Advanced Heat Pump Coalition

All Members Webinar, July 8th, 2025

TOPIC: AHPC Workgroup Updates

Agenda

General Information **10 minutes**

- Advanced HP Coalition Intro
- Highlights

Workgroup Updates **60 Minutes**

- WG#10 Program Delivery
- WG#1 Test Procedure and Ratings
- WG#2 Roadmap and OEM Engagement
- WG#4 Heat Pump Only Homes
- WG#5 Connected Commissioning
- WG#8 Dual Fuel
- CalMTA Room Heat Pump Collaborative

Discussion – Can we improve AHPC w/o added burden or budget? How? **Time permitting**

Webinar Objective: Increase collaboration and awareness of energy efficient heat pump market development, technologies, industry, and standards

A “Coalition of the Willing”

Goal

To increase research collaboration among energy efficiency organizations that are working to accelerate market adoption of advanced heat pumps

Membership

- ACTIVE = Participate in workgroups, guide and fund collaborative activities
- PASSIVE = attend webinars, help socialize what we learn

General Info

- Steering committee guides collaboration
  (NEEA, NEEP, MEEA, CEC, NRCan, EPA, NYSERDA)
- NEEA provides admin support
- NEEP provides cold climate heat pump performance database
- MEEA maintains website with past docs and PPTs
  The Advanced Heat Pump Coalition

Brightest heat pump minds
from organizations such as these:

Workgroups

#	Title	Status	Co-Leads	Meeting Frequency	Goal or Topics
SC	**Steering Committee**	Active	Christopher Dymond David Lis	Quarterly	Provides guidance on workgroups and collaboration and set topics for semi-annual webinars
1	**Test Procedure and Ratings**	Active	Muvala Suami David Lis	Bi-monthly	Improve heat pump performance ratings
2	**Roadmap and OEM Engagement**	Active	Christopher Dymond Lauren Eagan	Bi-monthly	Identify and communicating shared utility priorities/needs to OEM community
3	**Contractor Best Practices**	Complete	Matt Christie Ben Schoenbauer	N/A	Identifying best practices to help program managers improve savings and satisfaction of heat pumps
4	**Heat Pump Only Homes**	Active	Matt Christie Mike Helund	To be determined.	Design criteria, HP spec, information campaign, polar vortex, quantifying peak demand
5	**Connected Commissioning**	Active	Christopher Dymond Justin Margolies	Monthly	CCX report definition, certification criteria, energy savings, value prop, who maintains the QPL
6	**Load Flexibility**	Pending		To be determined.	Load shifting, HVAC command stack, (OpenADR, EcoPort), limit to 100A load
7	**Refrigerants**	DOE already has working groups to address this		To be determined.	Next transition to ultra-low GWP, limiting leakage, policy and code impacts
8	**Dual Fuel HP**	Active	Abi Daken Ben Schoenbauer		Existing furnaces with HP coil? What is the best HP for dual fuel? What are the controls and design recommendations?
9	**Multi-Head Systems**	Pending			What is the true performance of multi-head systems, how best to optimize, when to go ductless,
10	**Program Managers**	Active	Suzi Asmus Jackie Albanese	To be determined.	Share information about program approaches and best practices, find areas of collaboration

For More Information

Membership Information

- Stephen O'Guin, SOguin@neea.org

Website

- https://www.mwalliance.org/advanced-heat-pump-coalition

Primary Conferences & Events

- 2026 ACEEE Hot Air Forum March 24-26 Phoenix, AZ
- 2026 AHRExpo February 2-4 Las Vegas, NV
- Regional Symposiums & Forums
  - NEEP
  - MEEA
  - NEEA - 2026 Efficiency Exchange - TBD

Advanced Heat Pump Coalition
Workgroup #10
Program Delivery

Co-Leads of Workgroup

Jackie Albanese, TRC Companies, Inc.
Suzi Asmus, NEEA

WG#10 – Description

Objective and Purpose:

- **Goal/Purpose:** Share information about residential heat pump program approaches, best practices, pilots, and study results, communicate technical topics from other AHPC workgroups, and find areas of collaboration.
- **Objective:** Identify topics of interest for the group and convene several times a year to address identified topics in the form of discussions, presentations, round-tables or other approach.

Timeline & Schedule:

- Meet 3-4 times per year (Starting Q4, 2024)

Actions and Deliverables:

- TBD

WG#10 – Update

Membership (Target Audience):

- Utility Energy Efficiency Program Managers
- Program Implementers
- Community or Government Agencies
- Special Guests

Meetings To-Date

- Sept 11, 2024 – Kickoff Meeting (27 attendees, 18 orgs)
- Nov 20, 2024 - Installer training
- June 4, 2025 - Program Pilots
- NEXT - Sept 17, 2025 - Pricing/Affordability

Activities:

- Conducted surveys to solicit topics to cover

WG#10 – Future Topics

Topics of interest include:

- Tough Market Barriers
- Building More Equity into Program Delivery
- General peer sharing
- Cold climate HPs
- How do we make sense of all the technical innovation in heat pumps and how to integrate innovation into programs
- Incentives and Rebate Structuring
- Data-Driven Program Design
- Demand Response Integration
- Customer education strategies
- What are vendors/contractors doing in each area
- How to avoid emergency replacements of like-for-like?

WG#10 – Implementation Invitation

Workgroup #1
Test Procedure and Ratings

Co-Leads of Workgroup

David Lis, NEEP
Mvuala Suami, NRCan

WG#1 – Description

Vision

- The marketplace (Efficiency Programs/manufacturers/contractors/consumers) can identify ASHP products that will deliver actual performance

Desired Outcomes

- An improved test procedure is developed and validated to show enhanced representativeness of ASHPs
- An Advanced ASHP Qualified Product List (QPL), based on the results of an improved test procedure, is built
- Efficiency Programs use QPL to incentivize adoption of advanced ASHPs that deliver real world performance, increasing savings
- Long term- Federal Standards program ultimately more representative test procedure and rating

WG#1 – Update

Continued examination of repeatability, reproducibility and representativeness of load-based testing

February meeting- Representativeness Project Report

- SPE07 ratings closer to field data than M1 rating
- Provided opportunity for lab repeatability testing
  - 2 units tested for repeatability: <5% deviation heating, <3% cooling

May meeting- CSA SPE-07:23 Reproducibility Project

- 2 centrally ducted heat pumps, previously field monitored, were evaluated at two independent testing facilities.
- Unit A: 8.6% mean difference in SCOPC, and 8.8% mean difference in SCOPH between facilities
- Unit C: testing experienced issues with thermostat temperature sensor drift -> it was difficult to draw conclusions

WG#1 – Update

Next Steps

- CSA C700
  - CSA EXP07 was finalized, renamed SP07 and published in 2023
  - CSA is developing C700, the ANSI Accredited version of SP07
    - Corrects errors/clarifies language to ensure reproducibility
    - Lessons learned from Representativeness and Reproducibility projects will be incorporated in C700
    - Considering applying feed-forward algorithms in dynamic testing scenarios developed by Waseda University to improve the predictability of system responses.
- AHRI 210/240 and AHRI 1600
  - Incorporates load-based testing regime at key conditions
    - Uses virtual load method from SPE07 (with some modifications)
    - Validates variable-speed operation, and
    - Validates key fixed-speed test results, using native controls
- WG#1 to reconvene in September

Workgroup #2
Roadmap and Manufacturer Engagement

Co-Leads of Workgroup

Christopher Dymond, NEEA
Lauren (Morlino) Eagan, Evergreen

WG#2 – Description

Objective and Purpose

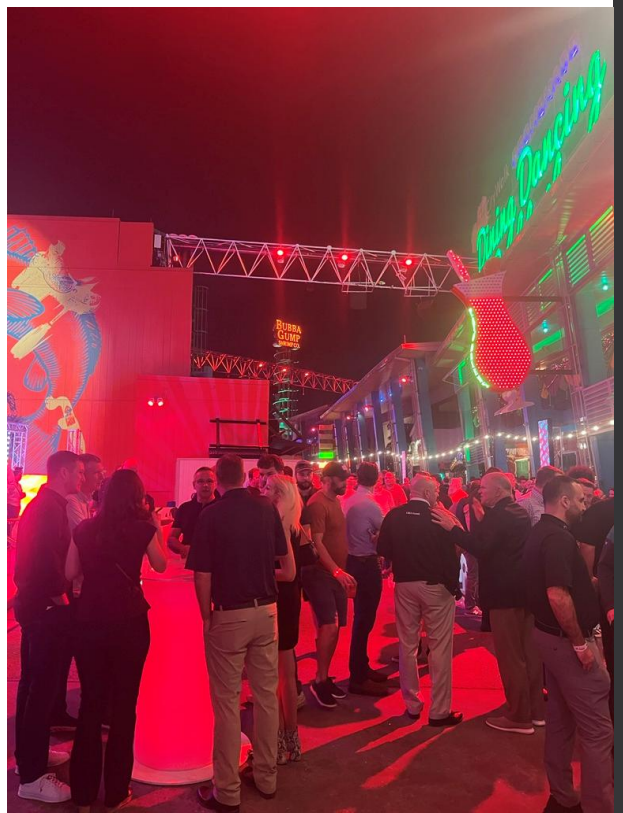
- Innovative heat pump capabilities that enhance in-field performance are well supported by utility programs and provide additional value to the HVAC industry

Timeline & Schedule

- Continuous refinement of EE needs
- Annual engagement with manufacturers during AHRExpo
- Bi-Monthly Meetings – 2nd Tuesday

Actions and Deliverables

- Share technology research
- Widespread utility program support exists for the features specified



WG#2 – Update

Over the last year, the group has...

Gathered bi-monthly

Engaged heat pump manufacturers on the following topics:

- Demand response standards
- Load efficiency and flexibility
- Contractor training
- Supply chain challenges
- Innovative and emerging products
- Refrigerants

Shared knowledge, resources, and lessons learned amongst each other

WG#2 – Update

Over the next year, the group plans to...

Continue gathering bi-monthly

Engage heat pump manufacturers on the following topics:

- Demand response standards
- Load efficiency and flexibility
- Contractor training – specifically sizing
- Supply chain challenges – specifically refrigerants and international trade
- Innovative and emerging products – specifically air-to-water and tri-mode heat pumps
- Refrigerants

Share knowledge, resources, and lessons learned amongst each other

Coordinate conference attendance, meet ups, and takeaways

Workgroup #4
Whole Home Heat Pump

Co-Leads of Workgroup

Matt Christie, TRC
Mike Hedlund, E Source

WG#4 – Description

Objective and Purpose

- Goal: Broaden acceptance of, and prevalence of, homes where the only heating source is a heat pump

Timeline & Schedule

- Meeting 3rd Monday, every other month at 11:00 eastern

Actions and Deliverables

- Compile Resources/information/studies that support this concept. Get those to the market. Fill gaps. Press for edits to existing resources that push-against or neglect.
  - To do: develop a resource tracking system, determine/implement valid "get to the market" mechanisms
- Track trends and data
- Track successes/issues/barriers

WG#4 – Update

Refining the mission:

- There is both a technical (products exist that work) and emotional (you can trust them) element
- There is good reason for market skepticism. There will be some conditionality (climactic, envelope, cost, electric service). Our work is to expand the zone of validity.

Who to influence?:

- Contractors first overall. Then also distributors who inform contractors.
- Customers next, particularly on confidence/normalcy
- Utilities/efficiency organizations next

Initial Resources:

- BPA – High Performance, High Capacity Heat Pump research pilot
- NSYERDA – Who's Afraid of a Polar Vortex case study
- E Source – Residential Electrification Survey results
- NEEP – Guide to Sizing & Selecting Air-Source Heat Pumps in Cold Climates

Workgroup #5
Connected Commissioning

Co-Leads of Workgroup

Christopher Dymond, NEEA
Justin Margolies, Slipstream Group

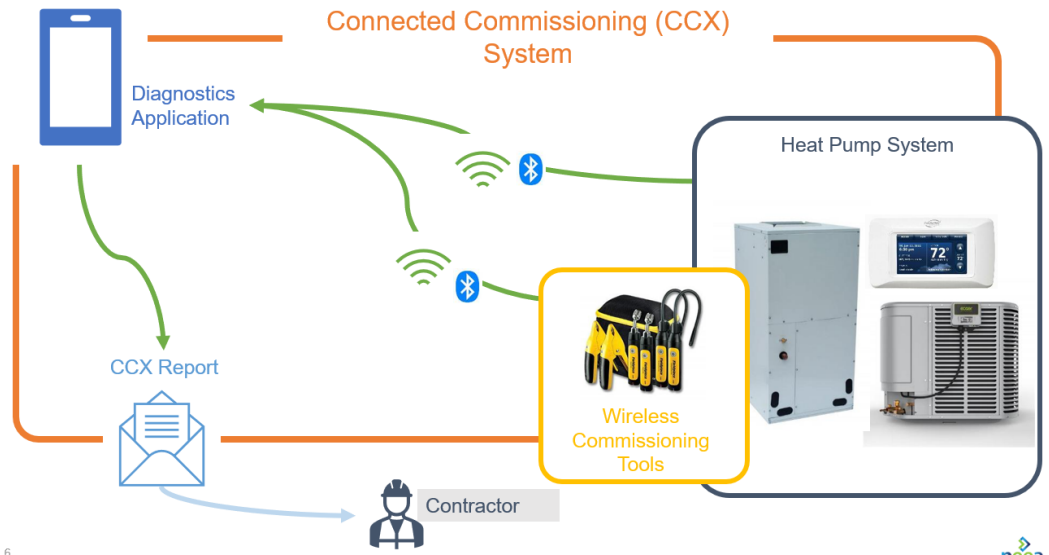
WG#5 – What is CCX

Guidance of Installers during CX process

Confirms key criteria meet OEM tolerances

Generates a report

- Geolocation, make and model, date of commissioning
- Refrigerant charge adequacy
- Airflow adequacy
- Verify settings impacting supplemental heat usage
- Verify the operating mode
- Verify capacity and power draw in test mode



WG#5 – Description

Objective and Purpose

- Define a specification for heat pumps with on-board commissioning capabilities
- Collaborate with utilities, national laboratories and manufactures on certification process
- Coordinate verification and case study work so that CCX

Timeline & Schedule

- Q1-2 2025 Draft spec in collaboration with manufacturers
- Q3 2025 Get feedback from utility partners and other stakeholders
- Q3-4 2025 Develop certification process

Actions and Deliverables

- Specification
- Certification Process

WG#5 – Update

Technical Working Group (Manufacturers)

- 10 meetings to date. Draft Spec done
- Gathering utility feedback before going back to manufactures

NREL and PNNL Collaboration on Certification Method

- Charge adequacy process defined
- Controls and Airflow method pending

Utility Feedback, Demos and Case Studies

- Core question – what is really needed vs. wanted
- 2026 seeking case studies and pilot collaboratives with 5-6 utilities and 2-3 OEMs

Workgroup #8
Dual Fuel

Co-Leads of Workgroup

Abigail Daken, EPA
Ben Schoenbauer, Center for Energy and Environment

WG#8 – Description

Objective and Purpose

- The working group includes heat pump systems with any backup fuel except solely electric. We will initially work on knowledge sharing about residential centrally ducted systems, focusing on currently available equipment and actionable topics. Future work may include best practices, guidelines, and/or recommendations around the first phase topic areas, such as ratings and metric, optimization of systems, controls, and field evaluations. We are open to considering beyond residential and beyond forced air in the future.

Timeline & Schedule

- Oct 2024 to June 2025 – Expert lead discussion on actionable dual fuel topics
- Fall 2025 and beyond - best practices, guidelines, and/or recommendation development
- Monthly meetings on the 2nd Wednesday at 2:00 PM ET
  - Will start up again in August

Actions and Deliverables

- Summer 2025 – Summary of discussions at AHPC all hands meeting
- Spring 2026 – Workplan TDB in August

WG#8 – Update

Focused Presenter Lead Topics

- DFUE
- Dual Fuel Specifications
- Field data and performance
- Quality installations and field observations

Frequent Conversation Topics

- Controls and operational settings (switchover/droop)
- Design and sizing

WG#8 – Takeaways and Next Steps

Key takeaways

- Dual fuel programs and installations need more guidance to ensure installed systems met the goals of the program, and customer.
  - Installed system performance has high variance
- DFUE is a useful rating metric that combines efficiency and capacity and can be used to compare dual fuel systems to one another
  - Technical committee currently working on needed adjustments
- Thermostats and operational settings have a large impact on performance and the variety of options present a barrier for consistent implementation

Possible next steps

Thermostat guidelines or specifications

Review of controls best practices

CalMTA
Room Heat Pump Collaborative

Co-Leads of Workgroup

Erik March, CEE
Christopher Dymond, NEEA
James Mannarino, NYSERDA
Elaine Miller and Alex Wurzel, Resource Innovations
Tom Bougher, 2050 Partners

Room Heat Pump Technology?

- Includes window, portable (dual hose), and through-the-wall form factors
- Variable speed
- Output at 8k -14k BtU/h for 400-1,000 ft^2
- 120V plug-in
- Installed without certified HVAC technician or electrician, thus cheaper than alternative HP solutions

Why a Collaborative?

Newish Technology that can fill a critical market gap

Objective and Purpose: Overall, accelerate adoption of RHPs

- Share and increase research collaboration
- Build and share tools and resources to accelerate inclusion in utility programs
- United voice to O&M manufacturers on EE community product needs

Timeline & Schedule

- Launched in January 2025
- Quarterly calls, 2 per year includes manufacturers

Update

Actions and Deliverables

- Share-outs on pilot RHP experiences
- Maintain central list of ongoing research from all parties
- Developed and maintain a list of products
  - New product with innovations happening for different applications
  - Collaboraitve to keep it up to date as we talk with manufacturers
- Aggregate (as best we can) data needed for measure development
- Next step will be to identify research gaps
- Future topics:
  - PTHPs
  - Research into mitigating consumer energy transition costs

PLEASE JOIN US: Contact Elaine Miller ecmiller@calMTA.org

Want to join a WG?
Send an email one of the co-leads

1	Test Procedure & Ratings	David Lis Mvuala Suami	djlis@NEEP.org mvuala.suami@nrcan-rncan.gc.ca
2	OEM Engagement	Christopher Dymond Lauren Eagan (Morlino)	cdymond@neea.org lauren.eagan@evergreen.energy
4	Heat Pump Only Homes	Matt Christie Mike Hedlund	mchristie@trccompanies.com mike_hedlund@esource.com
5	Connected Commissioning	Christopher Dymond Justin Margolies	cdymond@neea.org jmargolies@slipstreaminc.org
8	Dual Fuel	Ben Schoenbauer Abi Daken	bschoenbauer@mncee.org Daken.Abigail@epa.gov
10	HP Program Managers	Suzi Asmus Jackie Albansese	sasmus@neea.org jalbanese@trccompanies.com

General Discussion

What could we do to improve w/o additional burden or budget?

Are there working groups that should setup, revived or shut down?

- WG#3 – Contractor Best Practices
- WG#6 – Load Flex
- WG#7 – Refrigerants
- WG#9 – Multihead Systems

Feel free to add comments in chat or email Stephen - SOguin@neea.org

Closing Details

For More Information

Membership Information

- Stephen O'Guin, SOguin@neea.org

Website

- https://www.mwalliance.org/advanced-heat-pump-coalition

Primary Conferences & Events

2026 AHRExpo	February 2-4	Las Vegas, NV
2026 ACEEE Hot Air Forum	March 24-26	Phoenix, AZ

- Regional Symposiums & Forums
  - NEEP
  - MEEA
  - NEEA - 2026 Efficiency Exchange – May 4-5 – Boise, ID

Workgroups

#	Title	Status	Co-Leads	Meeting Frequency	Goal or Topics
SC	**Steering Committee**	Active	Christopher Dymond David Lis	Quarterly	Provides guidance on workgroups and collaboration and set topics for semi-annual webinars
1	**Test Procedure and Ratings**	Active	Muvala Suami David Lis	Bi-monthly	Improve heat pump performance ratings
2	**Roadmap and OEM Engagement**	Active	Christopher Dymond Lauren Eagan	Bi-monthly	Identify and communicating shared utility priorities/needs to OEM community
3	**Contractor Best Practices**	Complete	Matt Christie Ben Schoenbauer	N/A	Identifying best practices to help program managers improve savings and satisfaction of heat pumps
4	**Heat Pump Only Homes**	Active	Matt Christie Mike Helund	To be determined.	Design criteria, HP spec, information campaign, polar vortex, quantifying peak demand
5	**Connected Commissioning**	Active	Christopher Dymond Justin Margolies	Monthly	CCX report definition, certification criteria, energy savings, value prop, who maintains the QPL
6	**Load Flexibility**	Pending		To be determined.	Load shifting, HVAC command stack, (OpenADR, EcoPort), limit to 100A load
7	**Refrigerants**	DOE already has working groups to address this		To be determined.	Next transition to ultra-low GWP, limiting leakage, policy and code impacts
8	**Dual Fuel HP**	Active	Abi Daken Ben Schoenbauer		Existing furnaces with HP coil? What is the best HP for dual fuel? What are the controls and design recommendations?
9	**Multi-Head Systems**	Pending			What is the true performance of multi-head systems, how best to optimize, when to go ductless,
10	**Program Managers**	Active	Suzi Asmus Jackie Albanese	To be determined.	Share information about program approaches and best practices, find areas of collaboration

Thank You

Special thanks Midwest Energy Efficiency Alliance for hosting the AHPC website