2024 MES Pre-conference Workshop Breakout Session Notes

Midwest Air Source Heat Pump Collaborative

January 29, 2024

Thank you for joining the Midwest Air Source Heat Pump (ASHP) Collaborative pre-conference workshop. The Collaborative's aim for the workshop was to highlight the great work and perspectives of regional market actors and partners who have taken innovative and thoughtful approaches to overcome barriers identified in the market, building off insights shared during 2023's workshop breakout sessions. This year's breakout component was intended to provide an opportunity for attendees to ideate and problem solve in small groups covering nine topics critical to the Collaborative's goal of accelerating ASHP adoption in the region. The breakout sessions were dynamic, fostering actionable discussions, knowledge exchange, and networking opportunities for future engagement. Attendees shared valuable insights, new best practices, and experiences, which have been captured and summarized by topic and group below.

Thank you for your thoughtful participation in the workshop.

If you would like to learn more about or want to get involved with any of the Midwest ASHP Collaborative's 2024 initiatives, please connect with someone on our project team:

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Topics

- Contractor support
- Equity-focused deployment (2 groups)
- Equitable workforce development
- Incentive alignment (2 groups)
- Program design metrics (3 groups)
- Customer awareness and engagement
- Innovative rate options
- Success in other regions
- Path to 2050 decarbonization and the role of dual fuel (2 groups)

Breakout Session Notes

Contractor support

- Pushback to heat pumps is ever-present across many dichotomies.
    - Big vs. Small Companies
        - Big companies have the resources to participate in training programs and keep up with the latest trends. However, they might not want to jump on a new technology if they are making money with box swapping and replacements.

        - Small companies are more nimble and some might be willing to risk it with newer technology. But small shops can't always take training and pursue certifications.
    - Young vs. Old - Younger technicians are usually savvier with new technology and the tools and controls used with heat pumps.
    - Urban vs. Rural
        - Urban companies have greater access to training and are usually more connected to utility programs.
        - Rural companies are less trusting of utility and government rebate programs. But they are often more fluent in heat pumps because they encounter more homes heated by electric resistance and delivered fuels.
    - Salespeople vs. Technicians - Salespeople are very interested in heat pumps. They want to capitalize on the buzz and see higher potential commission from more expensive equipment. They might not fully grasp the increased effort on the installers and technicians.
- There is a need for more well-trained contractors. There needs to be a focus on the top of the funnel with a particular need for diversity in the industry. Utilities sometimes use designations and training requirements to temper programs and reduce program participation. There are not enough HVAC technicians entering the industry to replace the ones that are retiring (the ratio is 8:1 in the plumbing industry). Manufacturers and distributors often donate equipment to trade schools and community colleges, but they should be more involved in workforce development.
- Programs that use third-party trainers like Slipstream and CEE are seen as more trustworthy by contractors. Contractors might buy into training that is delivered by the utility. Manufacturer training can feel like a sales pitch and is equipment specific. Contractors still mostly get their training from the distributors, so working with them is vital. Contractors still prefer in-person training.
- If a program wants to recruit contractors for a designation, they need to provide leads and business development opportunities. Contractors should be compensated for their training time; offering food for their time is a bare minimum. Utility programs should make incentive applications easier. It is estimated that contractors spend $75 of administrative labor to submit an application. Some programs offer a fixed fee or percentage directly to the contractors for a rebate application.
- Wisconsin's increase in heat pump adoption seems to be partially driven by new construction. There's a "keeping up with the Joneses" mentality as homeowners look to emulate what's happening in new homes. Programs should work with builders, even if they are excluded from some incentive programs.

Equity-focused deployment

Table 1

- The industry needs to listen to the communities since they know their environment better than anyone; trust needs to be developed.
- Those who can benefit the most must be informed of and have access to programs and incentives and that includes building improvement programs that cause deferrals to energy efficiency programs.
- If a heat pump program is brought into a low-income community, local community members need to be hired to do the work.

- Economic development needs to be the focus of communication to avoid political pushback.
- Regulations need to be updated to allow for easier implementation.

Table 2

- Start with equity for deployment. Use integrated eligibility* for deployment of technology to historically marginalized communities. Heat pumps should not be only for those with resources. (* do not make people re-verify their need; use receipt of other benefits as the eligibility criteria for heat pump upgrades.)
- Whole home. Ensure there is a holistic upgrade to the home, focusing on weatherization and energy efficiency to avoid an automatic increase in electric bills.

Equitable workforce development

- Building collaboration cycles will entail some complications and a “case worker” type representative will likely be needed to address wrap-around services for the applicant and the Contractor business doing the hiring.
- Building the networks is difficult because it is being built out by “others” referring to disengaged parties like utilities and nonprofits that are not directly hiring the individuals as employees. It will be best to engage the interested candidates and employers together to ensure the proper support structure exists.
- One other avenue that will need to be addressed is the trade licensing path in the area the collaboration cycles are set up. Knowing the code enforcement policy and trade license process in the area will be important to fostering growth in the career development aspect of the new employees. Intervention may be needed to help transform policies to reduce bias.
- Individual applicant needs:
    - Interested individuals will be coming from all walks of life and many will be changing occupations. Wrap-around service networks should focus on pay gaps and child care as many of these interested parties will need these services as well as financial assistance. Building out available service networks for these and additional wrap-around services is very necessary.
    - Returning Citizens may face more difficulties due to restrictive background checks from employers. Residential companies are often scrutinized for the background of their workers as trust is a key factor. Many workers will be in homes that are occupied and homeowners may feel vulnerable. A metric for forgiveness may need to be put into place as well as legal services for expungement.
    - Drivers license issues may affect employability, and programs should try to incorporate a path for drivers license recovery. Helper or lead positions on 2 or more persons install crews may be able to accommodate a non-driver.
    - Many job transitioners and new to-the-workforce employees may need coursework to help ensure communication and other soft skills as well as tool knowledge and experience. Knowing what tools are right for the job and how the tools work may need to be taught separately from the technical knowledge for the skilled trade.

- Employer needs:
    - Often employers are not ready for new employees even though they need new employees. Ensuring the employing contractors have plans in place for future growth such as career plans and planned advancement opportunities as well as creating welcoming environments for **all** prospective employees is essential. A case worker or representative could facilitate growth opportunity planning and career mapping utilizing existing career maps. Clear performance metrics and advancement opportunities will ensure prospective employees won't feel like they're headed to a dead end. Some employees will be happy to attain a role and stay in that role for a longer time.
    - Employers are fearful of training their competition, employee retention plans as well as clear career paths will help to avoid the loss of trained employees. Clear expectations need to be set with prospective employers who participate that the goal is to create a strong resilient stream of workers and that some employees may have desires for growth and it is healthy for them to attain certification and move up in the workforce as far as their ambition allows for. Fear will restrict the employer to a smaller pool of workers. It would be a good thing to employ an eager candidate and help them grow in the trade as well as foster mentor relationships. This individual may leave the company for a more favorable position, or they may inspire growth to a point where they can run a newly opened expansion or branch of their employer. Having a plan for future growth may allow ambitious employees to commit to staying with a company. At the end of the day there is more work than any one company can do, training the next generation of workers is far too important to allow it to stop due to fear of competition.

Incentive alignment

Table 1

- There is a need for a more streamlined approach to incentive alignment to allow for easier stacking across programs and less time spent by contractors, building owners, and incentive program implementers. The group identified several areas and mechanisms that would support better incentive alignment across programs:
    - Include Quality Assurance & Quality Control requirements in the Technical Resource Manual. This approach formalizes the ability to ensure quality installation while moving the market towards commissioning at installation as business as usual.
    - Establish and use common vocabulary/language across programs when describing technology and requirements to provide greater clarity to market actors. Consider alignment on baseline performance standards to reduce confusion about qualifying products across programs.
    - Identify and implement a common approach for savings allocation. This should include upstream (e.g. market transformation efforts) as well as midstream and other utility incentive programs. Programs must be able to claim savings without double dipping or triggering evaluation concerns in a stacked incentive landscape.

Table 2

- Incentive info is **inconsistently communicated. The industry is heavily dependent on contractors** to both know and properly communicate and promote incentives. More could be done to share incentive summaries with manufacturers and distributors and have them push consistently across all their contractors. Via training, other communications, etc.
- **Homeowners need to truly believe in the economics** of the system, including the incentives but also the savings. A trusted 3rd party like the Collaborative with clear, trusted information on those economics could help. Something for contractors to point to. Homeowners don't have to only trust them. The more specific the economic info to a given homeowner's scenario the better.
- **Midstream vs Downstream** was a big topic, but the table was split in which is better. Perhaps the key takeaway is that if a program is going to go midstream, they need to make sure distributors are on board with the approach and will be good participants. Not all are.

Program design metrics

Table 1

- There is a need for evaluator education since programs are designed around an evaluation framework.
- There is a need to go top-down from the federal government to change metrics OR happen at the same time as other entities so there is not different an overabundance of different metrics for different programs. Overall, the table agreed there needs to be a multi-prong approach, not just 'this' or 'that. The approach needs to include the federal government, the states, the utilities, and the broader community.
- There needs to be a regional approach as well.

Table 2

- Removal of EER metric from package heat pump units led to increased participation in small business programs. This highlights the importance of re-examining efficiency metrics to better reflect real-world performance, incentivize participation, and if necessary modify, simplifying, and streamline program requirements.
- Challenges faced by energy efficiency organizations and utilities include the difficulty of addressing the limitations of traditional metrics like EER and promoting the benefits of advanced technologies such as variable-speed heat pumps. This requires a shift in education towards contractors and the desire to use the same (or very similar) comparison metrics across programs and the industry.
- Manufacturers can assist utilities by providing clear goals, tracking data, and sharing insights on emerging technologies. Collaboration between stakeholders, including manufacturers, utilities, and regulatory bodies, is crucial for overcoming barriers and implementing effective energy efficiency programs.

Table 3

- The viewpoint of the group is that removing the EER metric from heat pump product qualifying criteria would likely lead to increased utility program participation. However, with increased participation come fresh concerns. These concerns ranged from

continued difficulty in meeting goals for a smaller utility in an "activate" state to the likelihood of running out of budget early in the program year at a larger utility in an "align" state.

- Changing or even talking about changing an incentive requirement can lead to uncertainty across program years. Beyond the initial confusion, there's typically a long process followed by a steep learning curve. And, with long lead times on both equipment and projects, there's potential for equipment to no longer qualify by the time projects are installed or projects taking a "wait and see" approach to avoid that very outcome. One solution is to provide sufficient runway before any change such that manufacturers and distributors can work through their existing inventory, manufacturers can make adjustments to existing product lines or launch new ones, and projects can be specified and scheduled with confidence.
- It all goes back to the TRM. If claimed savings can be adjusted to more accurately reflect the improved real-world performance of a technology like variable-capacity heat pumps, then the case can be made for higher incentives. Higher incentives mean lower first costs, more installed projects, and more energy savings.

Customer awareness and engagement

- A variety of challenges exist in the adoption of ASHP technology, including misinformation and a lack of confidence among contractors, the need for trusted sources, and economic considerations. The awareness and knowledge of ASHPs vary across regions, influencing the overall adoption rate. Additionally, the immediate availability of heat pumps is limited, creating challenges in meeting demand promptly.
- To address challenges, several solutions were proposed in the group’s discussion. These include tailoring outreach efforts, exploring diverse financing options, leveraging new climate banks, introducing the concept of heat pump concierges, implementing contractor training programs, and organizing initiatives like raffling free heat pumps for a specific period. Encouraging utilities to actively promote ASHP adoption was also highlighted as a potential solution.

Innovative rate options

- The economics of buying a heat pump may not work out for natural gas customers given the high upfront cost of the equipment. Favorable heat pump-specific rates would likely promote heat pump adoption. There also needs to be protection for disadvantaged communities in the transition to heat pumps, and rates can be an important tool.
- There are grid and utility benefits from dual fuel heat pumps (increased load factor in shoulder seasons). Utilities can justify offering these customers lower rates without increasing costs for other customers. For all electric systems, reducing supplemental heat through weatherization and equipment selection is critical.
- For some utilities, a winter peak is not a near-term issue- and they have some time to plan. Utilities need to make sure regulatory staff and DSM/efficiency teams are talking to each other about heat pumps.
- Utilities may need to ask regulators to look at non-economic benefits to heat pumps to support these rate options.
- Fixed costs for natural gas are also important to consider.

Success in other regions

- Highlight the similarities between the Midwest and regions that have high penetration of heat pumps, e.g., weather patterns with the northeast US.
- Collaboration is key; find opportunities to engage with others who have implemented successful initiatives and learn from them while also looking for local partners to support your efforts.
- There may be something like a tipping point, after which consumers and contractors will have familiarity with the technology and be more likely to adopt it themselves. Given this is important to ensure consumers and contractors have a good initial experience to help minimize to ensure positive word of mouth.

Path to 2050 decarbonization and the role of dual fuel

Table 1

- There is a need for numbers grounded in science and facts regarding costs, emissions, and electrification grid impacts when thinking about the role of dual-fuel heat pumps in decarbonized space heating by 2050.
- Affordability is holding decarbonization back and there needs to be a strong focus on improving affordability.
- Equipment installed today with its effective useful life (EUL) will be out of the house before 2050. Emphasis on uncertainty when forecasting the future and the option value of dual fuel heat pumps and their resiliency benefits are significant.
- Dual fuel heat pumps give utilities and regulators more time over coming years to figure out what decarbonized space heating looks like as the industry gains a clearer picture of various uncertainties and advancements that occur in space heating technology and products powered by clean electricity or other clean fuels.

Table 2

- There needs to be a wide range of solutions, dual fuel is likely a part of that mix.
- Natural gas fuel mix can be partially decarbonized with hydrogen and biofuels.
- Education and carbon-linked pricing are effective tools for guiding customers towards decarbonization.