Michigan Heat Pump Collaborative Summit

October 26, 2023

Welcome and Introduction

MI HEAT PUMP COLLABORATIVE

Agenda

Time	Session
9:00 – 9:30	Welcome & Introduction
9:30 – 10:15	Manufacturer Panel
10:15 – 10:30	Networking Break
10:30 – 11:15	Distributor Panel
11:15– 11:45	Incentives, Financing & Tax Credits
11:45 – 12:15	Are you ready discussion
12:15 – 1:15	Lunch & Networking

What is the Michigan Heat Pump Collaborative?

- The Michigan Heat Pump Collaborative aims to remove barriers to increase the adoption of heat pumps in Michigan.
- It is designed to bring top tier heat pump education opportunities and resources to contractors supporting Michigan residents.
- We are here to support you!
- Sponsored by:

Consumers Energy Count on Us®

DTE

INDIANA MICHIGAN POWER℠ An AEP Company

UPPCO®

MI HEAT PUMP COLLABORATIVE

Halloween Safety

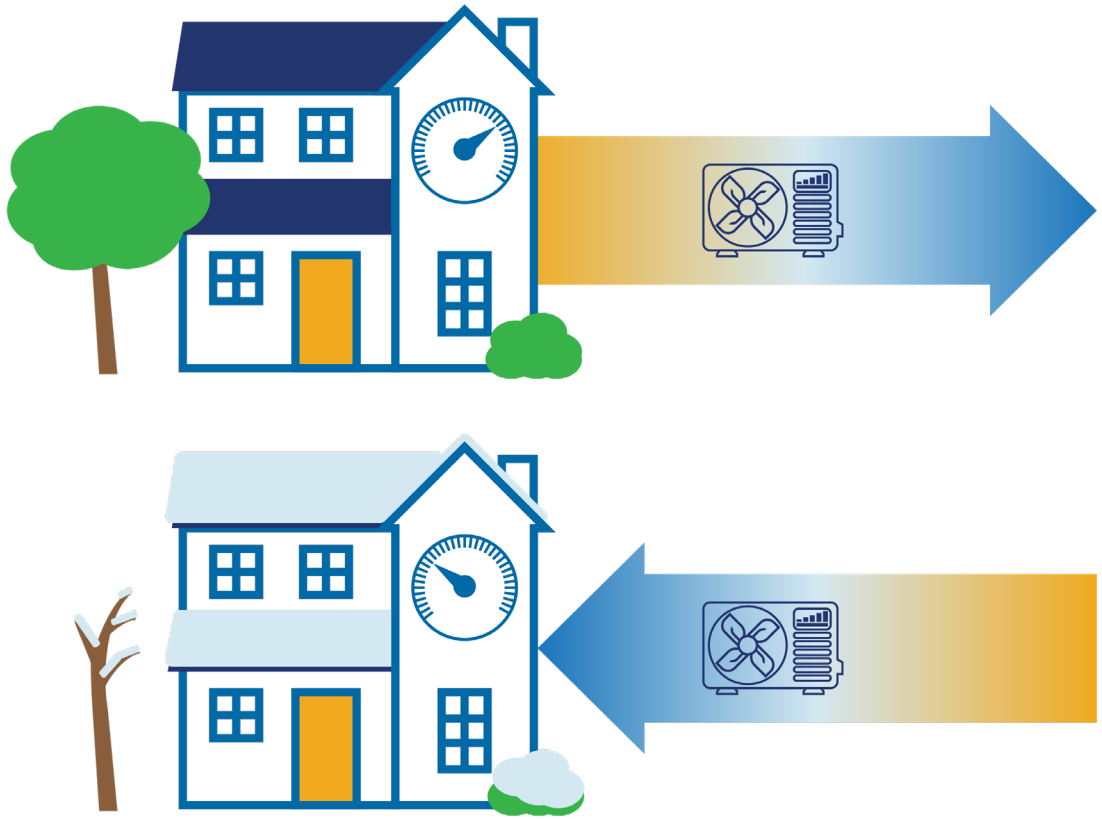
- Fasten reflective tape to children's costumes and bags, or give them glow sticks
- Watch for children walking on roadways, medians and curbs
- Enter and exit driveways and alleys carefully
- At twilight and later in the evening, watch for children in dark clothing
- Discourage new, inexperienced drivers from driving on Halloween

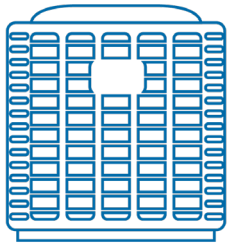
National Safety Council

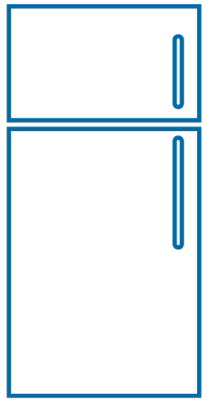
Our Approach

- Be responsive to needs in the market
- Be adaptable to external forces
- Leverage distributor and manufacturer partnerships
- Employ flexibility and creativity in training delivery
- Provide information to supply chain that is grounded in research

What is a heat pump?

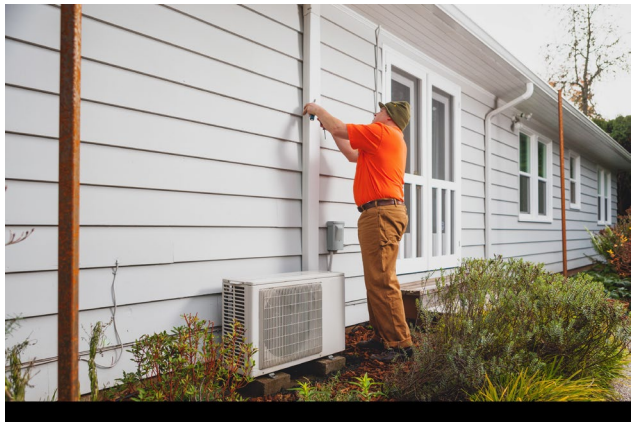




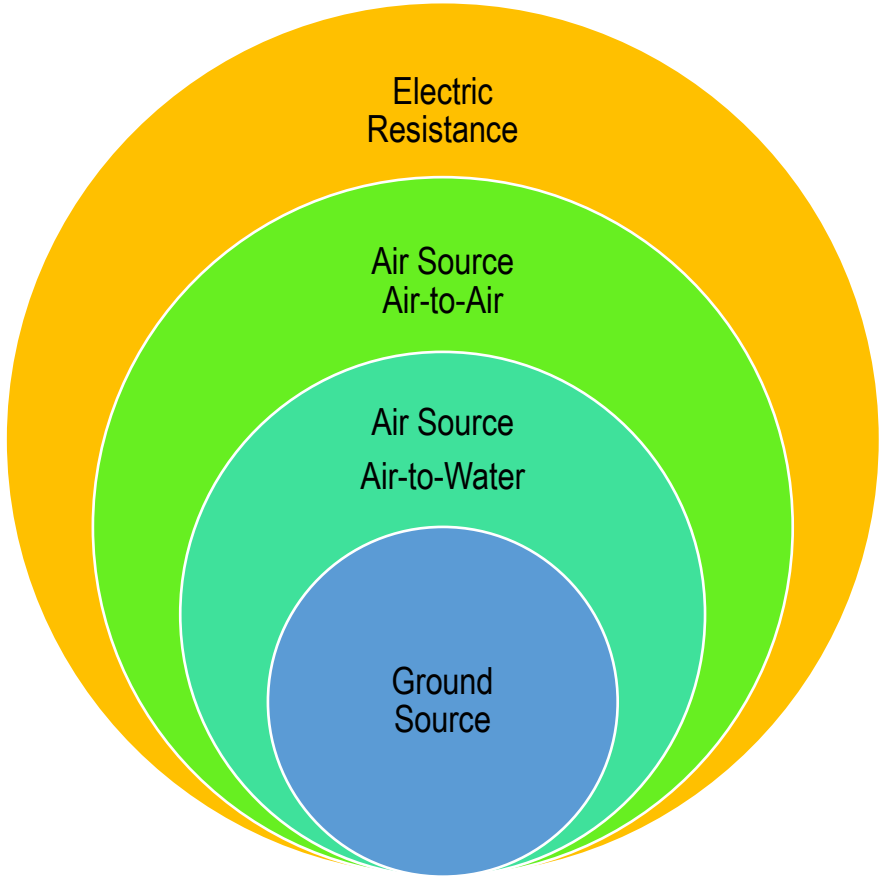


In Focus: Residential Electric Heat Pumps

- **Air-to-air**
  - **Minisplit heat pumps**
  - **Centrally ducted heat pumps**
  - **Dual-fuel heat pumps**
- Air-to-water heat pumps
- Ground source heat pumps
- Heat pump water heaters
- Commercial heat pumps
  - VRF heat pumps
  - RTU heat pumps
  - Central heat pump water heaters
- Industrial heat pumps



Electric Heat Efficiency Comparison



Heat pump water heaters field performance in MI

- Available since 2009
- Great technology for replacing electric resistance water heaters in basements of single-family homes!
- Advanced features that homeowners want
- No detectable space heating impact

Baseline	Operating Cost Savings	
	Heat Pump Mode	Hybrid Mode
Electric Resistance	$304	$274
Propane	$213	$182
Natural Gas	$19	$ -12

Source: Michigan HPWH field study (2022)

Where we've been

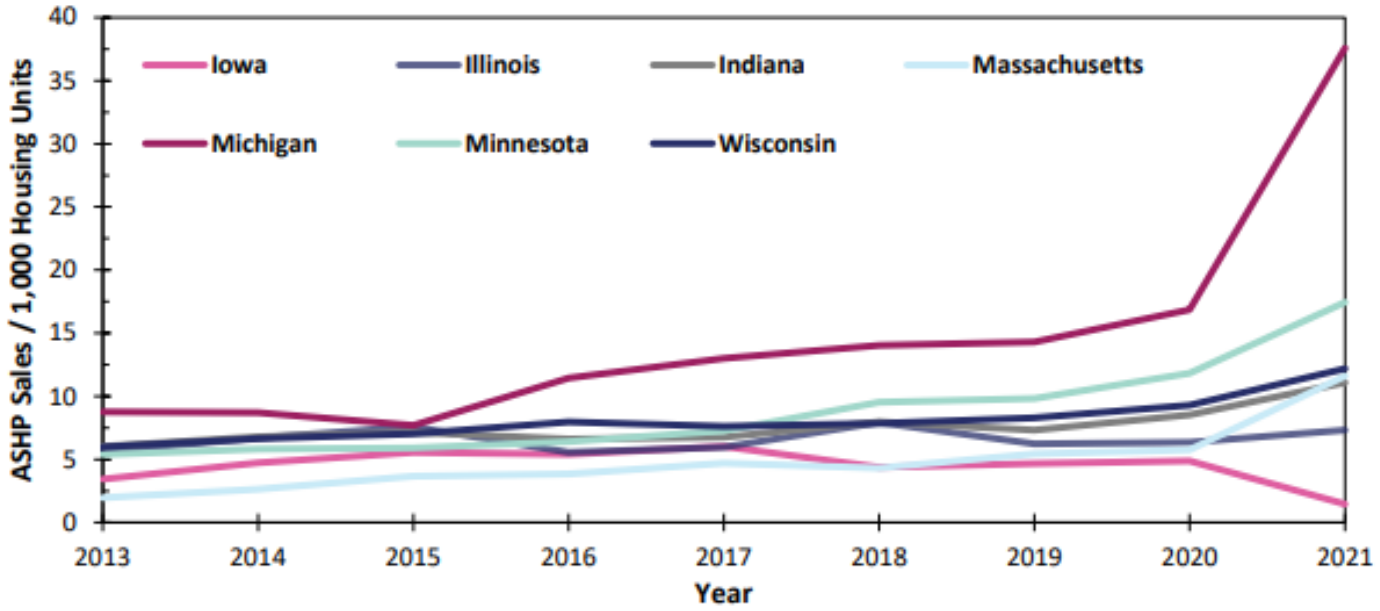


Figure 3. Changes in housing normalized ASHP sales by state from 2013 to 2021 (Data obtained from Unity Market Report (2022) prepared by HARDI under data license by HARDI. Reuse is prohibited without permission. All rights reserved.)

CANARY MEDIA

HOME OF THE FUTURE

This is part of our special series "Home of the Future." Read more.

Chart: Americans bought more heat pumps than gas furnaces last year

Even before Inflation Reduction Act incentives kicked in, Americans bought more heat pumps than ever before last year — well over 4 million.

10 February 2023

Residential heat pump market is in period of intense change

Technology

- Ongoing product development and technology advancements
- Innovations in software, tools, and controls

People

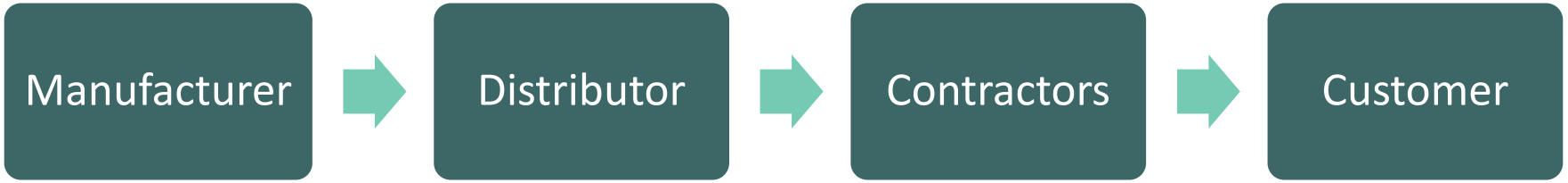
- Changing labor force; need for more tradespeople
- Homeowner and contractor education needed
- Energy Efficiency actors ramping up demands on heat pump technologies

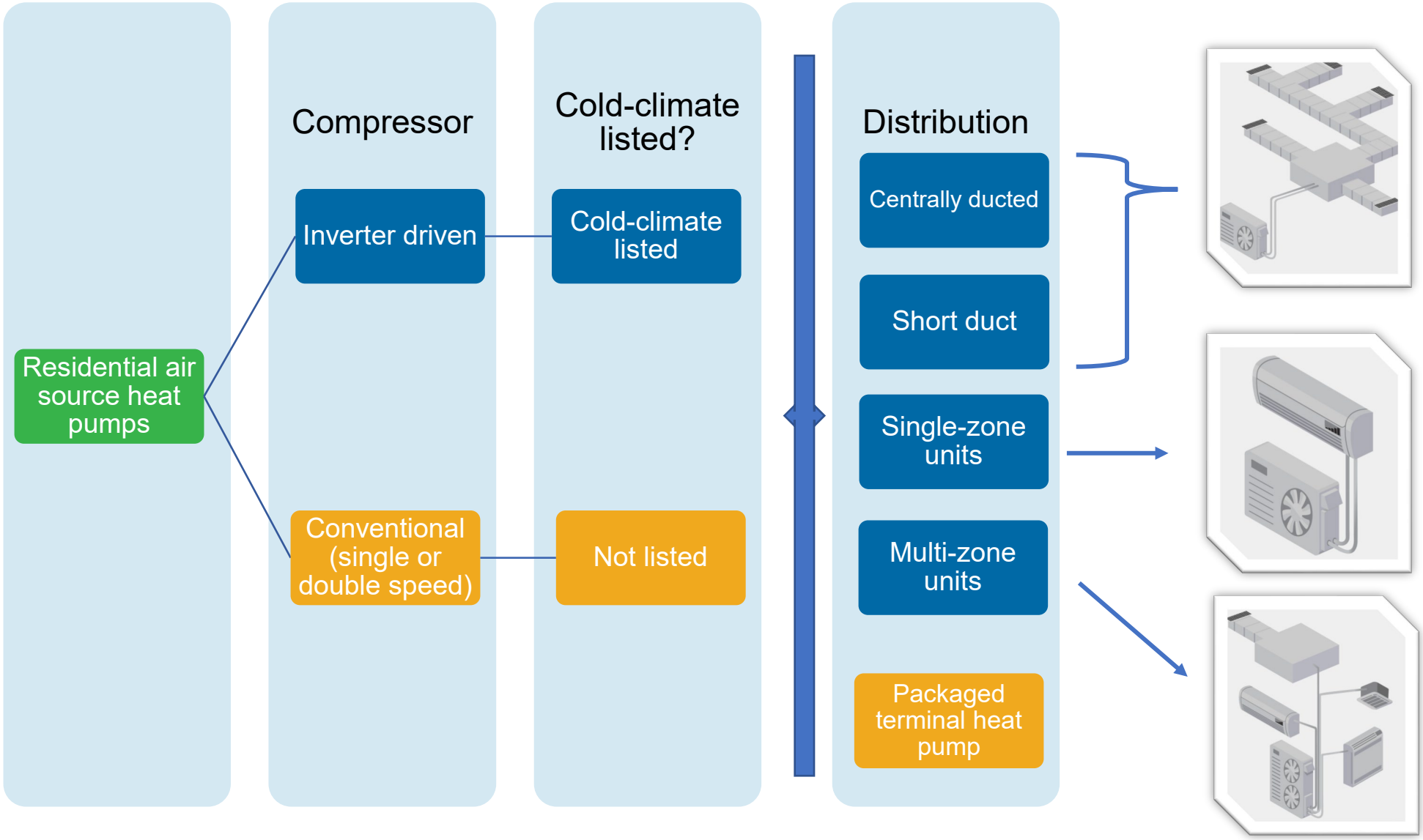
Regulations and policy

- Changing efficiency metrics and minimum efficiencies
- Refrigerant global warming potential drawdowns
- Electrification attention and dollars (federal, state, local)

Supply chain

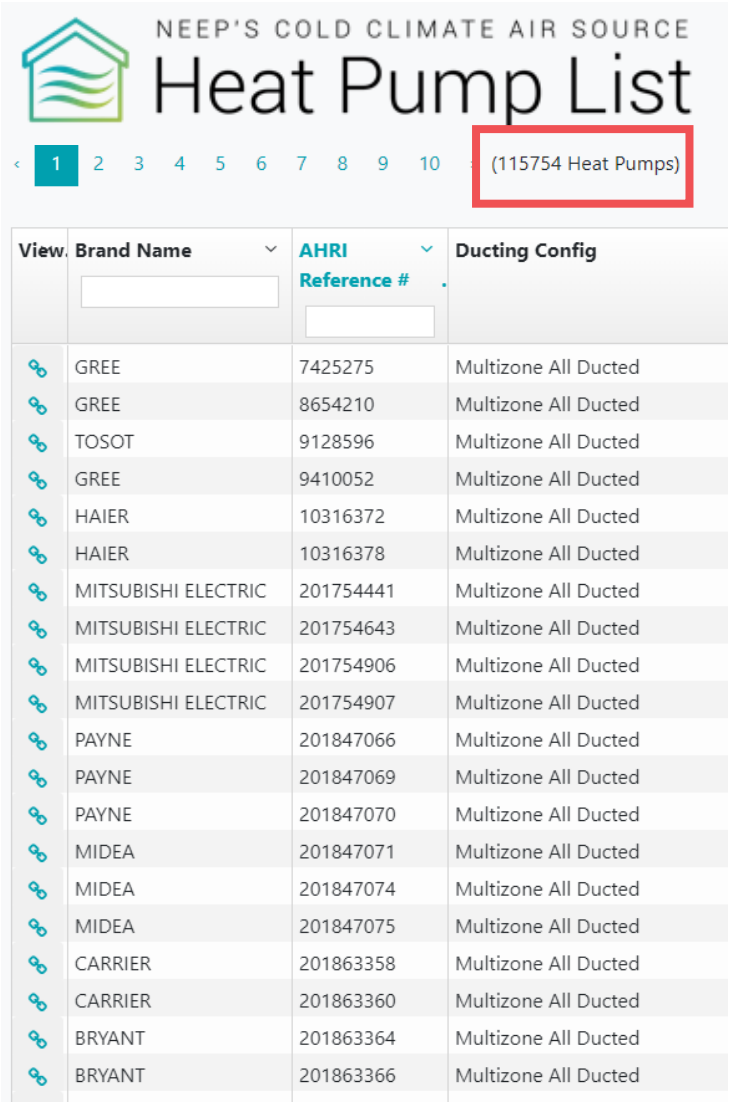
- Constraints and inflation increase wait time and cost
- Distributor stocking liability
- Supply chain recovering from COVID-19 restrictions




Residential air source heat pumps
Compressor
Inverter driven
Conventional (single or double speed)
Cold-climate listed?
Cold-climate listed
Not listed
Distribution
Centrally ducted
Short duct
Single-zone units
Multi-zone units
Packaged terminal heat pump

Air Source Heat Pumps in cold and very cold climates

- Cold Climate ASHPs offer promise for large site energy savings and emissions reductions
- Many models do work at very cold design temperatures
- But they still have capacity limitations compared to space heating needs



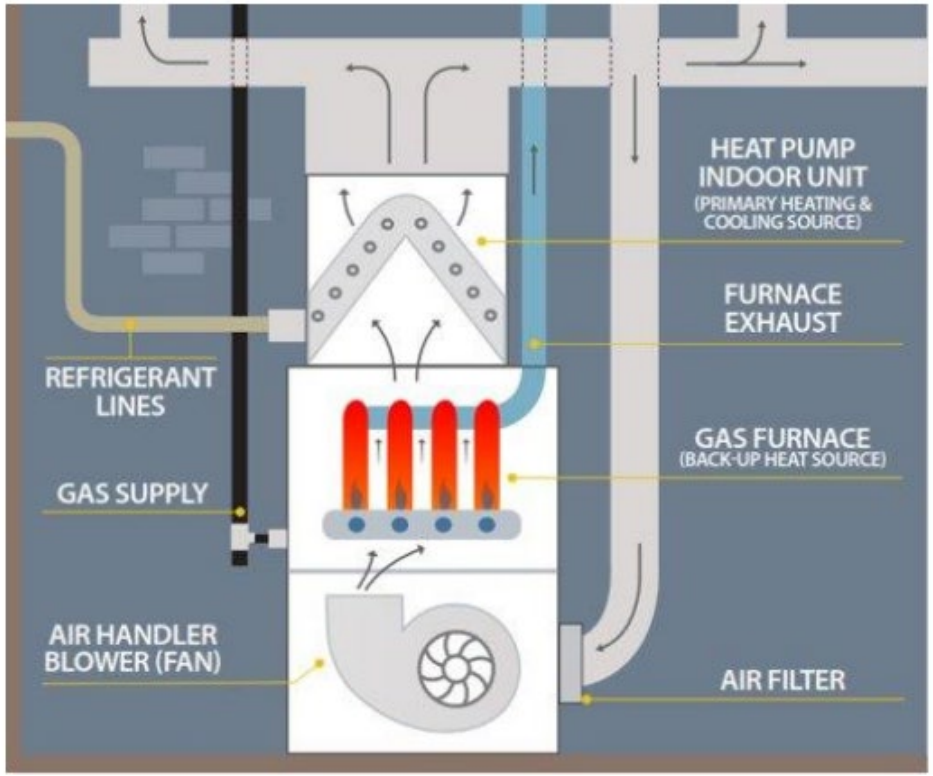
NEEP'S COLD CLIMATE AIR SOURCE
Heat Pump List

‹ 1 2 3 4 5 6 7 8 9 10 › (115754 Heat Pumps)

View	Brand Name	AHRI Reference #	Ducting Config
	GREE	7425275	Multizone All Ducted
	GREE	8654210	Multizone All Ducted
	TOSOT	9128596	Multizone All Ducted
	GREE	9410052	Multizone All Ducted
	HAIER	10316372	Multizone All Ducted
	HAIER	10316378	Multizone All Ducted
	MITSUBISHI ELECTRIC	201754441	Multizone All Ducted
	MITSUBISHI ELECTRIC	201754643	Multizone All Ducted
	MITSUBISHI ELECTRIC	201754906	Multizone All Ducted
	MITSUBISHI ELECTRIC	201754907	Multizone All Ducted
	PAYNE	201847066	Multizone All Ducted
	PAYNE	201847069	Multizone All Ducted
	PAYNE	201847070	Multizone All Ducted
	MIDEA	201847071	Multizone All Ducted
	MIDEA	201847074	Multizone All Ducted
	MIDEA	201847075	Multizone All Ducted
	CARRIER	201863358	Multizone All Ducted
	CARRIER	201863360	Multizone All Ducted
	BRYANT	201863364	Multizone All Ducted
	BRYANT	201863366	Multizone All Ducted

https://ashp.neep.org/

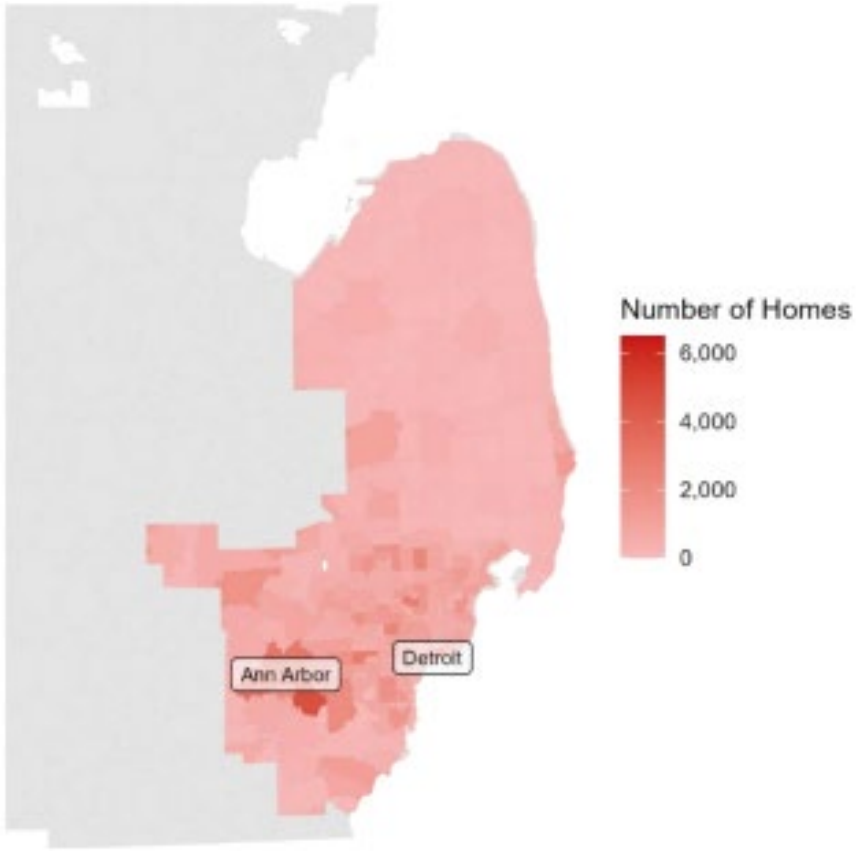
Dual fuel heat pumps



	Model examples	Relative Cost	Cold-climate potential performance
Single or two-speed	Available from all manufacturers	Low	No
Modern inverter system	Top-tier from all manufacturers	Moderate to High	Yes
Standalone add-on inverter system (outdoor unit + indoor coil)	Bosch IDS Gree Flexx Mitsubishi Intelli-heat Samsung Hylex	Moderate	Yes
Multizone inverter system	Daikin VRV LIFE Carrier/Bryant Crossover Mitsubishi Intelli-heat	Moderate to High	Yes

DTE service territory residential fuel types

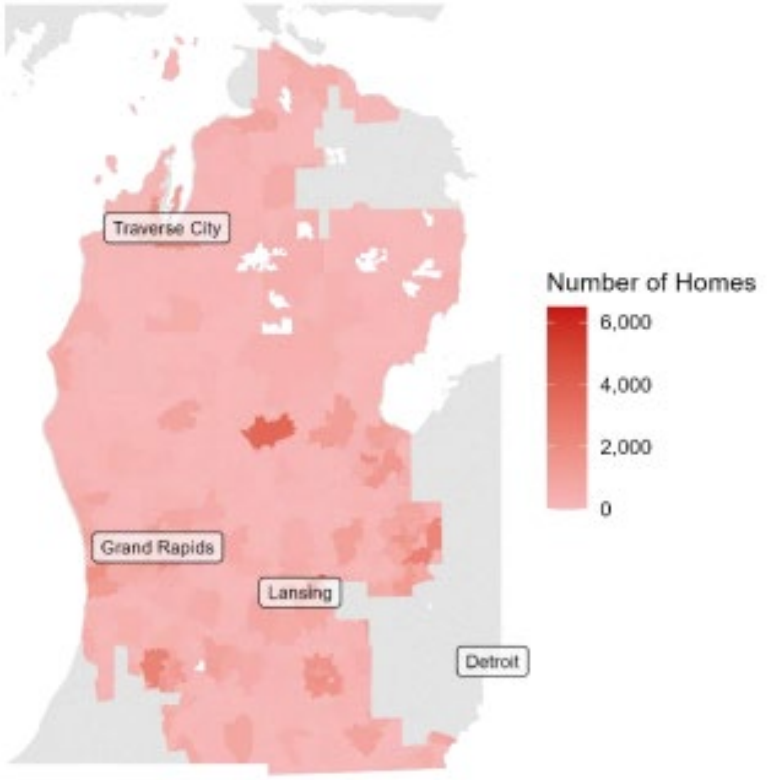
	Space Heating (%)	Space Heating (count)	Water Heating (%)	Water Heating (Count)
Natural Gas	85%	1,791,295	80%	1,718,982
Electric	10%	203,843	18%	548,421
Propane	3%	67,469	2%	156,901
Wood	1%	16,333	-	-
Other	1%	30,188	-	-



Prevalence of electric space heating across DTE service territory

Consumers Energy service territory residential fuel types

	Space Heating (%)	Space Heating (count)	Water Heating (%)	Water Heating (Count)
Natural Gas	70%	1,198,244	64%	1,300,495
Electric	10%	164,179	27%	548,421
Propane	13%	216,210	8%	156,901
Wood	5%	81,454	-	-
Other	3%	58,411	1%	12,270



Prevalence of electric space heating across Consumers Energy service territory

Dual fuel field performance in Michigan

Site	ASHP Compressor Speeds	Incremental cost	Propane reduction	Simple payback	Lockout (°F)
1	Variable	$2,600	64%	4 years	20
2	Variable	$3,200	50%	5 years	25
3*	Variable	$2,400	41%	9 years	30
4	Variable	$2,600	67%	3 years	None
5	Two	$900	59%	2 years	None
6	Five	$2,000	43%	7 years	28
7	One	$700	34%	3 years	20
8	One	$600	63%	1 year	25

*On NEEP cold-climate qualification list

Source: MI Dual Fuel Heat Pump Field Study (2020)

THANK YOU

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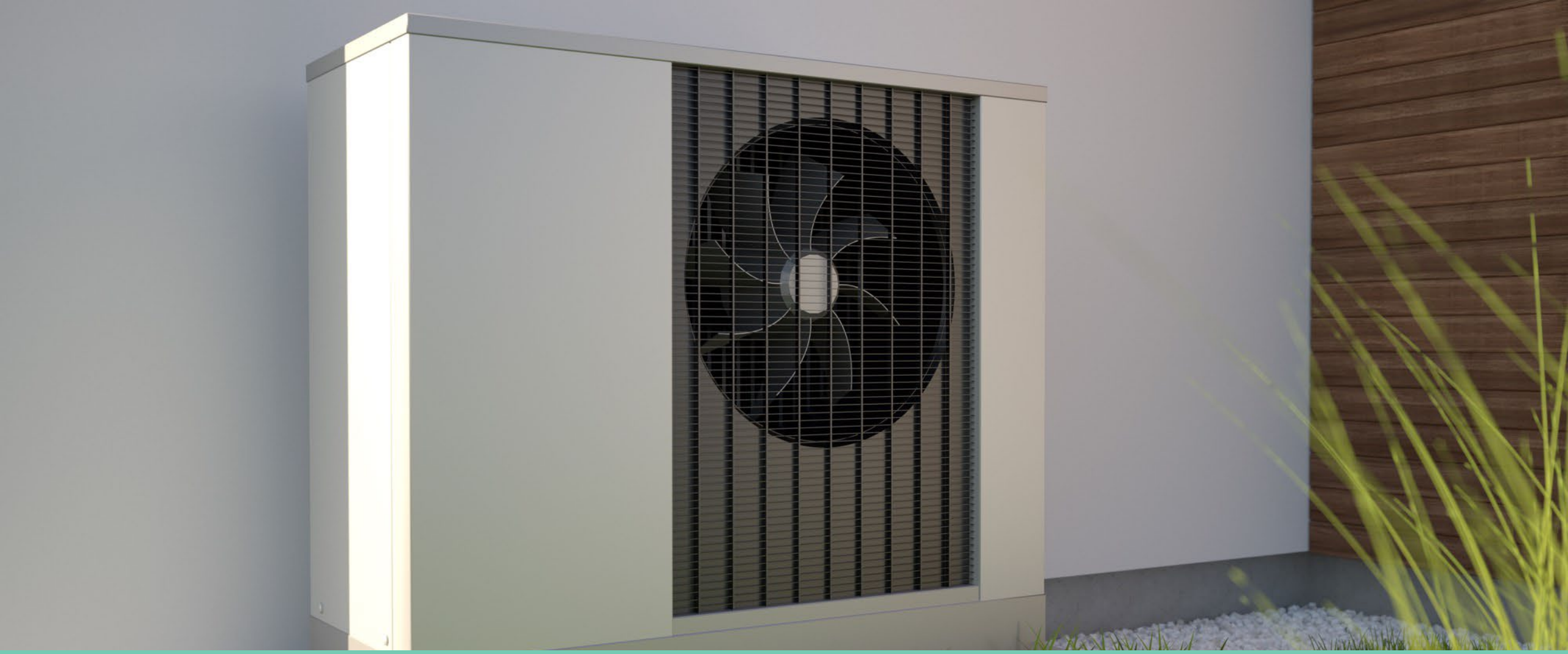
Manufacturer Panel

Moderated by Justin Margolies

Dianna Cacko, Mitsubishi

Daikin

Charlie Elliot, LG



Networking Break!

Distributor Panel

Moderated by Deb Dynako

Andrew Avery, Robertson Supply

Tim Brusseau, Johnstone Supply

Lee Kramer, Munch Supply

Terry Tarantine, Young Supply

Incentives, Tax Credits & Financing

October 26, 2023

MI HEAT PUMP COLLABORATIVE

Agenda

- Utility Incentives Available
  - Consumers Energy
  - DTE
  - Indiana Michigan Power
  - UPPCO
- Tax Credits
- Financing – Michigan Saves

Utility Incentives – Consumers Energy

	Market Rate HVAC (2023)	Multifamily (2023)
Central Air Source	15.0-15.99SEER/14.3 SEER2 = $150 16.0 SEER/15.2 SEER2 = $250 *Replacement for existing heat pump only*	14.5 SEER, 8.7 HSPF = $15/ton 16 SEER, 9.0 HSPF = $35/ton 18 SEER, 9.7 HSPF = $65/ton 21 SEER, 9.7 HSPF = $95/ton
Ductless Mini Split	18-20.99 SEER/17-20 SEER2 = $250 21.0 SEER/20 SEER2 = $350 *Replacement for any primary electric heat system*	Custom Incentive
Ground Source	17 EER $200 19 EER $300 *Replacement for existing heat pump only*	Custom Incentive
Heat Pump Water Heaters	UEF > 2.2, up to 55 gal = $750 *Midstream*	UEF ≥ 2.0 = $250 UEF ≥ 2.5 = $300 UEF ≥ 3.0 = $350 UEF ≥ 3.5 = $400

Utility Incentives – DTE

	Market Rate HVAC (2023, 2024 TBD)	Multifamily (2024 Rates)	Multifamily Income Qualified (2024 Rates)
Central Air Source	15 SEER/ 14.3 SEER2 = $150 16 SEER-17/ 15.2 SEER2 =$250 18 SEER/ 17 SEER2 = $750 19 SEER/ 18 SEER2 = $850	PTHP – See Program Guide for Details $75/ton	PTHP – See Program Guide for Details $750/ton
Ductless Mini Split	18+ SEER, 8.8 +HSPF or = $1,000 17+ SEER2 and HSPF2 7.5+	18 SEER, 9 HSPF ≤ 1.5 tons = $1,400 >1.5 tons = $1,700	18 SEER, 9 HSPF ≤ 1.5 tons = $5,000 per living unit >1.5 tons = $6,000
Ground Source	17+ SEER or = $800 16+ EER2		
Heat Pump Water Heaters	UEF ≥ 2.2, up to 55 gal = $750 *Midstream*	ENERGY STAR = $500	ENERGY STAR = $2,000

Utility Incentives – Indiana Michigan Power

	Market Rate HVAC – All Midstream (2023)
Central Air Source	16 SEER = $250 17 SEER = $350 18+ SEER = $550
Ductless Mini Split	19 SEER & 9.5HSPF = $200 21 SEER & 10 HSPF = $350 23+ SEER & 10 HSPF =$550
Ground Source	20+ SEER $450
Heat Pump Water Heaters	UEF ≥ 2.0 = $350

Utility Incentives – UPPCO

	Market Rate HVAC (2023)
Central Air Source	$300.00/ton minimum SEER of 15 +$100 /ton for SEER greater than 21 +$100 /ton for HSPF greater than 10 +$200 /ton for inclusion on the NEEP CCASHP Product List **Up to $700 per ton**
Ductless Mini Split	
Ground Source	
Heat Pump Water Heaters	UEF ≥ 3.0 = $350 UEF ≥ 3.5 = $600

Tax Credits

- Air Source Heat Pumps
  - Available for products purchased and installed between January 1, 2023 and December 31, 2032
  - 30% of project cost up to $2,000
  - Ducted: ENERGY STAR Cold Climate with EER 2 ≥ 10
  - Ductless: ENERGY STAR Cold Climate with SEER 2 ≥ 16, EER 2 ≥ 9, HSPF 2 ≥ 9.5

Tax Credits

- Heat Pump Water Heaters
  - 30% of project cost, up to $2,000
  - ENERGY STAR certified
- Of note for EE Home Improvement Tax Credits
  - $3,200 for all efficiency tax credits
  - $2,000 is the limit annually for HVAC; ground source not included in this limit
  - New construction and rentals do not apply
  - More info available at **energystar.gov**

Residential Clean Energy Tax Credits

- Ground Source Heat Pumps
  - Separate from the Heating & Cooling Tax Credit
  - 26% if placed in service after December 31, 2019 and before January 1, 2022
  - 30% if placed in service after December 31, 2021 and before January 1, 2033
  - ENERGY STAR certified

Home Efficiency Rebates (50121)

- Rebates for energy efficiency upgrades
- Homes modeled to save at least 20% of energy use
- Households at or below 80% AMI are eligible for higher rebates, capped at $8,000
- Will likely be administered by EGLE

Home Electrification & Appliance Rebates (50122)

- Households at or below 80% AMI are eligible for higher rebates, capped at $14,000
- Will be administered by EGLE, likely beginning October 2024

Product	Maximum Rebate
Heat Pump Water Hater	$1,750
Heat Pump for Space Heating or Cooling	$8,000
Electric Stove, Cooktop, Range, Oven	$840
Heat Pump Clothes Dryer	$840
Building Materials Electric Load Service Center	$4,000
Insulation, Air Sealing, and Ventilation	$1,600
Electric Wiring	$2,500

Michigan Saves Financing and Electrification

Mac McCabe

248-249-3775

MichiganSaves.org

Michigan Saves®
The Nation's First Nonprofit Green Bank

Residential Loan Offering

Unsecured loans for all types of energy efficiency and clean energy improvements

- **Loan type:** Unsecured, personal loan
  - No collateral required; no lien on home
- **Loan amount:** $1,000 to $100,000
- **Loan term:** Up to 25 years
  - For loans < $4,999, term is one year for every $1,000 financed
  - For loans > $5,000, borrower can select terms up to 15 years, depending on the loan amount, lender, and credit score
- **Interest rates:** Fixed rates, 7.69% to 11.5% APR
  - Interest rates vary by lender and borrower credit scores

"It's great for our daughter to grow up in a house where we're using renewable energy as a primary source and showing her that it's normal and good."

DRURY FAMILY

Electrification Program

- Provides leads for contractors.
- Teaches contractors electrification basics.
- For energy auditors and contractors that install heat pumps (water heater, air source, geothermal), solar, electrical panel upgrades and induction stoves.
- It breaks down the myths about electrification. For example: heat pumps don’t work in cold weather, Michigan doesn’t have enough sun for solar and the grid can’t handle electrification.

Electrification Program

- There are 5 videos and 5 tests. Score 80% or higher to get a passing grade.
- Earn a badge that is displayed on our contractor locator. The contractor can also use the badge in any marketing materials.
- Leads from around Michigan will be funneled to the Michigan Saves contractor locator. Leads will come from our partners, like Ann Arbor, but also from direct marketing efforts such as Google Ads.
- Badged contractors have access to exclusive resources.

Kelley Brothers LC	• Heating, Ventilation, and Air Conditioning (HVAC) • Geothermal • Duct Sealing • Boilers • Water Heaters • Generators • **Heat Pumps/Mini-splits**	Contact Kelley Brothers LC 37100 Amrhein Rd, Livonia, MI 48150-1107 734-462-6266 www.kelleybrothersllc.com 26.85 miles away	★★★★★ 4.7 3 Reviews
Expert Heating & Cooling Michigan Saves ELECTRIFICATION BADGE	• Heating, Ventilation, and Air Conditioning (HVAC) • **Heat Pumps/Mini-splits** • Electrification	Contact Expert Heating & Cooling 24400 Northline Rd, Taylor, MI 48180-4588 734-676-4488 expertheatcool.com 37 miles away	★★★★★ 5 22 Reviews

Thank you.

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THANK YOU

MI
HEAT PUMP COLLABORATIVE

Are You Ready?

MI

HEAT PUMP COLLABORATIVE

Agenda

- Why you need to prepare
- How we can help you prepare
- Discussion

Our Approach

- Be responsive to market actor needs
- Be adaptable to external forces
- Leverage distributor and manufacturer partnerships
- Employ flexibility and creativity in training delivery
- Provide information to supply chain that is grounded in research

Consumer Demand is Growing!

- Homeowners want more efficient options and choices
- Rebates from utilities are attracting consumers
- Tax credits are here and federal rebates are coming
- More products are coming to meet homes need for efficiency

Customers Becoming More Aware of ASHPs

- About half of homeowners are aware of how heat pumps differ from air conditioners
- Most homeowners would pay more on a heat pump that delivers on performance claims
- For those that purchased heat pumps, homeowners recommended heat pumps to others for following benefits:
  - saving money
  - better efficiency
  - reduced emissions
  - better cooling performance

Replacements are Opportunities for Change

67%

Are unsatisfied or somewhat unsatisfied
with their ***current*** heating system

source: 6th annual NW DHP Project Market Progress Report

Customer-first approach

- Customers awareness and interest is growing
- Listening to pain points, needs, and wants
- Emotional ties
- Orient around building solutions to meet needs of client

Building a replacement culture increases business profits

- Heat pumps increase the ticket total and net profit
- Rebates and tax credits **reduce consumer cost**
- Heat pumps can **solve larger comfort issues**
- Quality replacements will increase **customer referrals**

We're Here to Help You

Training On-Demand

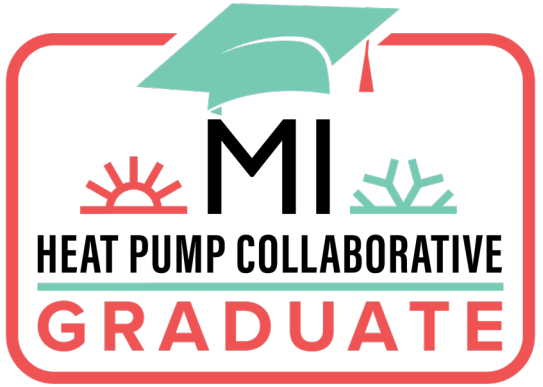
- All our trainings are available on-demand.
- Join our learning management workspace to take advantage of these courses on your own time, pass the quizzes, and even earn a designation to set yourself apart.
- Content currently available:
  - Heat Pump Water Heater Distributor Trainings – with AO Smith, Bradford White and Rheem
  - Why Offer Heat Pumps?
  - Introduction to Heat Pumps and Heating Applications
  - Sales and Marketing for Heat Pumps
  - ASHP Equipment Selection and Configuration for Successful Installation
  - Introduction to Cold-Climate Air-to-Water Heat Pumps

Become a Graduate

- The designation functions on an individual basis with requirements customized to different heat pump types, based on your business model
  - Heat pump water heaters
  - Unitary (air source) heat pumps
  - Mini-split heat pumps
  - Geothermal heat pumps
  - Air-to-water heat pumps
- Visit us at miheatpumps.com/graduate-designation

Benefits of Graduate

- Help connect you to customers looking to install heat pumps
- Promote the designation on your website/social/materials
- Listed on our contractor search page
- Access to educational resources for your customers
- Promotion on sponsor utility websites



Designation Eligibility

- Valid MI Mechanical contractors license
- Certification of completion for manufacturer training for primary heat pump brands sold
- Agrees to contractor code of conduct to
  - Help customer pick the best heat pump and configure appropriately
  - Provide education on operation and controls
  - Supports system after installation with annual maintenance
- Attend webinars to learn out about current products, terminology, and incentives or completes modules at own pace

What's Coming Next?

Upcoming trainings this year:

- Sizing: The 'why, what and how' of sizing ASHPs.
- Tools & Recommended Installation Practices

Customer educational materials coming soon.

2024 training topics

- Controls
- AC replacements
- New construction
- Multifamily applications

We can bring training directly to you!

Discussion

THANK YOU!

MIHeatPumps.com

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608.729.6860

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