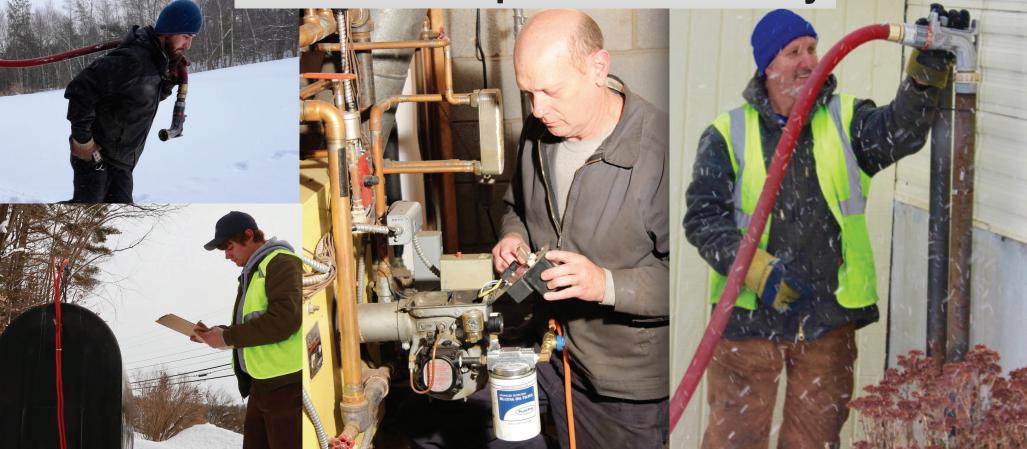
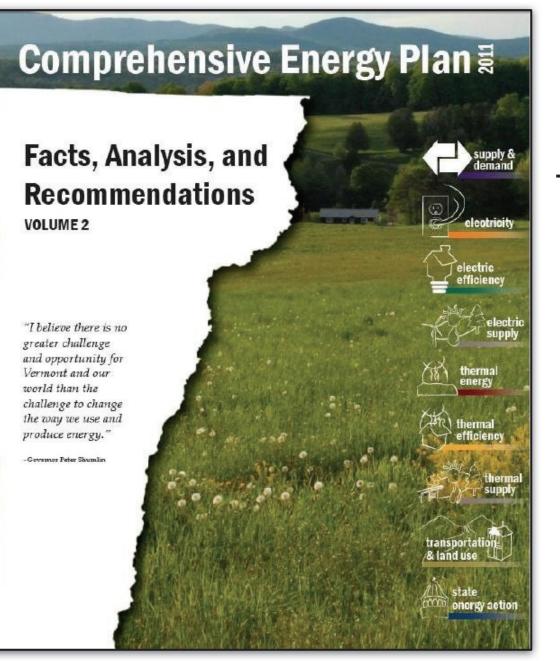


Vermont's Liquid Fuel Industry



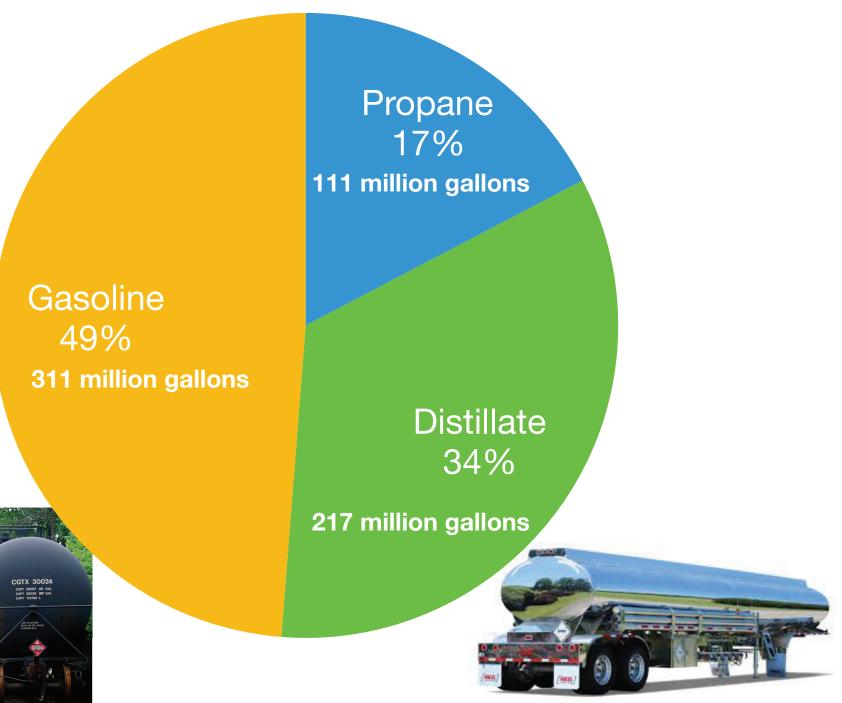


The Vermont Comprehensive Energy Plan seeks to **''virtually eliminate''**

the use of petroleum.

Liquid Fuel Consumption in Vermont

2016 Vermont Consumption Data from U.S. DOE EIA Updated April 2018



Distillate Consumption – Vermont – 2016		
Use	Gallons	Percentage
Heat, Residential	75,226,000	35%
Heat, Commerical	28,095,000	13%
Military	760,000	Less than 1%
Electric Power Production	414,000	Less than 1%
Railroad	9,818,000	5%
Highway Vehicles	70,527,000	32%
Forestry/Construction	6,673,000	3%
Farm	12,808,000	6%
Jet Fuel	12,180,000	6%
TOTAL	216,501,000	

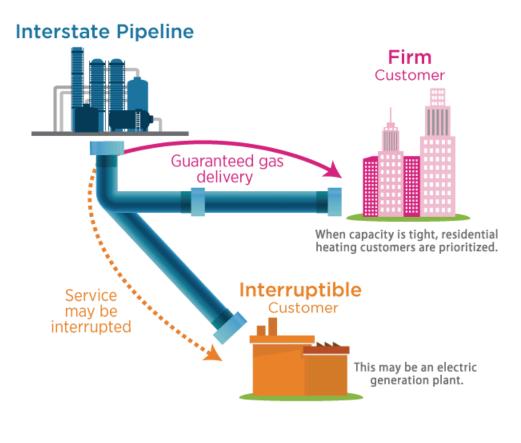
Lessons from the 2018 Bomb Cyclone

If your outdoor condensing unit is iced up, airflow will be severely restricted, resulting in a struggling unit that may end up causing severe damage. The most common solution to a frozen heat pump is running the defrost cycle. It normally turns on automatically at timed intervals or when the unit detects frost, however, some systems have a defrost option. The defrost cycle basically reverses the heat pump into air conditioning mode so that it can pump heat to the outdoor unit until it unfreezes.

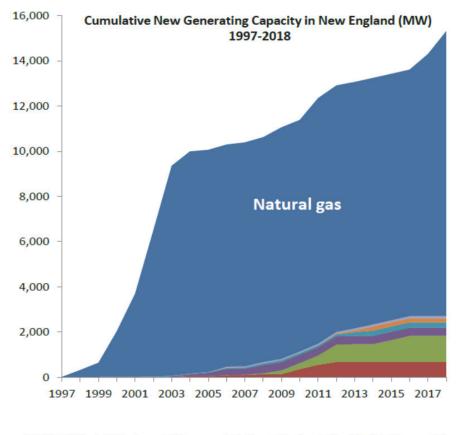








Source: PJM https://learn.pjm.com/three-priorities/ keeping-the-lights-on/gas-electric-industry/natural-gaselectric-market.aspx



■ Oil ■ Wind ■ Nuclear ■ Biomass ■ Solar ■ Hydro ■ Fuel Cell ■ Natural Gas

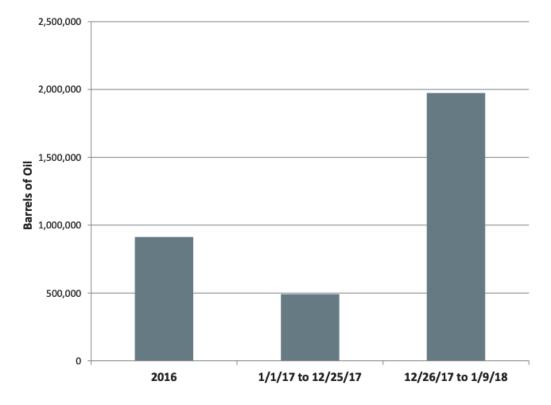
VELCO Testimony: https://legislature.vermont.gov/Documents/2020/WorkGroups/ House%20Energy%20and%20Technology/Witness%20Documents/ Electric%20Utilities/W~John%20Flynn~VELCO%20Introduction%20~1-25-2019.pdf

When natural gas is interrupted, electric utilities and large industrial users of natural gas rely on distillate infrastructure to keep the lights and heat on in the winter.



Generator Oil Burn: Two Weeks vs Twelve Months

NE generators burned 2 million barrels of oil in 2 weeks—more than twice the amount of oil used in all of 2016



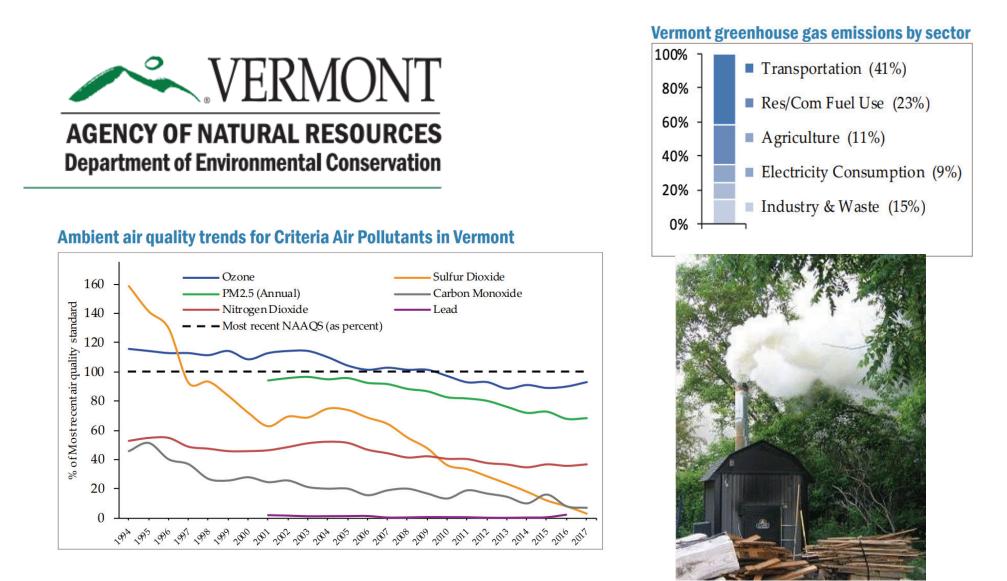
2018 Bomb Cyclone



2 million barrels = 84 million gallons

Vermont homes require approximately 72 million gallons of distillate per year.

Source: ISO-NE https://www.iso-ne.com/static-assets/documents/2018/02/02272018_pr_presentation_state-of-the-grid_2018.pdf



Vermont's winter particulate levels are often dominated by local emissions, especially in mountain valley towns where reductions from local sources like wood stoves will be needed to meet more protective future standards.

Source: DATA SOURCE: Air Quality and Climate Division Greenhouse Gas Emissions Inventory Update 1990-2013 PREPARED BY: Air Quality and Climate Division; (802) 828-1288

 $\underline{https://legislature.vermont.gov/Documents/2020/WorkGroups/Senate\%20Natural\%20Resources/reports/W~Heidi\%20Hales~DEC\%20Department\%20Performance\%20Report\%202019~1-17-2019.pdf$

Clean and Efficient Oilheat



Vermont oilheat companies *only* deliver clean and efficient Ultra-Low Sulfur Heating Oil (ULSHO) Learn more at heatcleanvt.com

Vermont law requires all heating oil and kerosene to have less than 15 ppm sulfur.



Bourne's Energy– Morrisville, VT

Vermont's Aboveground Storage Tank (AST) regulations provide spill prevention and inspection requirements for both tank owners and fuel suppliers.

Five Keys to Compliance

1) A fuel oil tank can not be filled if it has leaks, drips, pitting, rust, dents, cracks or corrosion.

2) The tank must be on a stable foundation.

3) If the fuel line between the tank and the burner is below grade, it must be either plastic coated copper or sleeved.

4) All tanks need to have a working vent alarm.

5) The fill pipe and vent pipe must have a minimum diameter of 1-1/4 inch.



vermontfuel.com/tank



\$100 million

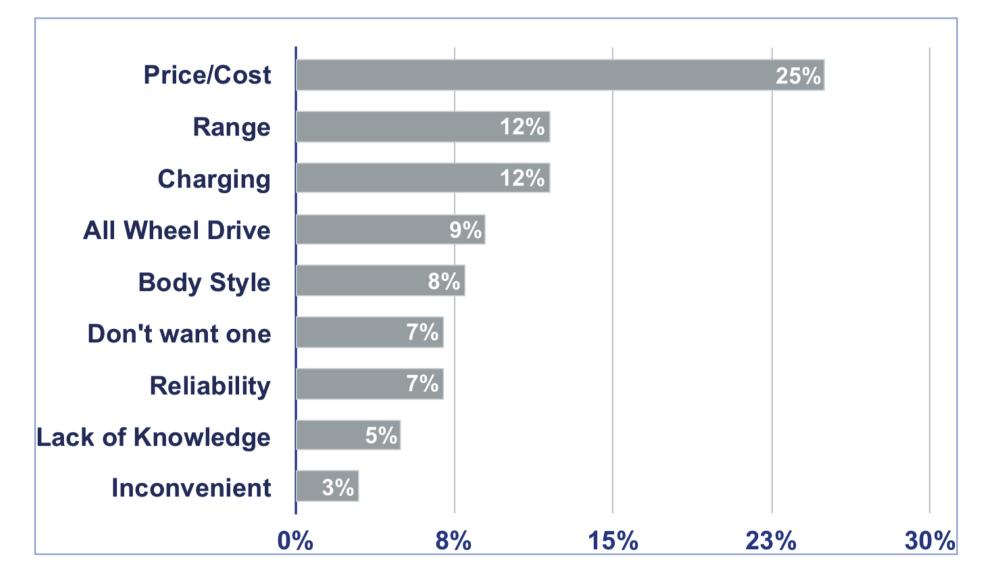
Vermont Excise Taxes on Gasoline and Diesel Vermont has 14,000 miles of roads to maintain, 8000 are unpaved.



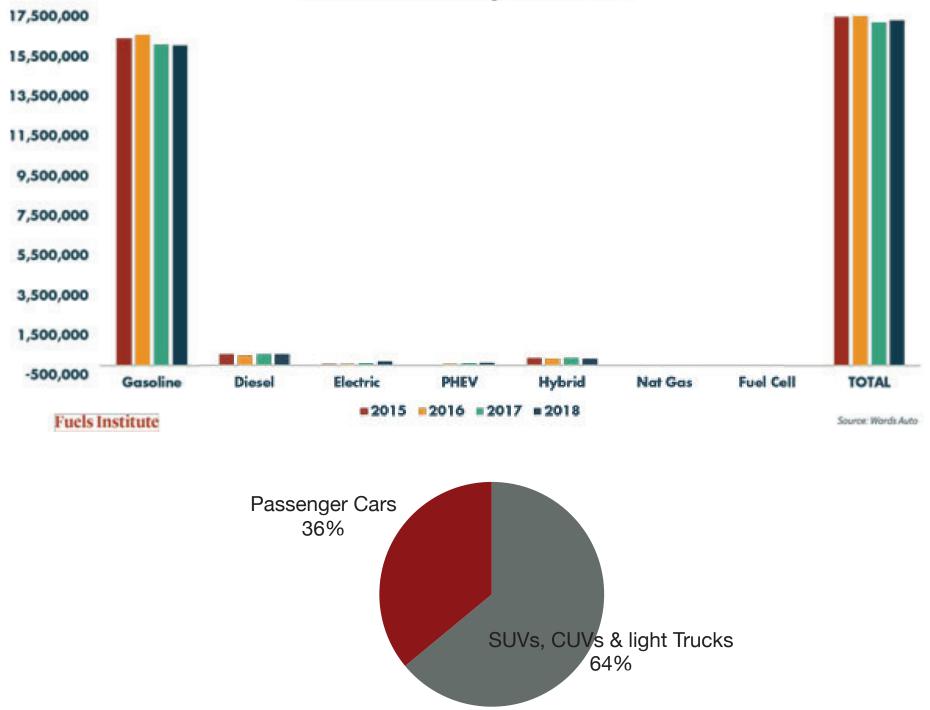
Drive Electric Vermont 2016 Survey of Electric Vehicle Awareness & Interest



Reasons for not purchasing electric vehicle.



Total Units Sold by Powertrain





Vermont's Liquid Fuel Industry

