



Renewable Energy Vermont (REV)

- ▶ Renewable energy trade association in Vermont
- ▶ Members include:
 - ▶ Businesses
 - ▶ Non-profits
 - ▶ Utilities
 - ▶ Individuals
 - ▶ All committed to reducing our reliance on dirty fossil fuels by increasing clean renewable energy and energy efficiency in Vermont
- ▶ REV's members include EV businesses such as vehicle manufacturers and charging providers
- ▶ Equitable access to the benefits of renewable energy, heating, and transportation, and energy efficiency.

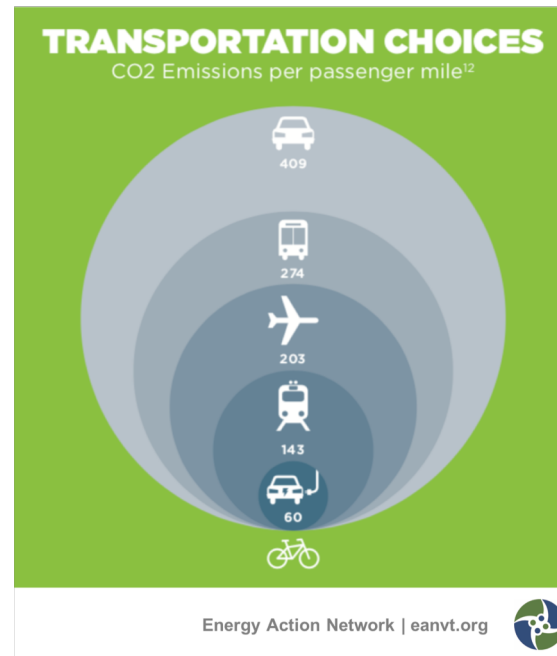
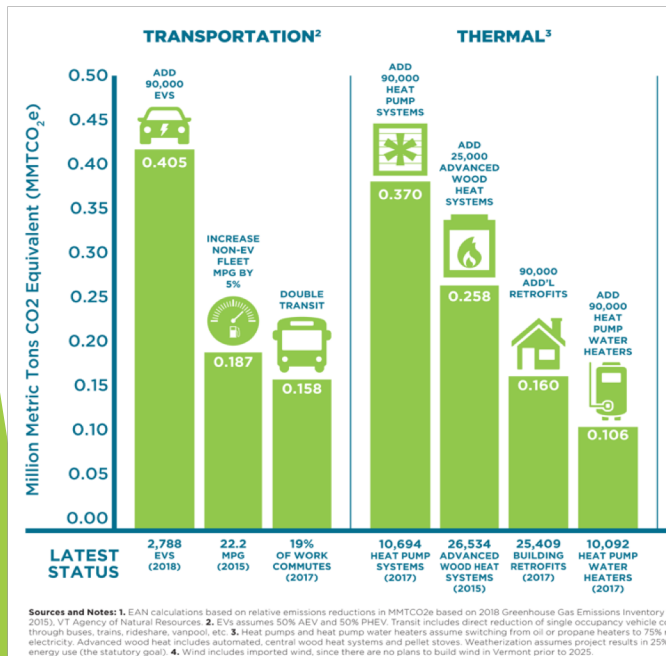
Need for Electric Vehicles in Vermont

- ▶ Pollution reductions
- ▶ Economic and health benefits
- ▶ Saves Vermonters money



Pollution Reductions

- 90,000 new EVs needed to meet VT's 2025 pollution reductions commitments

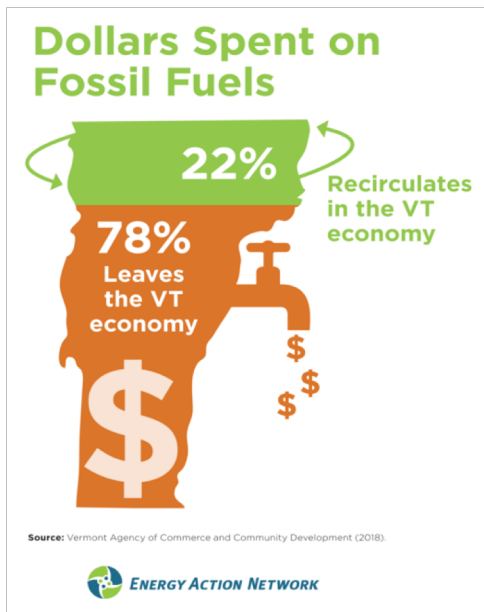


Vermont's Commitments

- 10 V.S.A. 580(a) - 25% of all energy consumed in VT from renewable resources
- 10 V.S.A. 578(a) - Reduce GHG emissions in and out of VT caused by in-state energy use by 50% from 1990 levels by 2028
- Comprehensive Energy Plan
 - Reduce total transportation energy use by 20% from 2015 levels by 2025
 - Reduce transportation-emitted GHGs by 30% from 1990 levels by 2025


Economic and Health Benefits

- ▶ Electric vehicles keep money in Vermont
- ▶ Vermont stands to save \$313 million in total health and climate costs by transitioning to a majority of EVs by 2024
- ▶ Renewable transportation creates new jobs




Saves Vermonters Money

- ▶ Gas vehicle drivers spend nearly \$10,000 more on operations and maintenance over 150,000 miles.
- ▶ Point of sale incentives are important and effective ways to realize these savings



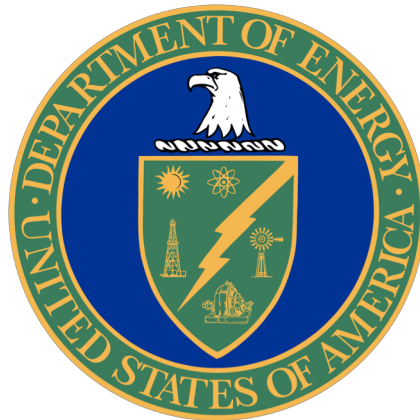
	GAS VEHICLE	ELECTRIC VEHICLE
Fuel	\$2.74/gallon ²	\$1.50/gallon equivalent ³
Oil Changes & Filter Replacement	\$900	None
Tire Changes	\$600	\$600
Engine Air Filter Replacements	\$207	None
Cabin Air Filter Replacements	\$273	\$273
Spark Plug Replacements	\$439	None
Coolant Flush and Replacement	\$110	\$110

Sources and Notes: Fuel costs from Energy Information Administration, 2018 average Regular gas price in New England. Electric costs from Drive Electric Vermont. Note: does not account for rate design or other programs that may reduce charging costs. Maintenance costs adapted to Vermont from Going from Pump to Plug, Union of Concerned Scientists, 2017. Compares the cost of the manufacturer's recommended services for a Chevrolet Bolt EV and a Chevrolet Sonic over 150,000 miles.

 **ENERGY ACTION NETWORK**

DOE study shows EV Incentives Work

- ▶ Every \$1,000 offered in EV rebates has been shown to increase EV sales by 4.8%
- ▶ One additional charging station per hundred-thousand people of driving has been shown to increase EV adoption by 3.1%



DOE (NREL) study looking at 400 different EV incentive programs offered over eight years; <https://www.nrel.gov/news/program/2018/nrel-research-shows-hov-lanes-and-purchase-rebates-are-effective-incentives-for-plug-in-electric-vehicle-purchase.html>

Equitable EV policy

- ▶ Tier III of Vermont's Renewable Energy Standard requires equity of participation and benefit
- ▶ Geographic equity concerns - vast difference in benefit or incentive offered to Vermonters depending on which DU service territory
 - ▶ Burlington Electric Department customers may receive a point of sale incentive or rebate of up to \$1,800 on a new electric vehicle but Vermont Electric Coop customers may only receive a \$500 rebate for the same vehicle. Some utilities offer no EV incentive
- ▶ Burlington Electric Department's early leadership to offer scaled incentives based on a customer's income should be relied upon as a model and best practice
- ▶ Equity guide checklist that offers best practices
 - ▶ Developed by the Vermont Energy Access Coalition, in partnership with the U.S. Urban Sustainability Directors Network
 - ▶ Available online at www.revermont.org/forall

OTHER STATES INCREASING RENEWABLE ENERGY, JOBS, & CLIMATE ACTION

- ✓ CA, CT, DE, LA, MD, NY, OR, PA, TX, DC offer electric vehicle purchase incentives
- ✓ California required all new buses be carbon free within next 10 years





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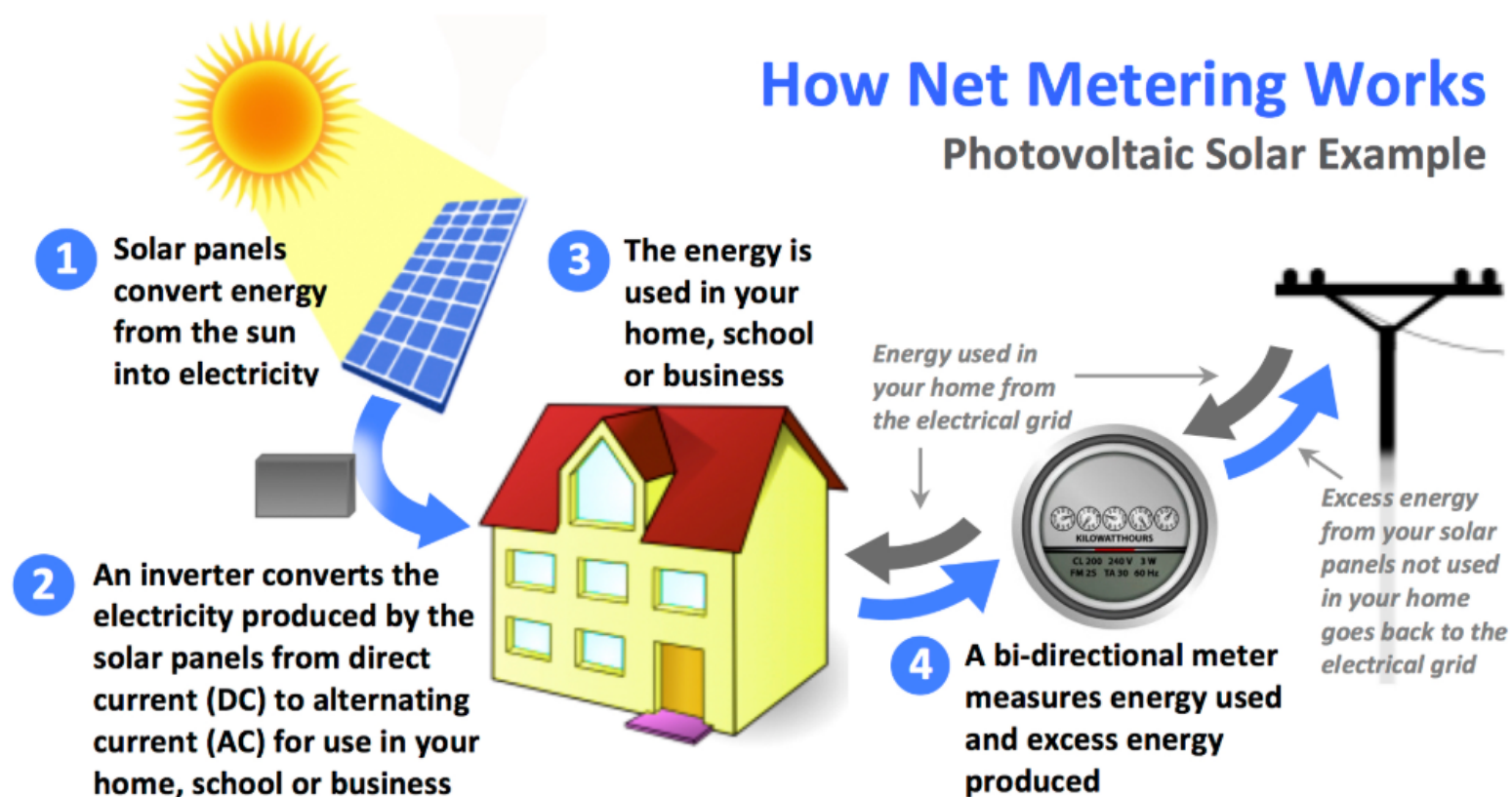
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How Net Metering Works

Photovoltaic Solar Example



Net-Metering is how Vermonters can generate their own electricity and share what they don't use with their neighbors through the grid.

Net Metering 3.0

- ▶ Compensation based on whichever is lower, the utility's blended residential rate or the statewide average blended residential rate (\$0.15417/kWh)
- ▶ May not use net metering credits toward non-bypassable charges:
 - ▶ Customer Charge
 - ▶ Energy Efficiency Charge
 - ▶ Energy Assistance Program Charge
 - ▶ On-bill financing
- ▶ Four categories of Net Metering systems, plus hydro
 - ▶ Category I: 15 kW and under = +1 cent/kWh siting adjustor for 10 years
 - ▶ Category II: 15-150 kW on preferred sites = +1 cent/kWh siting adjustor for 10 years
 - ▶ Category III: 150-500 kW on preferred sites = - 2 cent/kWh siting adjustor for lifetime
 - ▶ Category IV: 15-150 kW not on preferred sites = - 3 cent/kWh siting adjustor for lifetime
- ▶ 150-500 kW projects allowed only on "preferred locations"
- ▶ REC adjustors:
 - ▶ +2 cents/kWh credit for ten years if RECs go to utility
 - ▶ drops to +1 cent/kWh for CPGs filed after July 1, 2019
 - ▶ -3 cents/kWh (debit) for the life of the system if RECs are held by the generator
- ▶ Biannual PUC proceeding to revisit adjustors

