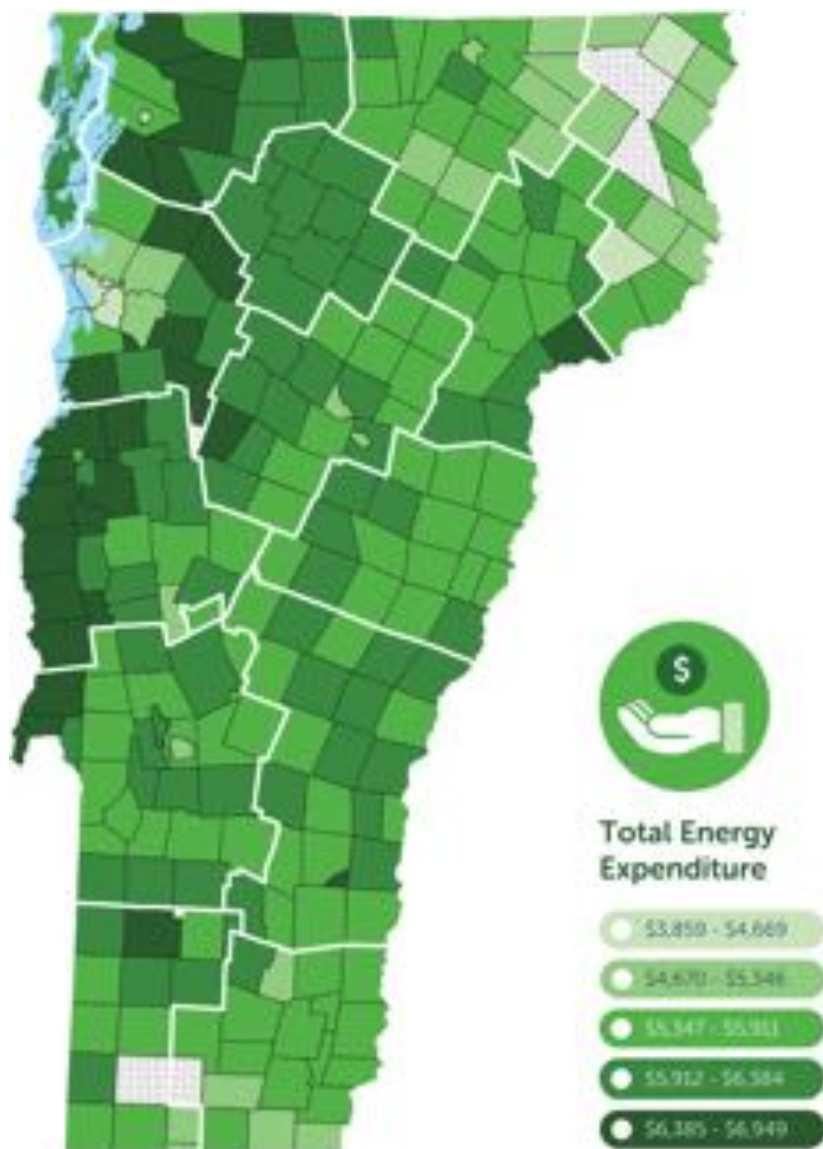


What is Energy Burden?

Quantity of energy consumed
× price of energy = Spending on energy

$$\frac{\text{Spending on energy}}{\text{Income}} = \text{Energy burden}$$

Energy burden measures the percent of income used for energy spending. This measurement allows us to acknowledge that energy spending does not affect everyone equally.



Source: Efficiency Vermont

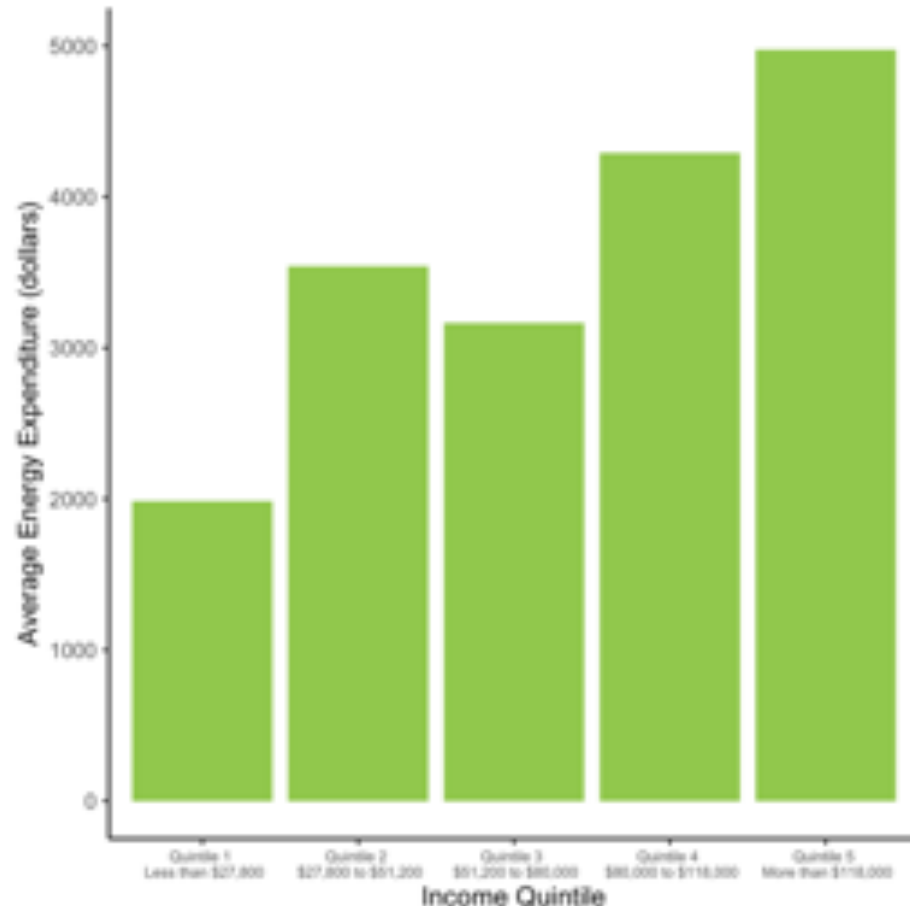




Energy Burden and Income

**Total Yearly Energy Expenditure in Vermont
by Income Quintile**

Source: U.S. Census Bureau, 2018 American Community Survey



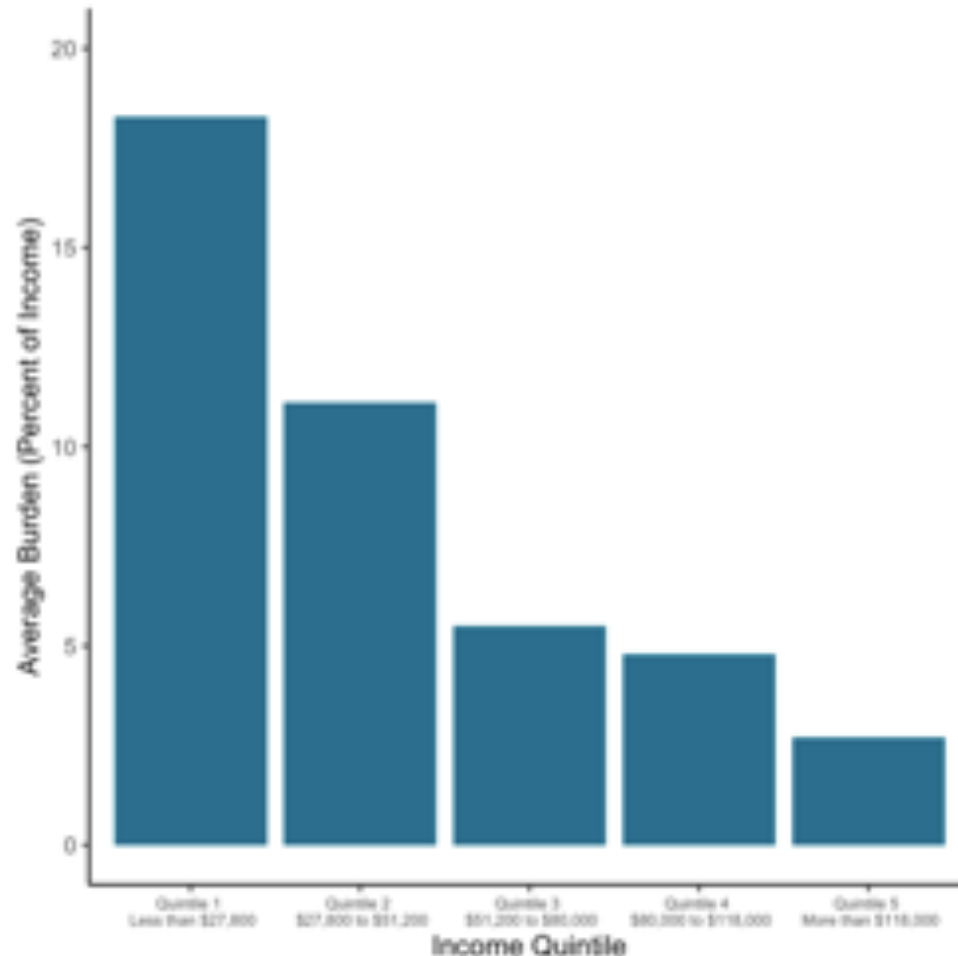
**Lower-income
Vermonters
purchase much less
energy than upper
income
Vermonters...**



Energy Burden and Income

**Total Energy Burden in Vermont
by Income Quintile**

Source: U.S. Census Bureau, 2018 American Community Survey

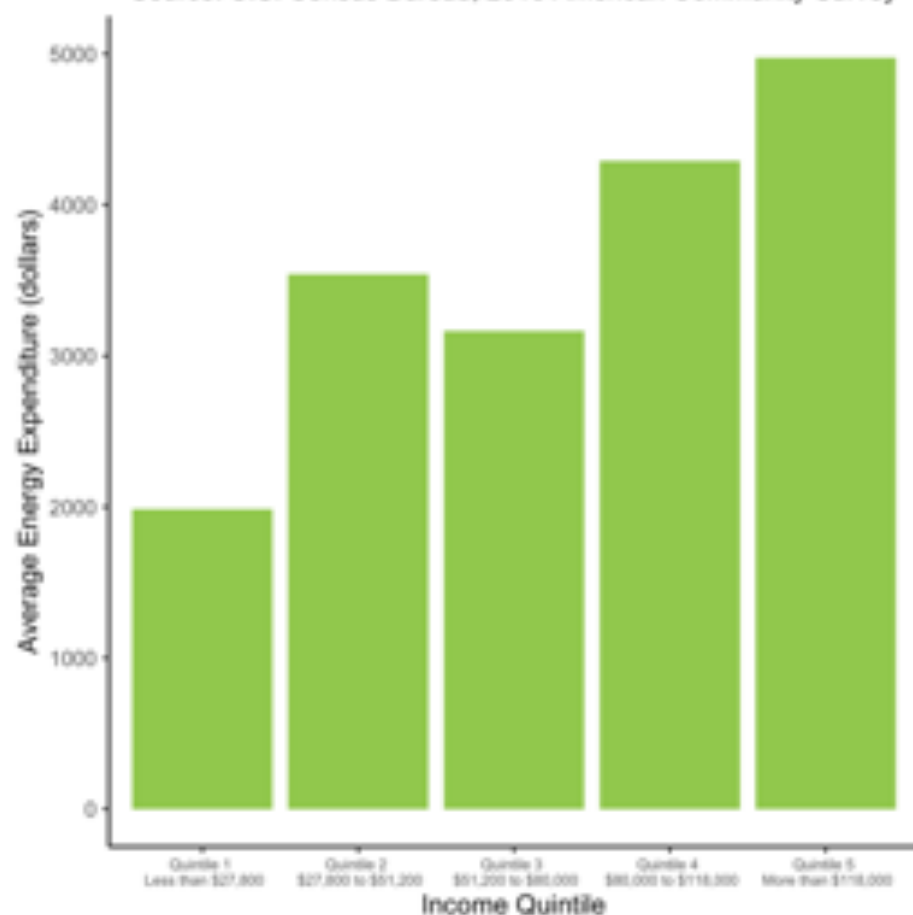


**... but spend a
far greater
proportion of
their income
on energy
than do upper
income
Vermonters**



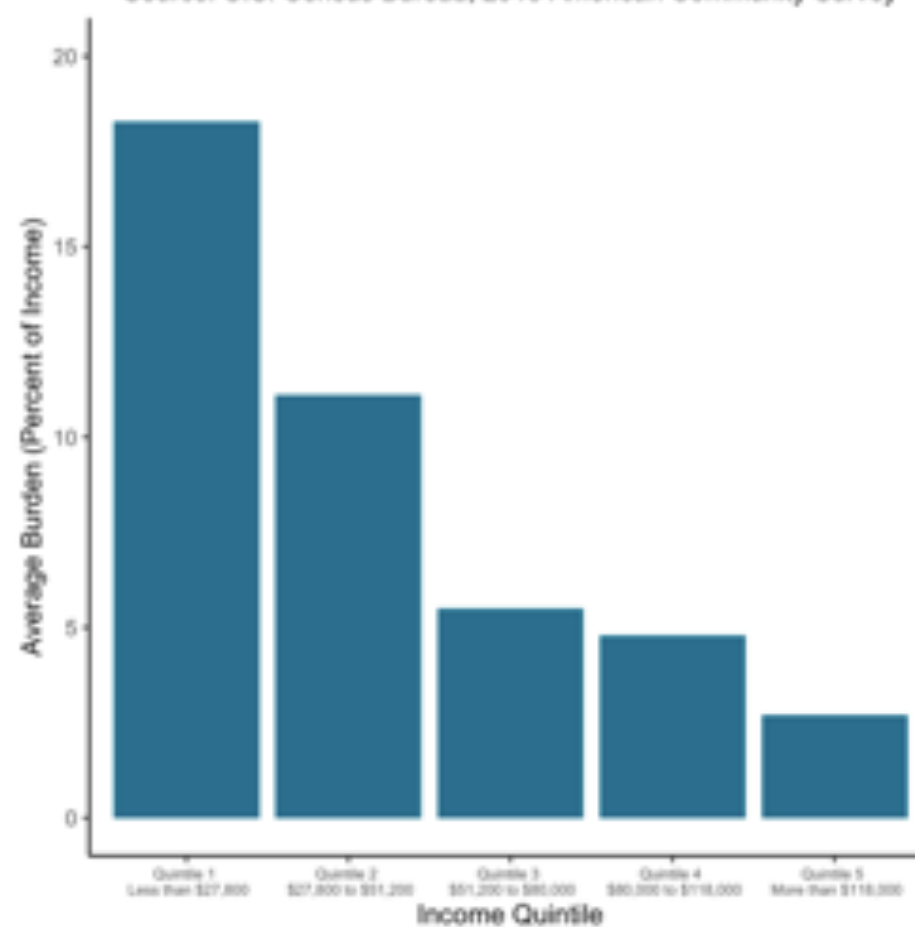
Total Yearly Energy Expenditure in Vermont by Income Quintile

Source: U.S. Census Bureau, 2018 American Community Survey



Total Energy Burden in Vermont by Income Quintile

Source: U.S. Census Bureau, 2018 American Community Survey





Low-income households purchase the least amount of energy, have the highest energy burden, and suffer the most intensely from energy burden.



Key Takeaways

- Vermont has a **moral obligation** and is **legally required** to meet our emissions reduction commitments.
- To succeed, we need to focus on moving beyond fossil fueled **transportation and heating** – with personal action *and* government action
- Doing so is a generational opportunity to **strengthen the Vermont economy, create good-paying jobs, save Vermonters money, and improve equity.**



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