
Switch and Save

Income-Qualified - Water Heater Changeout

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Co-chairs of the Switch and Save Steering Committee

How can we meet our climate, energy, and equity requirements cost-effectively?

**The Vermont Climate Action Plan identifies
heat pump water heaters
as a key strategy**

Energy Equity:

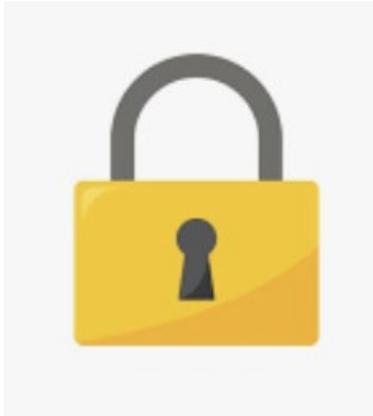
Hot water heating is the second largest energy cost for Vermont homes

The highest burden is on those who can least afford it



Replacement = \$1,000-\$4,000

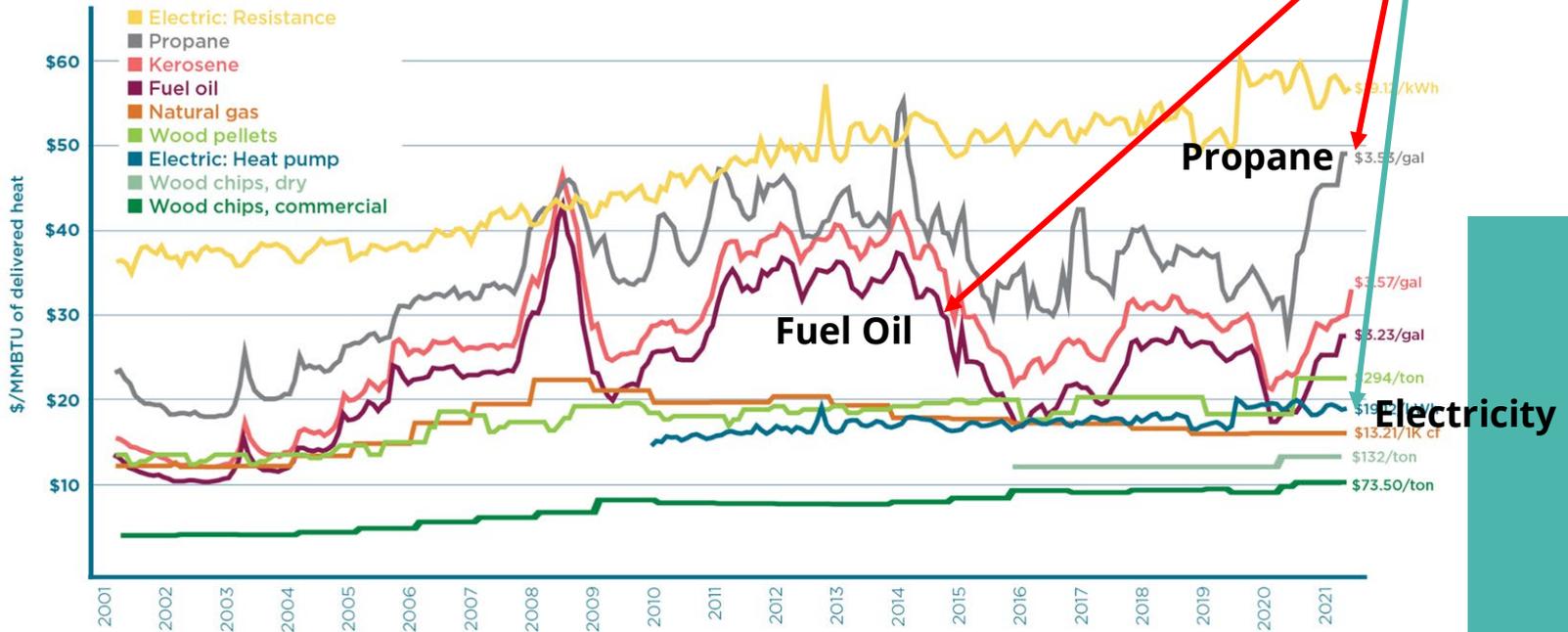
Replacing with new fossil-fueled water heaters locks us in for 10-13 years



- High-cost fuels
 - High price volatility
 - Low-efficiency
 - GHG pollution
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Fossil Fuel Heat = 20 Years of high cost and price volatility

Cost comparison of different heating options over time



Source: Biomass Energy Resource Center, 2021. Note: electricity prices presented here are a statewide average. Electricity prices vary by utility territory.

Switch & Save Proposal - for lower income Vermonters

\$5 million in ARPA or other federal or flexible funds to provide income-qualified Vermonters with new energy-efficient heat pump water heaters (appx 1,250 to 2,500 households by end 2024)

- At low/no cost when combined with existing utility incentives (total avg. cost to install \$2,500- \$4,000)
- Including necessary electrical work
- Administered by Efficiency Vermont or CEDF in partnership with Distribution Utilities, Community Action Programs, and private sector installers

Focus on lower income Vermonters (and those not reached through WAP)

- Homes that have been weatherized over the past 10 years
- Homes with water heaters that are at risk of failing or have failed

Why Switch & Save?

Equity: focused on lower income Vermonters, reducing water heating expenses by up to 50%

Impact: one of top pathways identified to meet GWSA requirements

Technical Feasibility: smaller equipment, easy installation, makes homes electric-ready for other fuel switching

Cost-Effective: Reduced energy consumption = \$ savings and GHG reduction EVERY YEAR

Co-Benefits: reduced humidity, electric utility demand management

Climate Action Plan Criteria



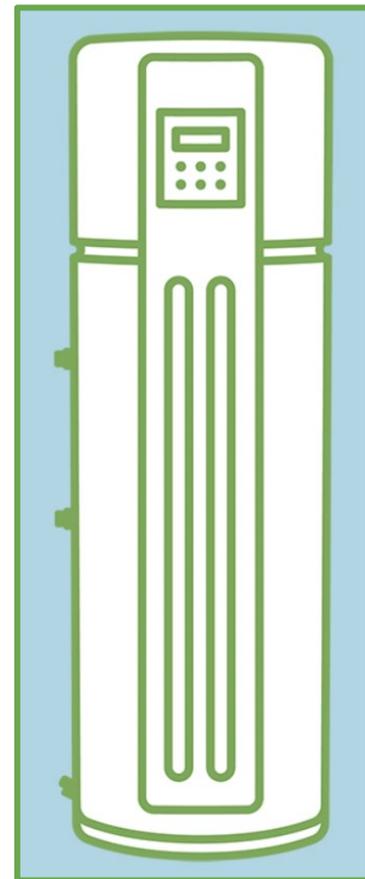
Why Heat Pump Water Heaters?

Cost Savings: Water heating is a home's 2nd highest energy cost, so making sound choices now can lead to big savings later

Build on current programs and incentives (up to \$500-\$1600), which have had very low uptake compared to incentives for heat pump heaters and EVs

Electric Heat Pump Water heaters offer the best balance of:

- up-front cost
- ease of installation
- savings over time
- reduced GHG emissions
- dehumidification



A key to meeting Vermont's climate requirements with an equity focus

Heat Pump Water Heaters

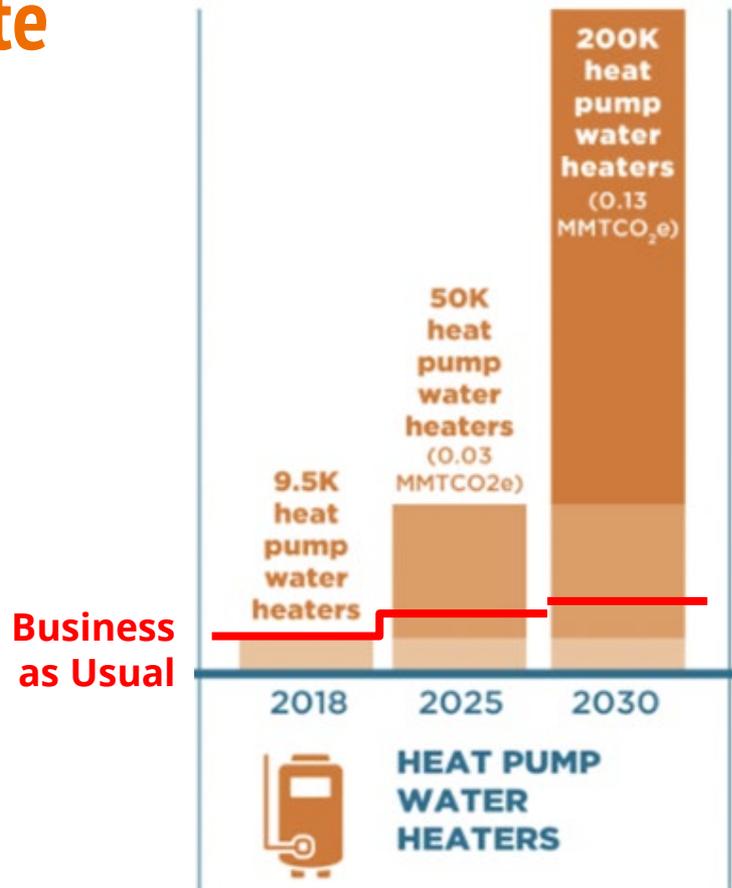
By 2025: 50,000 installed

By 2030: 200,000

Currently installed = 15,000

Current annual rate = 2,000

Needed = ~11,600/year



Switch & Save - a turnkey energy equity program

Committee members

Steering Team Members

- Darren Springer, Burlington Electric Department, Co-Chair
- Linda McGinnis, EAN Senior Fellow, Co-Chair
- Carol Weston and Dave Westman, Efficiency Vermont
- Geoff Martin and Steve Bauer, Two Rivers Ottauquechee Regional Planning Commission
- Ben Edgerly Walsh, VPIRG
- Johanna Miller, VNRC
- Mark Stephenson, Vermont Energy Contracting and Supply
- Ashley Wainer, VGS

Advisory Members

- Paul Dragon, CVOEO
- Ken Nolan, Vermont Public Power Supply Authority
- Kristin Carlson, Green Mountain Power
- Lisa Morris, Vermont Electric Cooperative
- Louis Porter, Washington Electric Cooperative
- Neale Lunderville, VGS and Co-Chair Weatherization at Scale Action Team
- Paul Zabriskie, Capstone Community Action
- Melanie Paskevich, NeighborWorks of Western Vermont

Questions?

Contact: Darren Springer (dspringer@burlingtonelectric.com) or Linda McGinnis (lindamcginnis0@gmail.com).

Additional Slides

Benefit #1

Energy Efficiency and Cost Savings

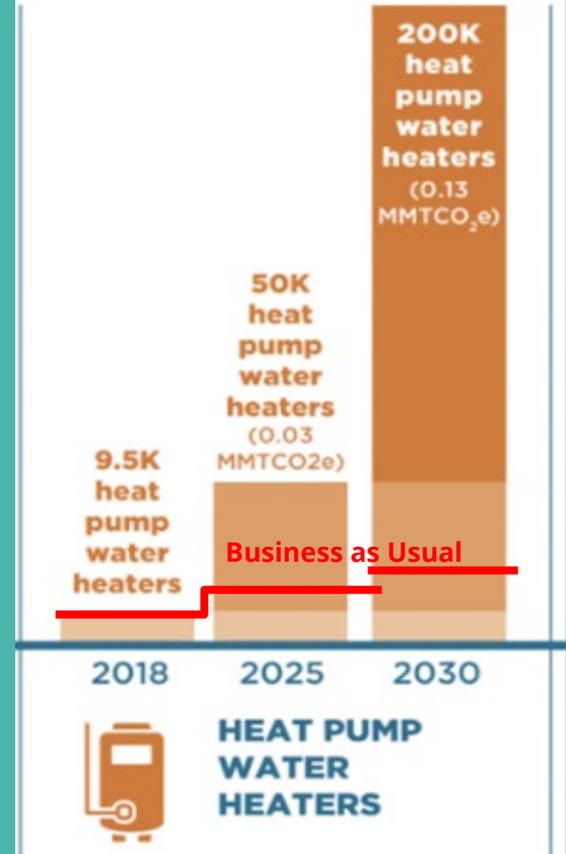
- **Efficiency:** Heat pump water heaters typically have a higher upfront price, but can cost half as much to operate given their strong energy efficiency (and provide dehumidification)
 - **Savings:** DOE estimates that HPHWs reduce energy consumption 60% compared to conventional water heaters. (CEDF estimates \$258 annual savings per household)
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Benefit #2

Progress Toward Climate Requirements

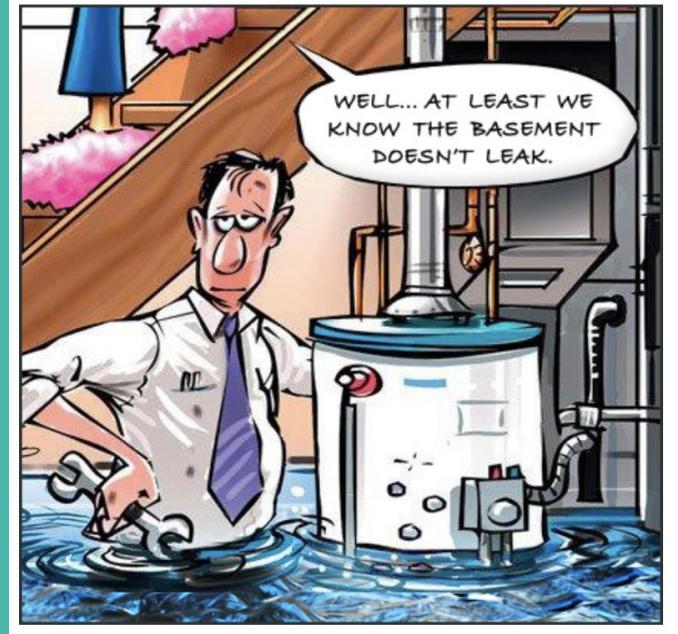
VT Climate Action Plan identifies Heat Pump Water Heaters among the most cost-effective technologies in cutting GHG emissions

Reaching GWSA Requirements



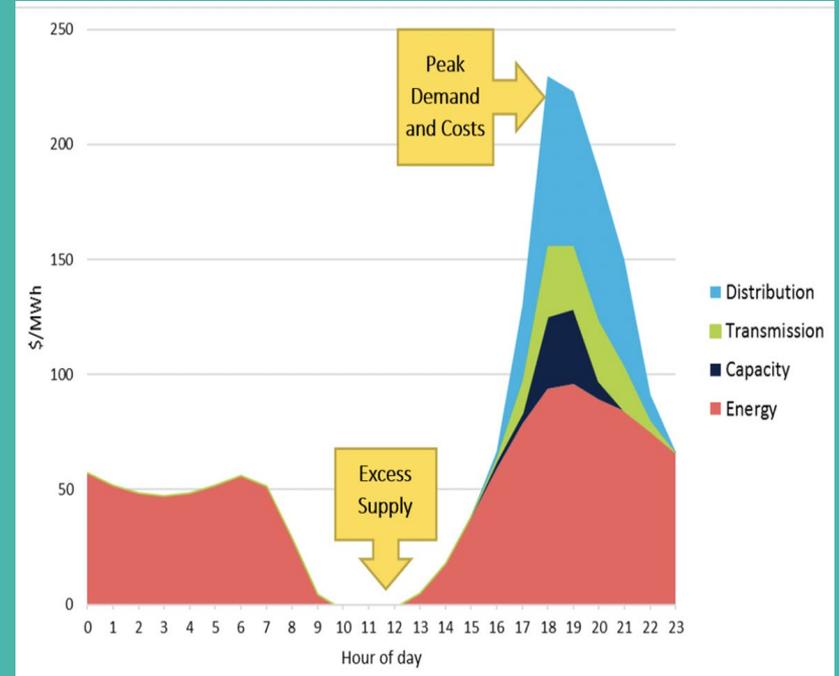
Benefit #3

Replace *Before* it Breaks



Focus eligibility on lower income Vermonters with older water heaters to avoid emergency replacement with similar inefficient equipment

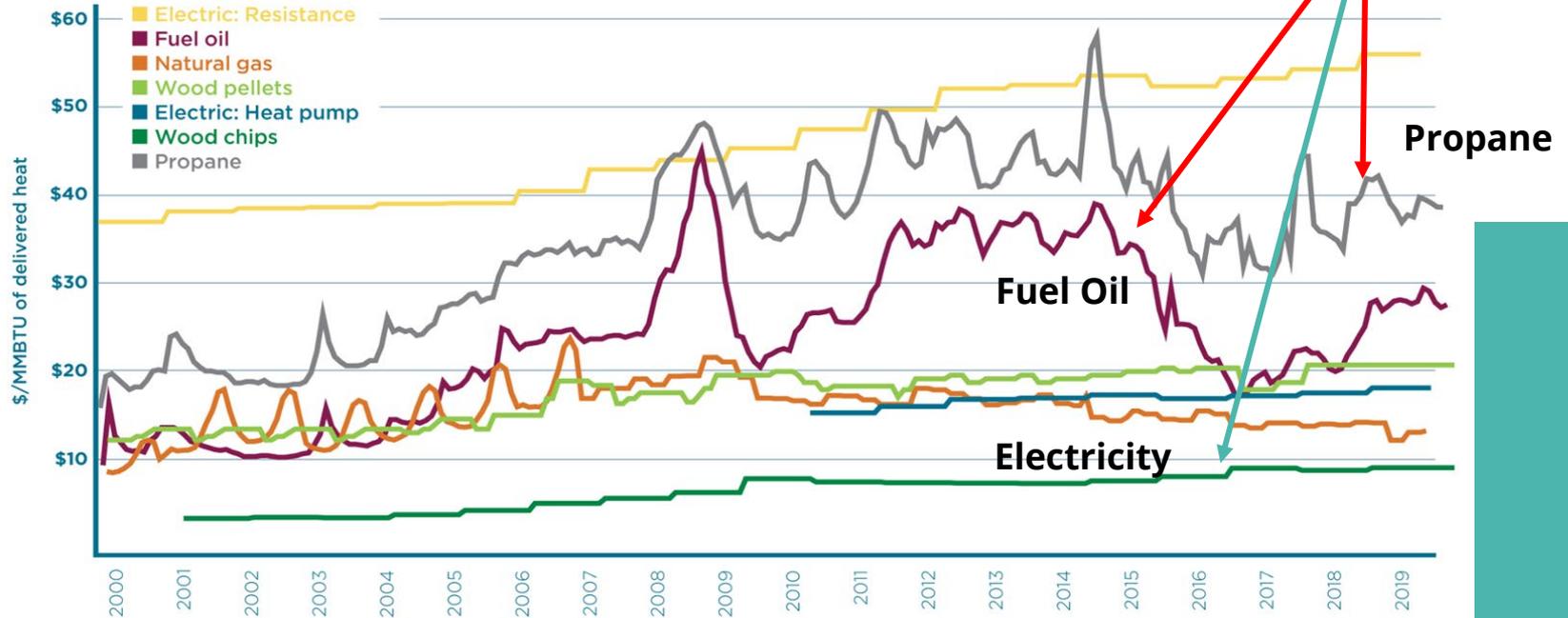
Benefit #4 Manage Peak Electric Demand



HPHWs act as thermal “batteries”. When many are used across the state, they can provide system-wide cost savings, unlocking the possibility of discounted rates or bill credits

Benefit #5 - Avoid 13 more years of price volatility

Cost comparison of different heating options over time



Source: Biomass Energy Resource Center, 2019. Note: electricity prices presented here are a statewide average. Electricity prices vary by utility territory.

Benefit #6

Increase Customer and Contractor Focus on Water Heaters



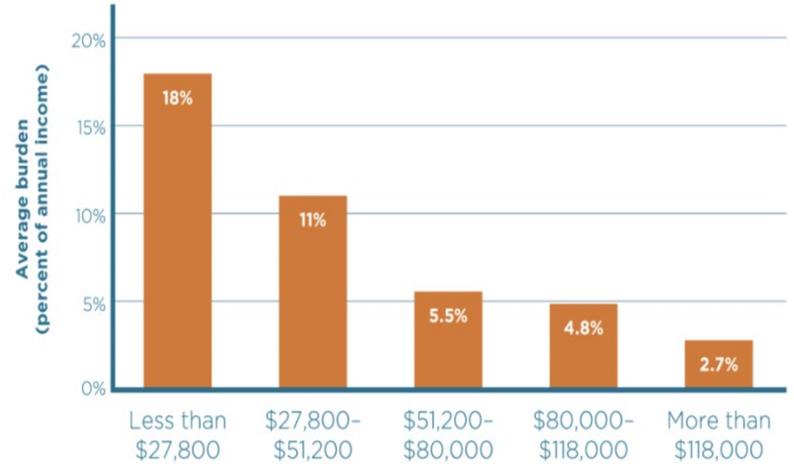
Focus on outreach to eligible Vermonters via utilities and Efficiency Vermont, the Community Action Agencies, and qualified contractors.

Benefit #7

Equity Focus



Combined heating and electricity energy burden in Vermont, by income quintile



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

Low/No Cost incentive and electric panel upgrade helps those for whom the burden is the highest