Driving the Heat Pump Market

Lessons Learned from the Northeast

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Renewable Heating & Cooling Workshop

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VEIC

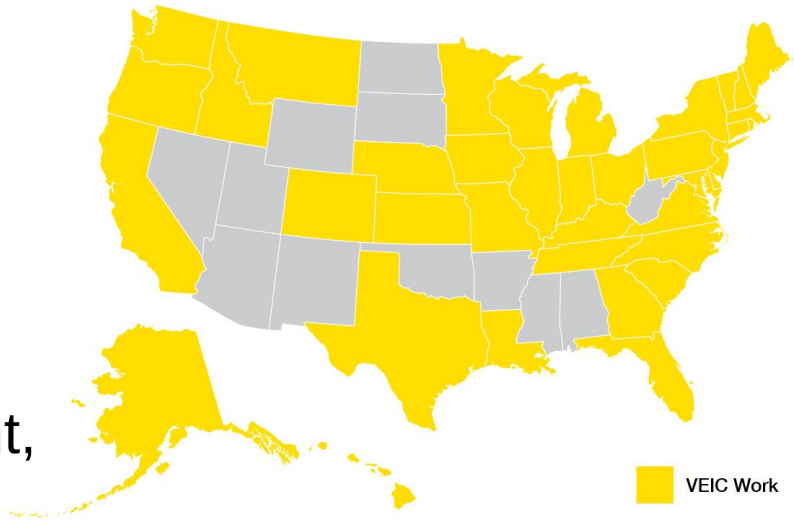
NRDC
NATURAL RESOURCES DEFENSE COUNCIL

About VEIC

Mission-driven nonprofit

30+ years reducing economic & environmental costs of energy

Over 300 staff; offices in Vermont, Ohio, & Washington DC



“Think and do tank”

- Energy efficiency
- Renewable energy
- Clean transportation

Clients

- Utilities
- States
- Regulators / consumer advocates
- Foundations / environmental organizations

Today: Program Design

- State-by-state policy for seven Northeast states
- Energy codes
- Program design

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Online: www.veic.org/resource-library

Technology Focus: Ductless Mini-Splits

Source: https://www.energystar.gov/products/heating_cooling/ductless_heating_cooling

Programs Reviewed

State	Program/Utility
Connecticut	Energize CT (Eversource and United Illuminating)
Maine	Efficiency Maine
Massachusetts	Mass Save (Utility Efficiency Programs)
	Massachusetts Clean Energy Center
New Hampshire	NH Saves (Utility Efficiency Programs)
New York	NYSERDA
	Utility Efficiency Programs
Rhode Island	National Grid
Vermont	Efficiency Vermont
	Utility RES Compliance

Incentives and Installation Rates

State	Program/Utility	Incentive Approach	Incentive Level	Annual Install Rate
CT	Energize CT	Midstream	$300	0.10%
MA	Mass Save	Downstream	$100-300	0.26%
	MassCEC	Downstream	$625-1000	
ME	Efficiency Maine	Downstream	$500	0.82%
NH	NH Saves	Downstream	$375-750	0.16%
NY	NYSERDA	Midstream to contractor	$500	0.06%
	Utility Programs	Downstream	$100-300	
RI	National Grid	Downstream	$100-300	0.22%
VT	Efficiency Vermont	Midstream	$600-800	1.20%
	Utility RES Compliance	Downstream	$150-375	

Heat Pump Usage in the Northeast

- Most common application:
  - Ductless mini-split
  - Installed in home with an oil or propane boiler
  - Home retains backup fossil fuel heating system
  - Adds new cooling load
- Wide variability in use of heat pump vs. backup system

Example:
Savings Allocation

Note: For illustrative purposes only;
does not include increased electric load

Savings Assumptions

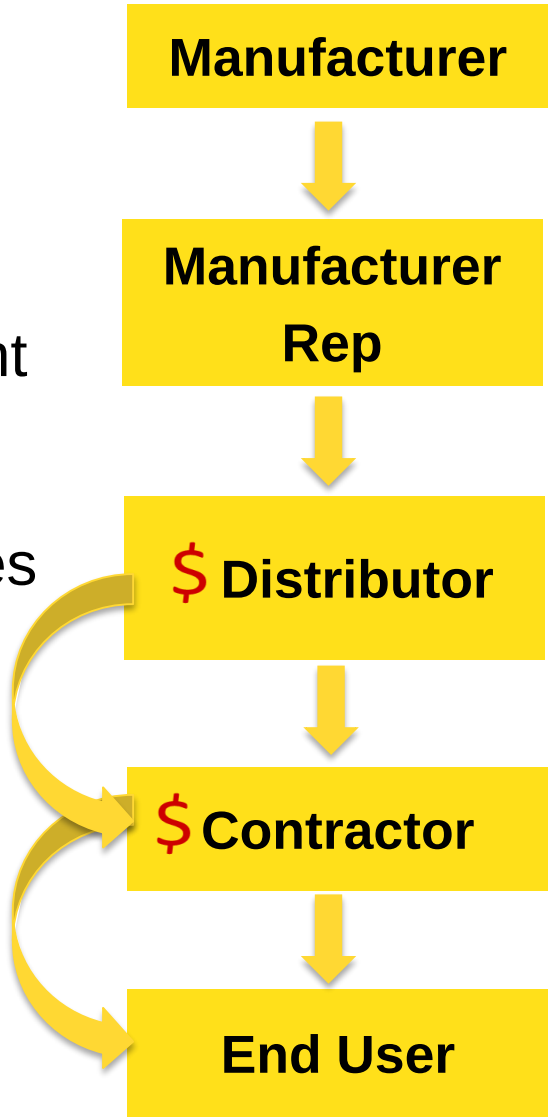
State	Program/Utility	Incentive Level	Incremental Electric Savings	Retrofit Fuel Savings
CT	Energize CT	$300	Yes	No
MA	Mass Save	$100-300	Yes	No
ME	Efficiency Maine	$500	Yes	No
NH	NH Saves	$375-750	Yes	No
NY	NYSERDA	$500	Yes	No
	Utility Programs	$100-300		
RI	National Grid	$100-300	Yes	Yes
VT	Efficiency Vermont	$600-800	Yes	Yes

Savings & Incentives Lessons Learned

- Electric utility programs that only value incremental electric savings tend to offer lower incentives ($100-300/unit)
- Programs that offer higher incentives (>$500/unit):
  1. Count the fossil fuel savings towards program goals (e.g., Efficiency Vermont) OR
  2. Have non-utility program administrators with broader goals for renewable thermal adoption or GHG reduction (e.g., MassCEC, NYSERDA)

Program Design Lessons Learned

- Midstream programs are most effective at driving the market
  - Proactive supply channel engagement
  - Instant discount at point of sale
  - Distributor and/or contractor incentives
- Contractor training is critical to encourage quality installation
  - Contractor incentives (NYSERDA)
  - Trade ally networks (Efficiency Vermont)



Recommendations

- **Count all of the benefits**
  - Include full benefits in cost-effectiveness screening to match state policy goals
  - GHG reduction, fuel security, comfort, health, econ development
- **Explore funding options beyond electric system benefit charges**
  - RPS ratepayer charges, carbon market revenues, fossil fuel taxes
  - Coordinate between program administrators to avoid confusion

Recommendations

- **Offer robust incentives through midstream programs**
  - Supply channel engagement; coordinate inventory, marketing, and training
  - Opportunity for regional coordination
- **Provide contractor and customer training**
  - Optimize ASHP use with backup heating

Resources

Download the Report
https://www.veic.org/resource-library/driving-the-heat-pump-market-lessons-learned-from-the-northeast

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