

Educating on heat pumps: Focus on Contractors

2023 Midwest Energy Solutions Conference

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Climate + Clean Energy Solutions for everyone.

The knowledge, people, and
resources to solve our biggest
energy challenges.



Education can help us responsibly accelerate ASHP adoption

Why is education especially important now?

In empowering contractors:

- Who needs education and on what?
- What roles do utilities and statewide programs play?



Manufacturer



Distributor

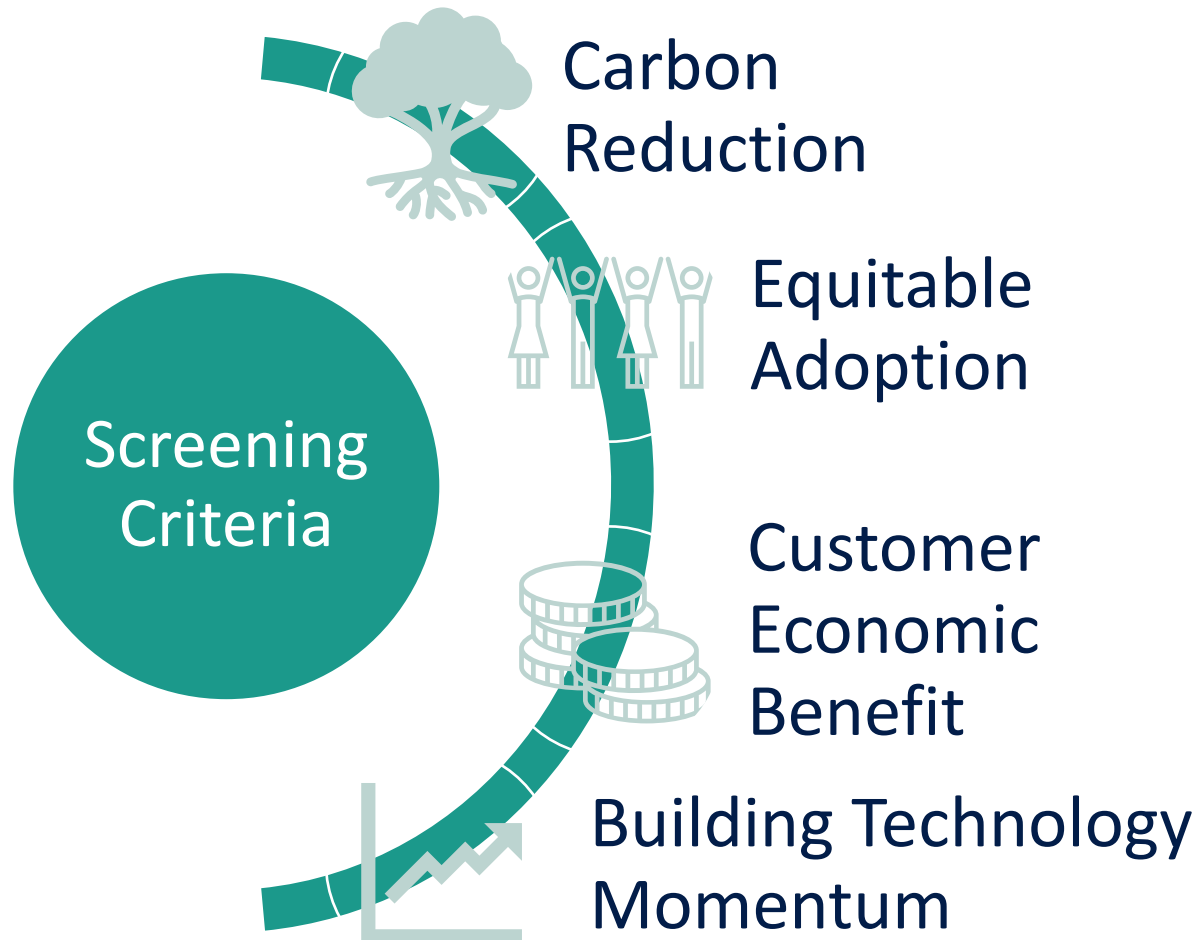


Contractors



Customer

Identifying top ASHP opportunities in Wisconsin



Top 5 ASHP Opportunities

- Single family AC replacement/natural gas dual fuel
- Single family propane displacement
- Multifamily with electric resistance heat
- Single-family all-electric new construction
- Multifamily all-electric new construction

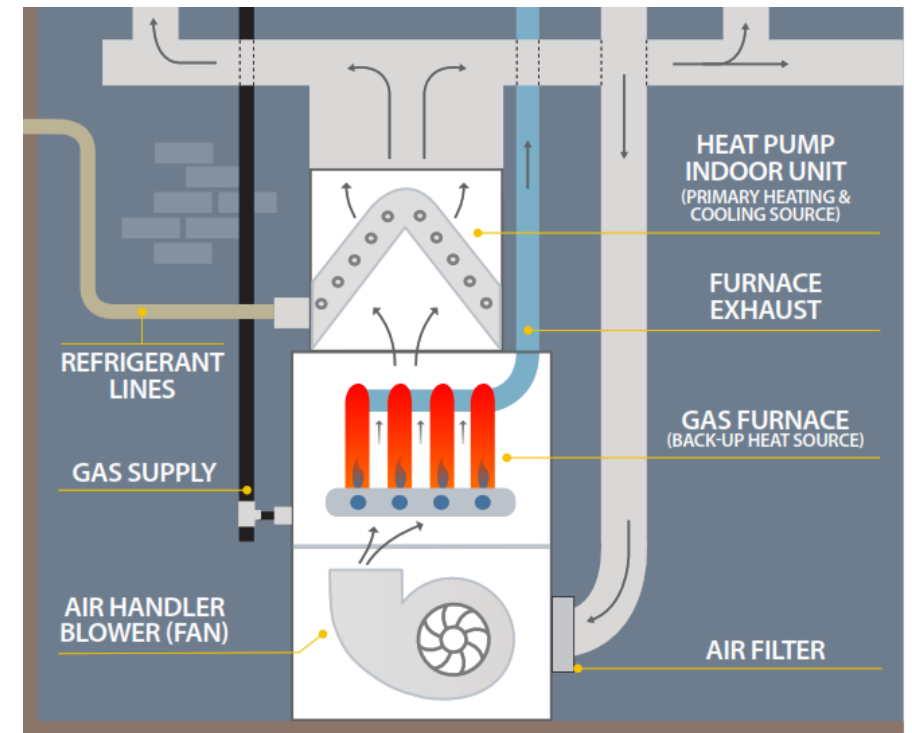
Midwest opportunity for dual fuel heat pumps

Scale of Opportunity

- 76% of Midwestern homes use natural gas or propane and 83% use a furnace as their main heating equipment

Multiple Beneficiaries

- Dual fuel heat pumps offer benefits to utilities, distributors, contractors, and customers



Types of dual fuel/hybrid heat pumps

	Single or two speed system	Modern-inverter system	Standalone add-on inverter system	Multizone Inverter system
Gas furnace	Basic	Modern, communicating	Basic, non-specific	Modern, communicating
Typical control types	24V thermostat with outdoor temp sensor	Full digital communication	24V thermostat with outdoor temp sensor	Full digital communication
Model examples	Available from all manufacturers	Top-tier from all manufacturers	<ul style="list-style-type: none"> • Bosch IDS • Gree Flexx • Mitsubishi Intelli-heat 	<ul style="list-style-type: none"> • Daikin VRV LIFE • Carrier/Bryant Crossover • Mitsubishi Intelli-heat
Relative Cost	Low	Moderate to High	Moderate	Moderate to High
Cold-climate potential performance	No	Yes	Yes	Yes

Providing Michigan Contractors Proof

Site	ASHP Compressor Speeds	Incremental cost	Propane reduction	Simple payback	Lockout (°F)
6	Variable	\$2,000	43%	7 years	28
8	One	\$600	63%	1 year	25
Avg		\$2,000	53%	4 years	



Source: <https://slipstreaminc.org/research/dual-fuel-air-source-heat-pump-pilot>

Utility contractor training and education

- Grounded in research
- Responsive to market needs
- Leverage distributor and manufacturer partnerships
- Flexibility and creativity in training delivery



Primary utility training target audience includes the equipment specifier

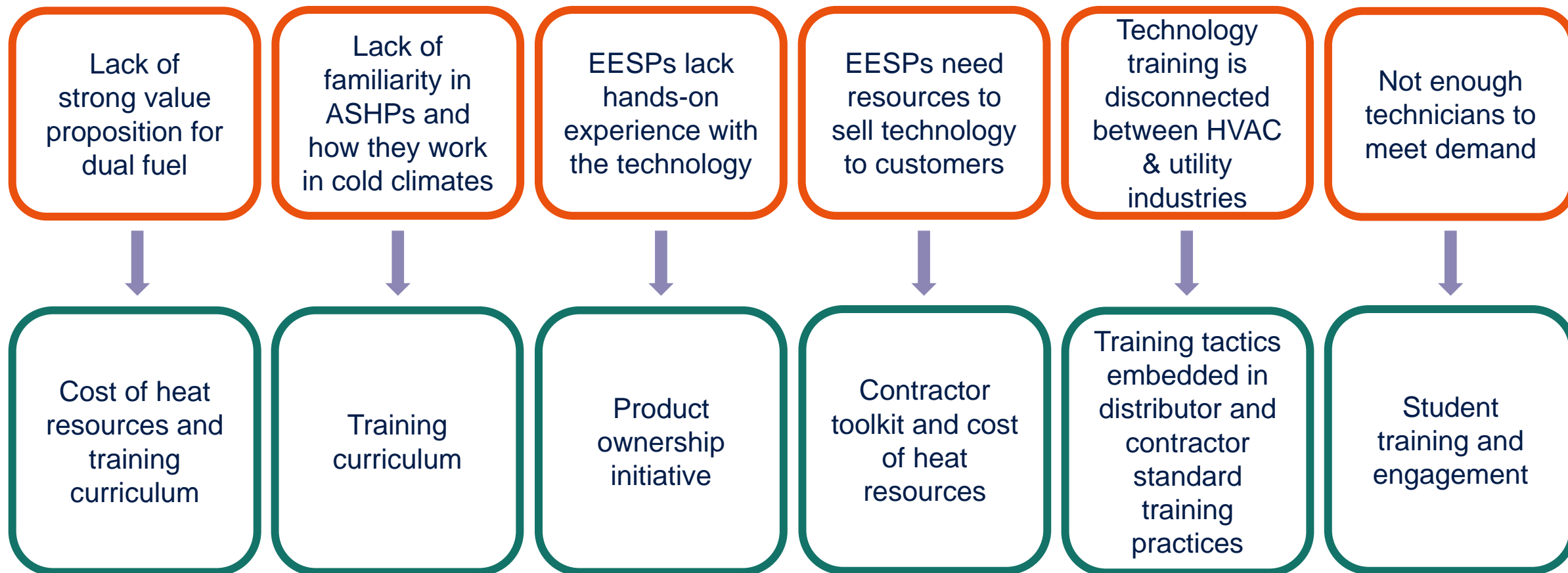
HVAC Contractors Key Staff Roles

- Owners
- Sales (i.e. comfort advisors)
- Installing technicians
- Front office administrative staff



“A selling technician represents less than 20% of all technicians” ~Manufacturer

Example from ComEd: Needs Assessment to Training

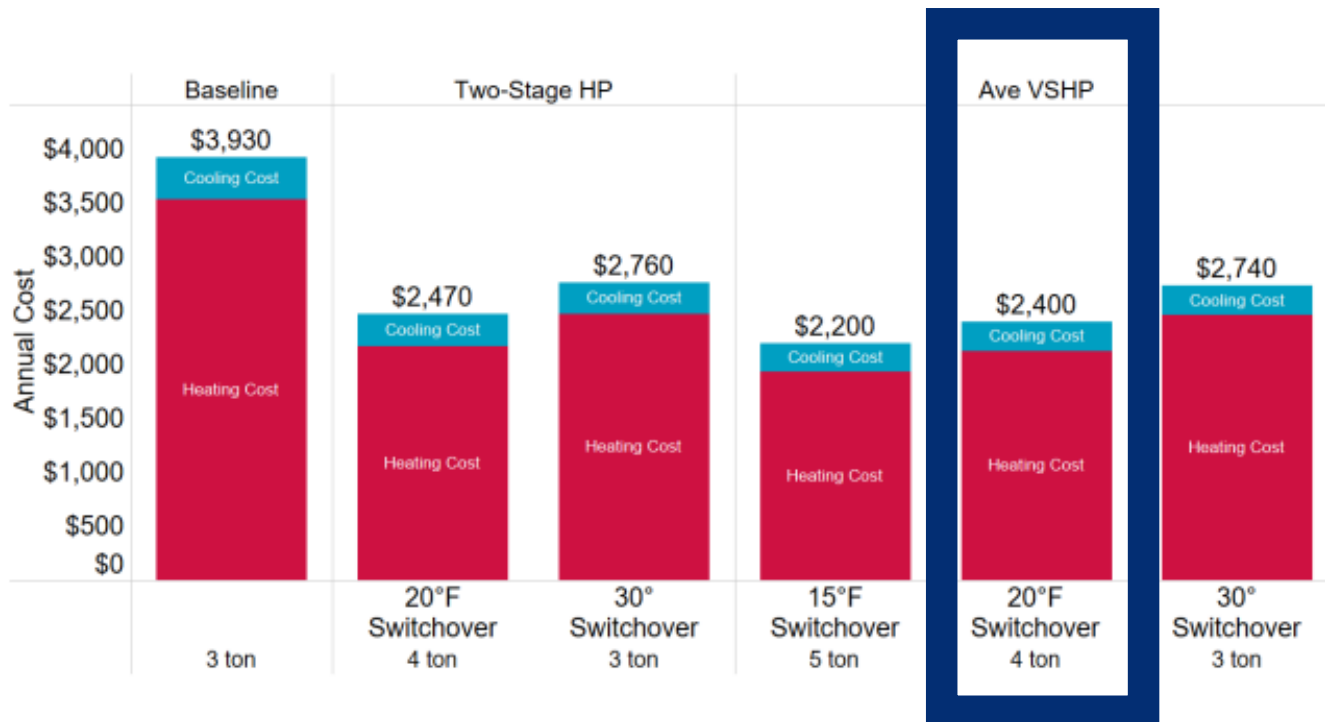


Barriers identified by the needs assessment



Training interventions from our plan to address barriers

2022 Example from ComEd



- Baseline annual cost less projected annual cost = yearly savings
- New equipment cost = equipment + labor - midstream incentive - tax credit
- Payback in years = new equipment cost/yearly savings
- Example:
 - Yearly savings = $3,930 - 2,400 = 1,530$
 - Equipment cost = $\$8,000 - 1,400 - 500 = \$6,100$
 - Payback = $6,100 / 1,530 = 4$ years!

Connecting Customers and Contractors

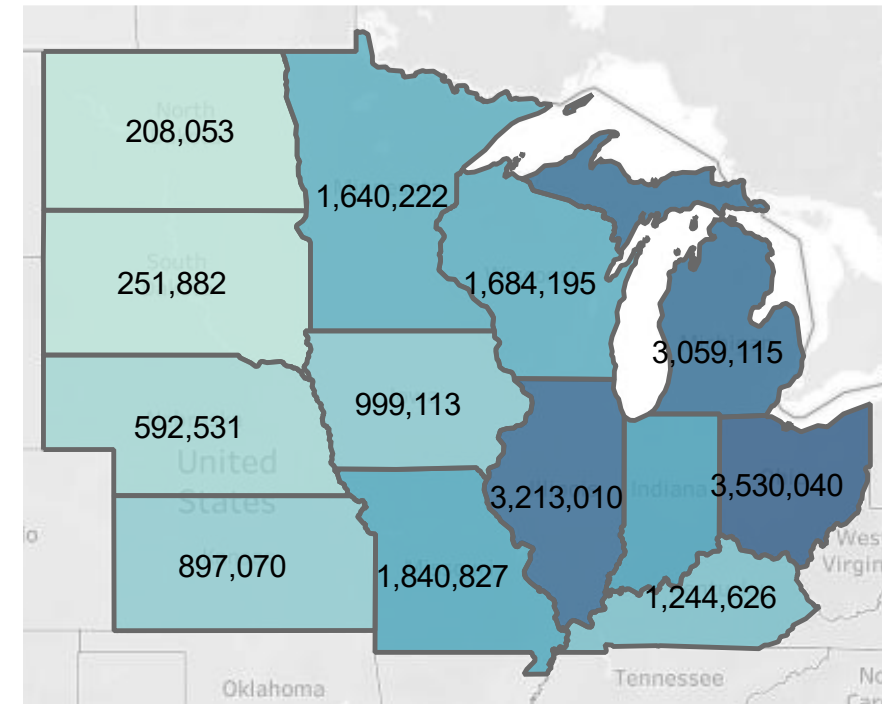
- **Premise:** customers need guidance on which contractors to contact who have experience, proficiency, and confidence in the technology
- The main goals of a designation are to:
 - Capture early heat pump adopters
 - Generate customer confidence in contractors



Midwest ASHP Collaborative

Accelerating ASHP adoption faster and better, together

- Funded by Pacific Northwest National Laboratory (PNNL)
- Delivered by **CEE** and **Slipstream**
 - In partnership with **MEEA** and **Elevate**
- Objectives:
 - Cross pollinating program best practices
 - Rate design for heat pumps
 - Workforce development
 - Regional market transformation strategy



Number of SFH per state

Thank you!



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“The 5 Biggest Industry Misconceptions
About Air-Source Heat Pumps”

~Kevin DeMaster, Mitsubishi Electric