

Advanced Heat Pump Coalition

Member Webinar, March 8th, 2022

TOPIC: Capacity Building and Developing New Talent

how-to

ASK A QUESTION

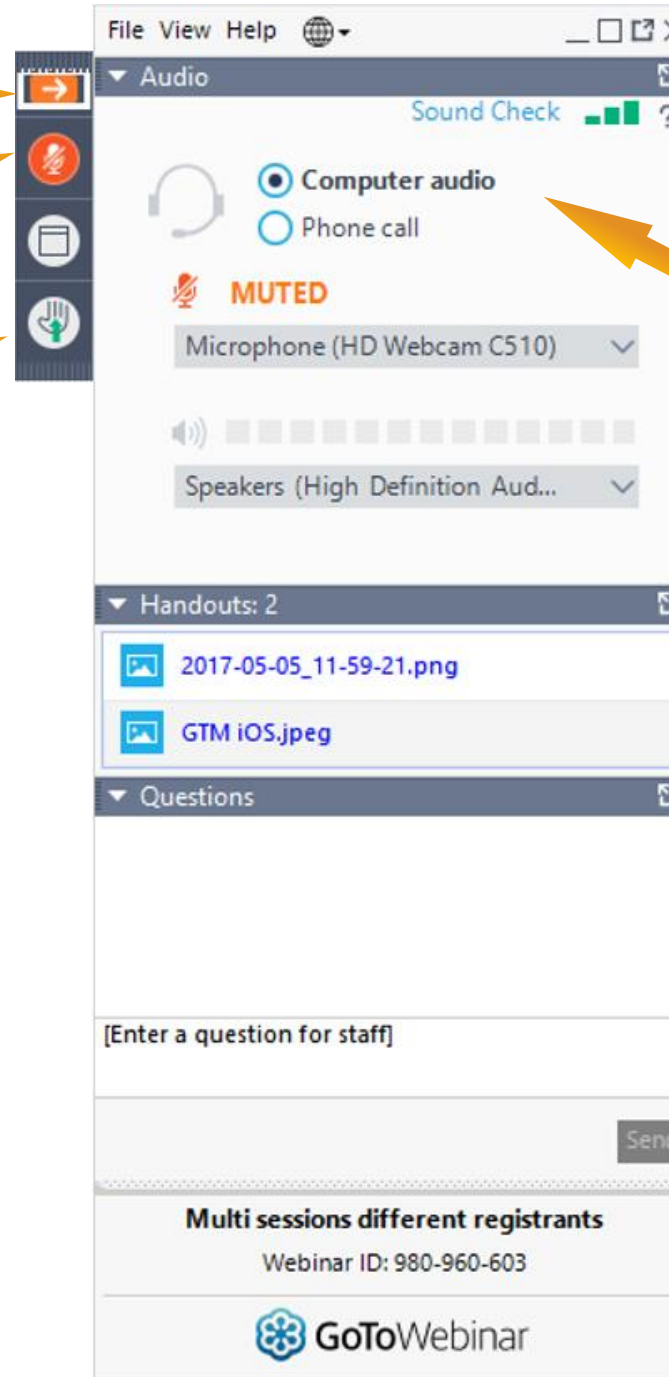
during this webinar:

- All phones will be muted.
- We encourage use of the **QUESTIONS** feature.

Open & close your
control panel

Mute & **un-mute**
yourself

Raise your hand
to ask a question
verbally



Choose your
computer audio
or **phone call**
settings

Type
questions
in this box

Agenda

General Information

10 minutes

- Advanced HP Coalition Intro
- Workgroup Updates

Capacity Building and Developing New Talent

60 Minutes

- 11 presenters

Questions and Discussion

15 minutes

Intention: Become aware of what work is currently being done

Objective: Increase collaboration regarding work

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 = Fund and Guide collaborative activities
- PASSIVE = attend webinars, provide feedback

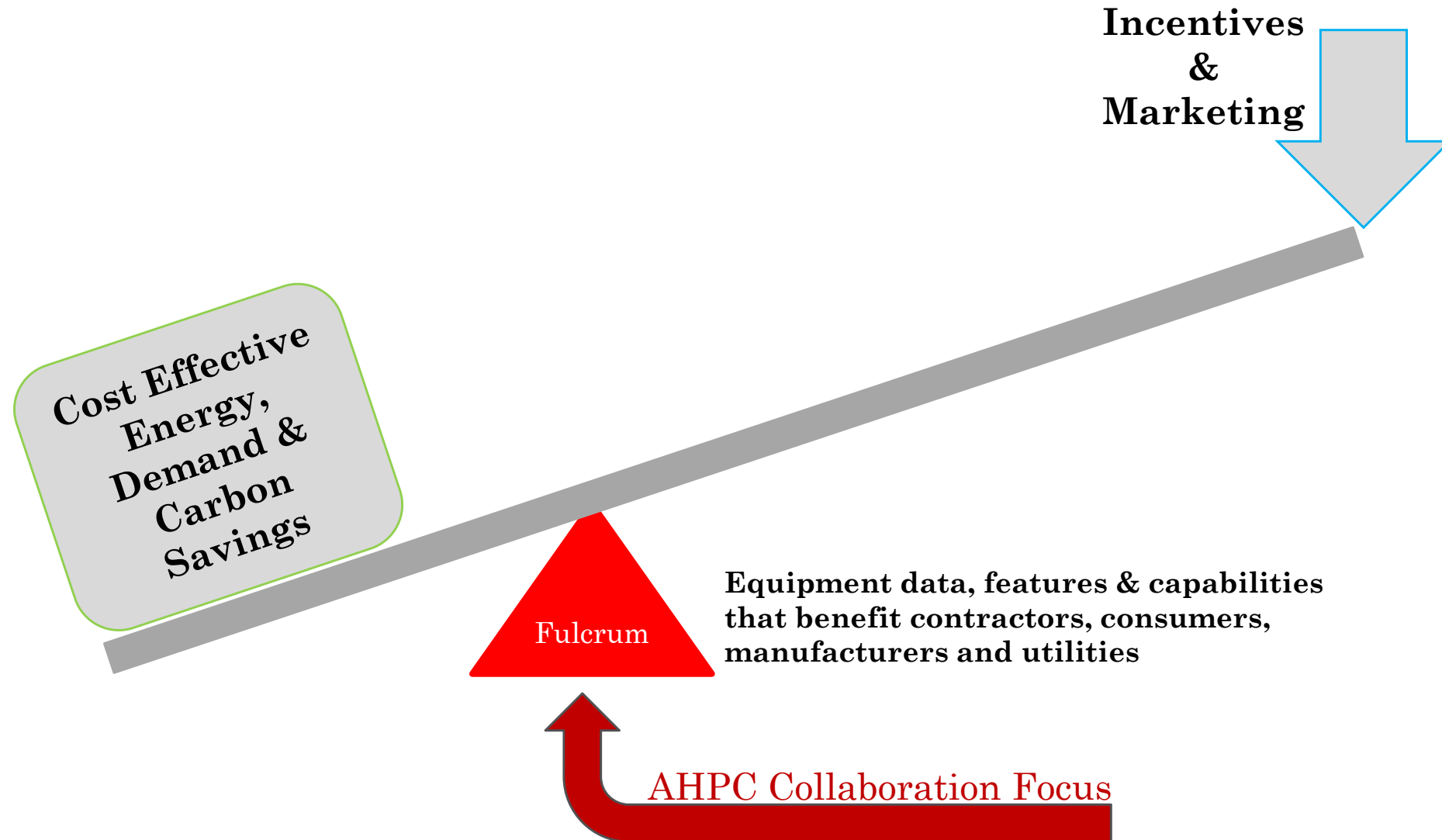
Committees

- Steering Committee
(NEEA, NEEP, MEEA, CEC, NRCan, EPA, NYSERDA)
- WG #1 – Improved Test Procedure and QPL
- WG #2 – Roadmap Specification and Mfr Engagement
- WG #3 – Best Practices
(Design, Adaptation, Installation and Operation)

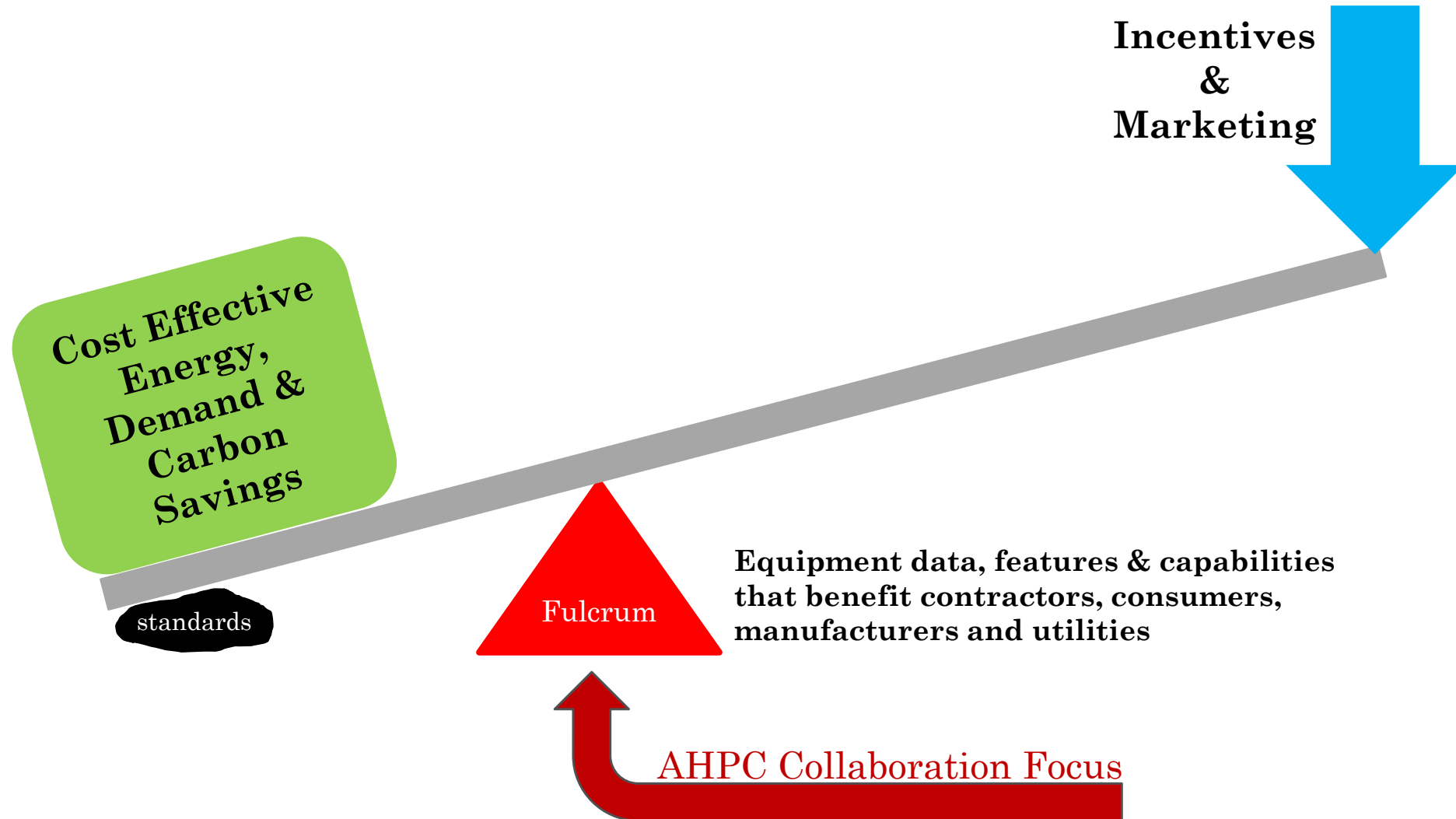
Brightest heat pump minds
from organizations such as these:



Market Transformation Focus of AHPC



Market Transformation Focus of AHPC



Workgroup 1 – Improved Test Procedure & QPL

Vision

- The marketplace (Efficiency Programs/manufacturers/contractors) 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

Mechanism employed

- Improved Test Procedure
- Qualified Products List

Workgroup 1 – Update

CSA EXP07

- 2022 version is being prepared for publication
- ANSI Accreditation work has begun

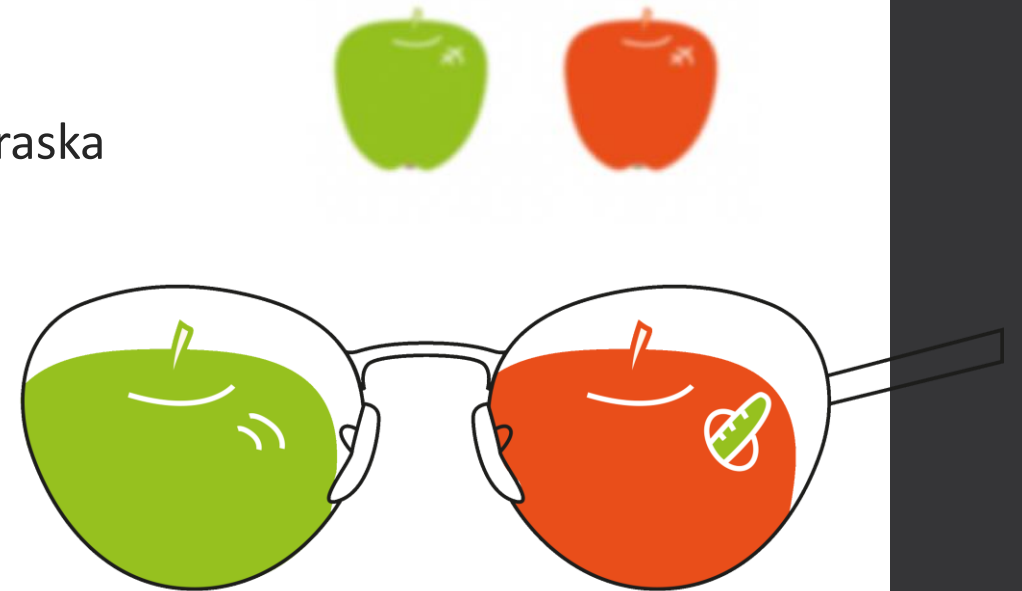
Representativeness Project

- Phase 1 – Field testing in Lincoln Nebraska
- Phase 2 – Lab testing at UL in Plano TX, Q2 2023
- NEEP is project manager
- DNV is prime contractor, support from University of Nebraska

Why Metrics Matter Report Completed

Product Databases

- NEEP QPL
- ENERGYSTAR / AHRI listing



Workgroup 2 – Roadmap & Engagement

Vision

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

What is a “Roadmap”

- It is **not** program specification
- It describes items EE organizations are hope to see emerge in products over the decade
- It is informed by industry direction

Desired Outcomes

- Manufacturers have clear understanding of what Utilities need
- Widespread utility program support exists for the features specified



Workgroup 2 – Update

Manufacturer Engagement

- October-November meetings: 8 companies, 50 staff
 1. Some features and capabilities are not supported by utilities until they are available, but manufactures may not add them until utilities provide incentives
 2. AHPC needs to start with trust building – if we ask for something we need to make sure EE orgs will support it when manufacturers add changes to their products
 3. Change the name – “Roadmap” not “Roadmap Specification”
 4. We need a better way to inform EE technical folks about new features and capabilities
 5. Utility and EE org market research about contractors and customers should be shared
 6. Need to aggregate regional sales goals to have meaningful impact

Next Steps

- Roadmap Document Update
- Publish areas of Interest

Workgroup 3 – Best Practices

Vision

- HVAC designers/installers have the knowledge and tools that improve the business case for recommending advanced heat pumps to their customers.

Desired Outcomes

- We understand how to optimize performance
- It is easy and profitable for contractor

Mechanisms Employed

- Field research
- Manufacturer training for contractors
- Online tools and connected system data

Workgroup 3 – Best Practices

Heat Pump Best Practices Technical Gap Analysis

- Report completed – Clearesult

March 2022 Webinar on Workforce Development

- This presentation

CEE Project

- Kickoff in February 2022
- More details shared in this presentation

Capacity Building and Developing New Talent

Technical Requirements – how to do it, workforce resources

- | | |
|--|------------------------------------|
| • Consortium for Energy Efficiency (CEE) | Alice Rosenberg |
| • NYSERDA | Adele Ferranti & Courtney Moriarta |
| • Natural Resources Canada (NRCan) | Sneha Bernard |
| • Air Conditioning Contractors of America (ACCA) | Wes Davis & Matt Akins |

Workforce Recruitment, Certification, Credentialing, Qualification

- | | |
|--|-----------------------|
| • Building Performance Association (BPA) | Caroline Hazard |
| • US EPA ENERGY STAR | Dan Lawlor |
| • US DOE Building Technology Office | Maddy Salzman |
| • Interstate Renewable Energy Council (IREC) | Laura Jeanne Davignon |
| • Carrier Inc. | Jason Thomas |
| • Heating, Refrigeration and Air Conditioning Institute (HRAI) | Martin Luymes |

Questions will be
answered
after
all presentations
have been given

Type questions
into comments or
hold them for the
end

Alice Rosenberg
Consortium for Energy Efficiency

CEE MISSION

As the Consortium for Energy Efficiency,
United States and Canadian efficiency program
administrators develop cutting-edge strategies to
accelerate commercialization of energy
efficient solutions to benefit gas and
electric customers, utility systems,
and the environment.

AWARENESS STRATEGIES

Alice Rosenberg
Principal Program Manager

617-337-9287
arosenberg@cee1.org

March 8, 2022
Advanced Heat Pump Coalition

What are we doing?!?

Consortium for Energy Efficiency
**Air Source Heat Pump Education
and Awareness Building Strategies**
Guidance on Selection, Design, Sizing, Installation,
Commissioning, Operations, and Maintenance
2022-2023 Business Plan and
Funding Agreement



For information, contact:
Alice Rosenberg
Principal Program Manager
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617-337-9287
Consortium for Energy Efficiency
Fenncroft Corporate Center, 35 Village Road
Middletown, Massachusetts 01949
December 2021

- Delivering impact at scale **through industry coordination** across a multitude of players with **market influence**
- **Solidify consensus positions** into centralized playbook and repository for **local dissemination**



- **SCOPE:**

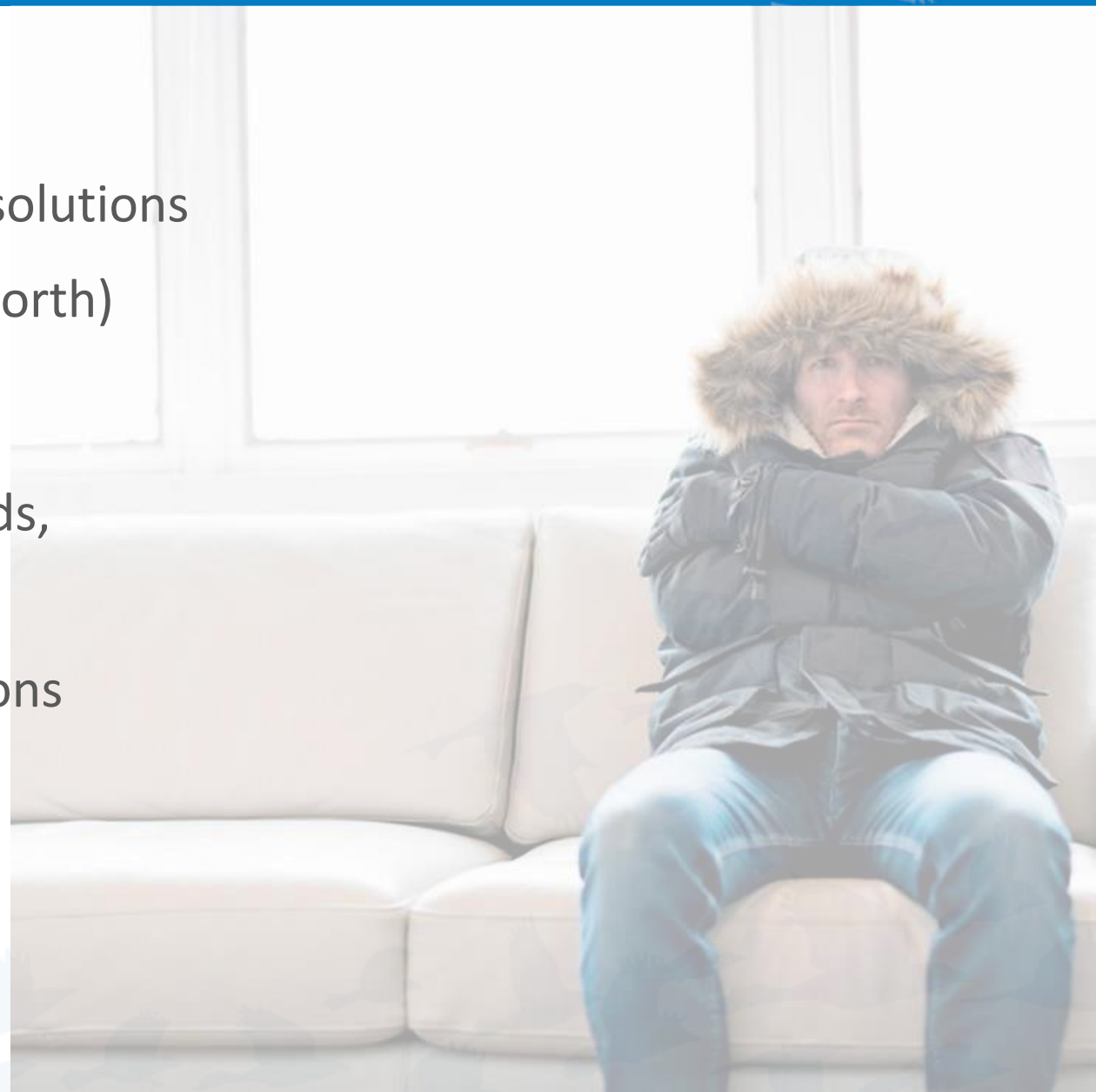
- Residential, single family, whole house solutions
- CEE Specifications for ASHP (including North)

- **PHASE I DELIVERABLES:**

- Identification of applications, gaps, needs, and existing tools and standards
- Clearinghouse of resources and definitions

- **PHASE II DELIVERABLES:**

- Common use case scenarios
- Contractor and consumer materials



Advisory Committee

- ACCA
- AHRI
- BC Hydro
- BPI
- Cape Light Compact
- Daikin
- DTE Energy
- Efficiency Maine
- Efficiency Vermont
- Emerson
- Fujitsu
- Goodman Manufacturing
- Lennox Industries
- Mitsubishi
- NEEA
- NEEP
- NRCan
- NYSERDA
- PNNL
- Rheem Manufacturing
- Seattle City Light
- Snohomish County PUD
- Tacoma Power
- Trane Technologies
- US DOE
- US EPA
- Xcel Energy

Next Steps: Develop Working Groups to develop common scenarios

Timeline: Finalize deliverables by end of 2023; consider future phase(s)

Adele Ferranti and Courtney Moriarta

NYSERDA

New York State Energy Research & Development Authority



NYSERDA

Clean Energy Workforce Development and Market Capacity Building



Adele Ferranti, Adele.Ferranti@nyserda.ny.gov

Courtney Moriarta, Courtney.Moriarta@nyserda.ny.gov



NYSERDA

Workforce Development: Skills Training and Talent Pipeline

- Career pathways training partnerships for high efficiency HVAC and heat pumps
 - \$8.5 million to training providers supporting worker transition from education to job placement and occupations
- Energy efficiency and clean technology training
 - \$4 million (50% for building electrification), curriculum development, training, and job placement for new workers or skills building for existing workers
- Clean energy internships
 - 70-90% wage reimbursement up to \$17/hr, avg \$6,500 per intern, 8 weeks (80 hours) minimum up to 480 hours
- On-the-job training for energy efficiency and clean technology
 - 50-75% wage reimbursement for new workers up to \$24/hr, \$8000 per new hire, 4-6 month OJT period
- Climate justice fellowship
 - Full –time fellowships, \$37,000 min salary + \$3,000 training/prof dev, aimed at those living in disadvantaged communities or priority populations



NYSERDA

Heat Pumps – Critical Training Topics

- **Sizing and Design**

- Key characteristics of variable capacity, inverter driven cold-climate air source heat pumps
- Properly completing Load Calculations
- Sizing, design, and product selection

The Goldilocks Principle



Too Small

System will not keep the house warm on the coldest days

- Poor comfort, or need for backup heat
- Slow catch up if using thermostat setbacks



Just Right

- Comfort
- Efficiency
- Durability



Too Big

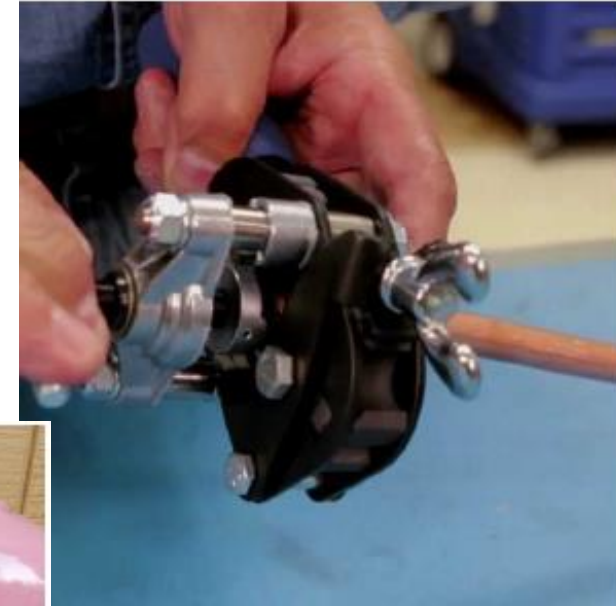
System will cycle on and off

- Poor comfort
- Poor energy efficiency
- Poor durability
- More expensive

Heat Pumps – Critical Training Topics

- **Installation Key Skills**

- Flare Fitting
- Electrical system, breakers, and wiring
- Pressure Testing
- Charging
- Managing controls
- System Start-up



Images courtesy of Steven Winter Associates

Market Capacity Building: Business and Supply Chain Development

- **Clean Heat Connect**
 - Upstream partners trade ally network designed to provide a channel for reaching contractors with technical and business support resources to promote accelerated adoption of cold climate air source heat pumps
- **Contractor Business Mentoring**
 - Small scale demo to provide customized support and business mentoring to willing contractors interested in growing their businesses to provide more clean energy services
- **Utility Partnerships**
 - Collaboration with NYSERDA and National Grid to overcome supply chain and labor market constraints to significantly grow the service provider network for weatherization, windows, and heat pump installations throughout National Grid's service territory
- **Market Mapping and Value Proposition Assessment**
 - On-going work to assess the state of the market across the supply chain, through roundtables, interviews, and other stakeholder interactions, gather intel to understand each market actors' business value proposition, and identify high impact intervention points

NYS HVAC Supply Chain Market Map

Core Market Actors



Manufacturers

Manufacturer Profile

Manufacturer Business Model

Manufacturer Challenges

Manufacturer Brand Information



Distributors

Distributor Profile

Distributor Business Model

Distributor Challenges

Distributor Key Differences

Whom Do Distributors Sell To?



Contractors

Contractor Profile

Contractor Business Model

Contractor Challenges

Contractor Influence

Contractor Key Differences Between Types of Contractors

Contractor Map of New York HVAC Contractors

Contractor Understanding HVAC Market: Public Sector Accounting Method



Customers

Customer Profile

Customer Business Model

Customer Challenges

Customer Influence

Customer Understanding HVAC Market: Public Sector Accounting Method



NYS HVAC Supply Chain Market Map

Contractors

Contractor: Profile

Characteristics

Though there are different kinds of HVAC Contractors depending on the company size and services offered - at their core - they are responsible for the installation, service and maintenance of heating and cooling systems in homes which include furnaces, boilers, air conditioners and heat pumps. Businesses are made up of sales and service teams who sell and install, maintain and repair those systems. In smaller companies, one person may manage many or all of these responsibilities.

Some HVAC contractors may choose to narrow their focus or specialize in a particular type of heating or cooling equipment, which may be determined by local market demand and housing stock. Larger contractors can make a significant portion of their revenue on demand service and service contracts and consider their customers "customers for life" - who need them for more than just the installation of their home comfort systems. A long-time service customer is very likely to choose their current provider when it is time to upgrade or replacement the system. Replacement system installations are the largest source of revenue overall for a contractor. Maintaining customer relationships and creating referrals is a high priority, and helps to assure the sale of a new system.

In New York State, there are no statewide regulations for HVAC technicians, which allows a low-barrier to entry to the business of HVAC contracting, and leaves much of the repair and installation work below the radar. However, there are some local license requirements. The cities that require licenses include:

- New York City
- Buffalo
- Ithaca
- Syracuse
- Albany

Types of Contractors

- Single truck operators
- Owner Operators
- Traditionals
- Marketers

Who works there?

- Business owner
 - Technicians/mechanics
 - Sales and marketing team
 - Project estimators
 - Admin staff, service managers, dispatchers, customer service
- * Single truck operators and Owner Operators are typically performing many or all of these roles

Key Motivators

- Profitability
- Cash flow
- Effective marketing and lead generation
- Employee retention - especially field service technicians
- Customer satisfaction
- Long term customer relationships "customer for life"
- Speed to market - quick, effective sales process
- Competitive advantages (i.e. active maintenance agreement base)
- Safety/Insurance - risk mitigation
- Business valuation (selling the business as an exit strategy)
- Brand/reputation



Contractor: Business Model

Where do Contractors make their money?

- New Installs - planned (30%) and emergency (70%)
- Demand service - repairs
- Service and maintenance agreements
- Service plumbing
- Additional services: light commercial, new construction, duct cleaning, IAQ, energy audits

How much money do they make?

- 40-45% gross margin on new installs
 - 60-70% gm on demand service
 - 60-70% gm on service agreements
 - 60-70% gm on service plumbing
 - From 40-70% gm on additional services
- * Contractor financial reporting methodologies vary; approximations based on ACCA methodology

Where do they add value to the marketplace?

- Relationships with general contractors
- Relationships with installation support contractors
 - Home performance
 - Plumbing
 - Electricians

Where are they spending money?

- Distributors for systems, parts and pieces
- Payroll
- Marketing and advertising
- Training and team development
- Fleet/trucking expenses
- Insurance/Legal/Compliance
- Health and fringe benefits, staffing expenses

How are they selling/generating leads?

- Marketing - Traditional combined with digital, social media
- Client Referrals
- Technician leads
- Manufacturer website leads
- Utility programs/partnerships
- Partnerships with general contractors, big-box retail, builders
- 3rd Party Influencer sites/reviews (i.e. HomeAdvisor, Angies List)

Key Market Interactions

- Engages existing customers re: home heating systems and service through service tech and sales teams
- Drives new leads through marketing efforts, word of mouth, recommendations
- Orders/purchases equipment from network of distributors - will utilize a network of distributors to ensure speed to market needs are met
- Attends training sessions with distributors and trade associations on technologies and specific equipment
- Intermediary between manufacturers/distributors and customers - share information about market demand

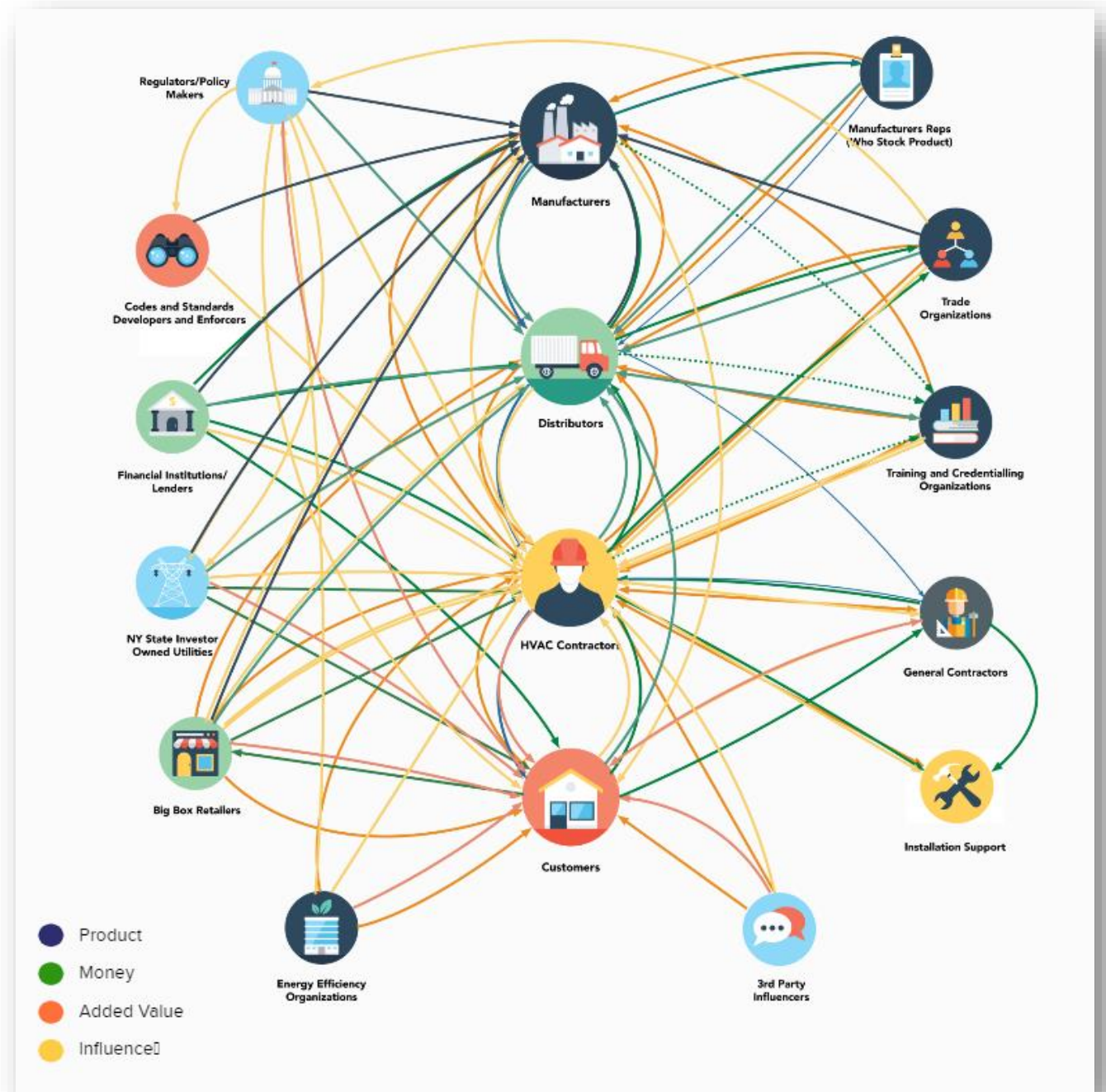
Top Performers

- Isaac Heating and Air Conditioning
- Halco
- Crisafulli Bros
- Appolo Heating, Inc.

*Information based on reported annual revenue, not specific to heat pump sales



NYS HVAC Supply Chain: All Interactions



NYS HVAC Supply Chain: Added Market Value Intervention Points

Added Market Value



Sneha Bernard
Natural Resources Canada



Natural Resources
Canada

Ressources naturelles
Canada

NRCan's ASHP Capacity Building Initiatives

Sneha Bernard, *Local Energy Efficiency Partnerships*

sneha.bernard@nrcan-rncan.gc.ca

Canada

Why do we need capacity building? Here's an example...

THE OPPORTUNITY

- Historic oil-heated home in Atlantic Canada
- No A/C, uneven comfort throughout house
- High heating and insurance costs

... This home **should be** a prime candidate for a heat pump retrofit!



CHALLENGES

- Challenge finding contractors to provide a quote
- Over-pricing due to perception of risk
- No right-sizing calculations performed
- No review of whole home needs
- “Default” is mini-split system to supplement oil furnace

... No market capacity to **deliver best-practice solutions** that meet homeowner needs



Natural Resources
Canada

Ressources naturelles
Canada

Canada



Video Series

Series of 30 “How-to” and Case Study videos featuring challenging and unique heat pump installations



Decision making app

Convert the ASHP Sizing and Selection Tool into an easily accessible web-app to facilitate decision making



Workshops & training

Run a series of contractor workshops focusing on sizing, selection and installation best practices

OBJECTIVES

- ✓ Build contractor confidence to undertake HP projects
- ✓ Improve decision-making & communication between contractors, builders, homeowners
- ✓ Embed best practices into system sizing & selection



Natural Resources
Canada

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Canada

Canada

Improve industry confidence with best practices videos

EXPECTED OUTCOMES

1. **Showcase challenging installations** & unique homes to encourage market participation
2. **De-risk projects** by providing resources to contractors
3. **Demonstrate best practices**, build confidence across the industry

Case studies videos including:



NEW HOMES

- Central ducted heat pumps
- Modular net zero homes
- High performance MURB

RETROFIT HOMES

- Forced air oil furnaces to HP
- Hydronic distribution systems
- Retrofit suites in MURBs

“How we did it” videos including:



- Right sizing heat pump systems & dealing with existing ductwork
- Multistage and variable speed heat pumps
- Controls for centrally ducted hybrid heat pump system
- Air to water heat pump configurations
- Retrofitting high temperature radiant systems



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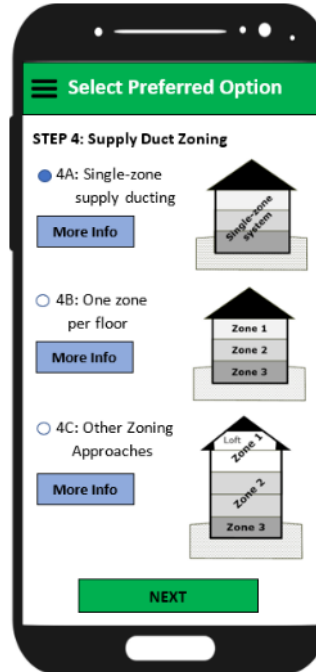
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Streamline decision making with an app

EXPECTED OUTCOMES

1. **Optimize system selection** based on home comfort & design needs
2. **Encourage right-sizing**, reducing overall project costs
3. Provide a **communication tool** between builders/homeowners & contractor



- ✓ Expands on existing resources in ASHP Sizing & Selection Guide
- ✓ Document decisions & reduces project risk
- ✓ Incorporates video library as a reference guide for contractors & homeowners
- ✓ User-friendly interface to identify heating, cooling & comfort issues in the home



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Build market capacity with regional industry workshops

EXPECTED OUTCOMES

1. Deep dive into **best practices**, design, and project risks, building on content from video and app
2. Create cohorts of **highly trained contractors** and installers
3. Identify and **address market barriers** and knowledge gaps



4

Workshop modules

40

Events in 3 years



Contractor & Energy
advisor audience



Regional delivery partners



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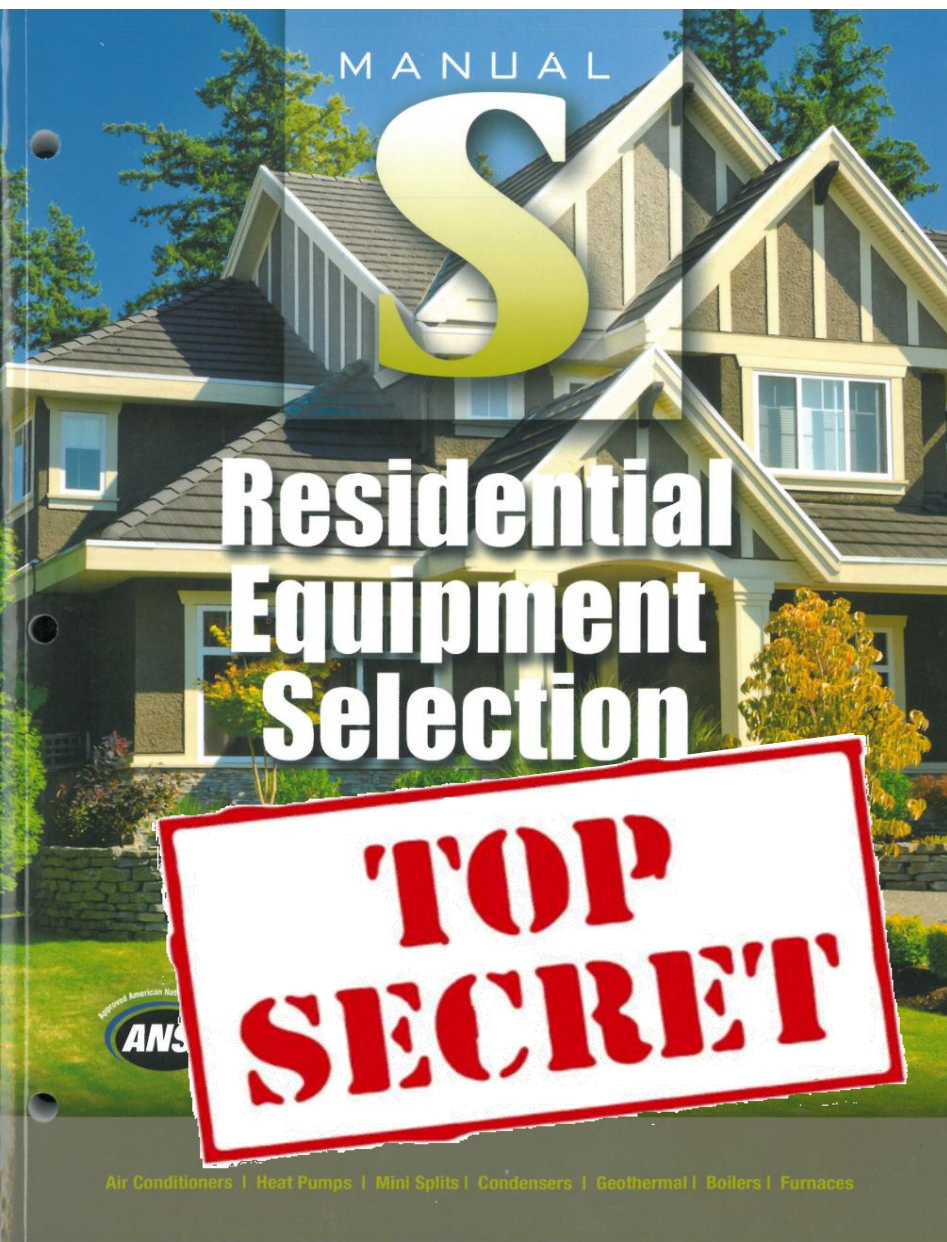
Canada

Wes Davis & Matt Akins
ACCA

Heat Pump Standards & Client Communication

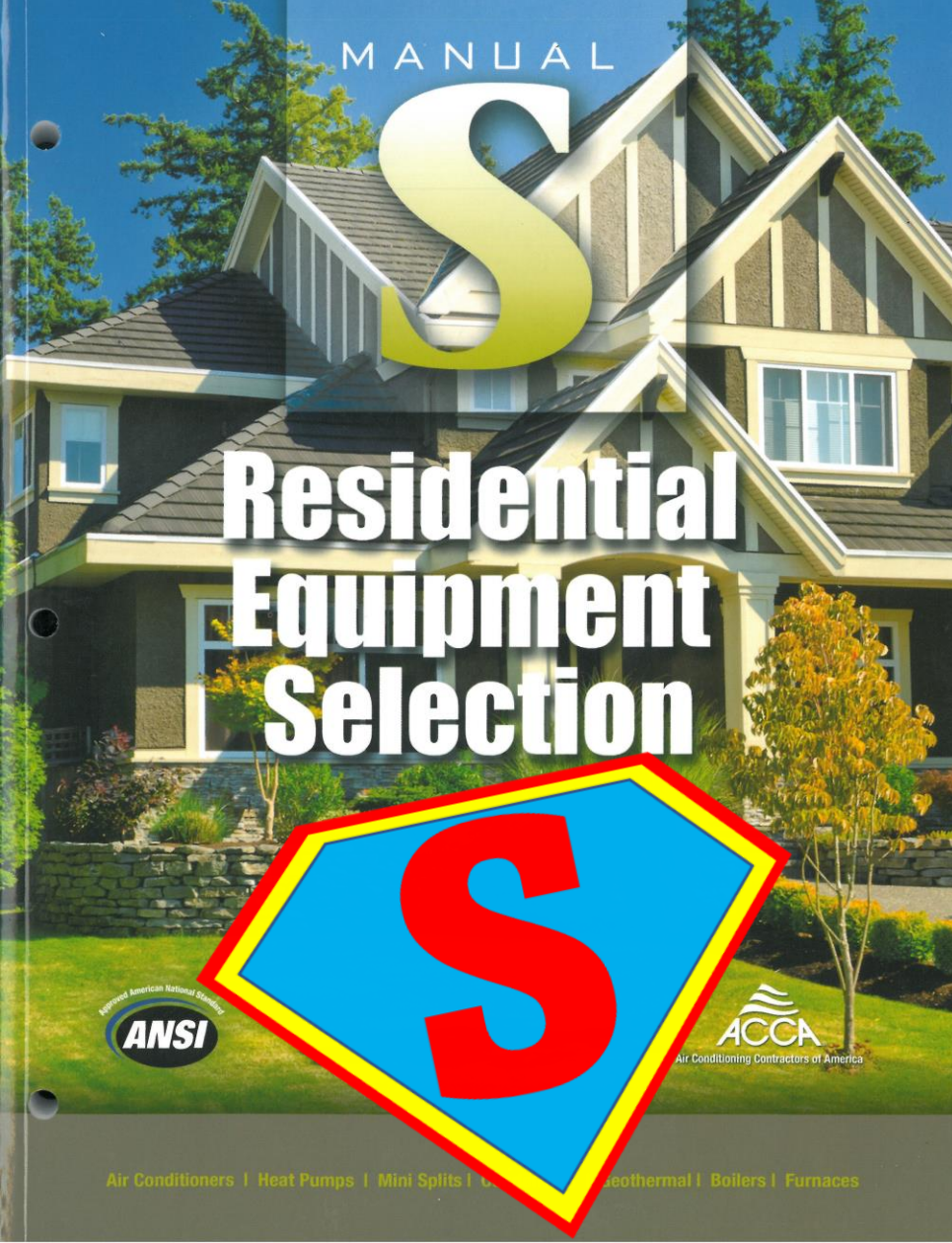


Air Conditioning Contractors of America



MANUAL S

**THE “S” DOESN’T STAND
FOR SECRET**

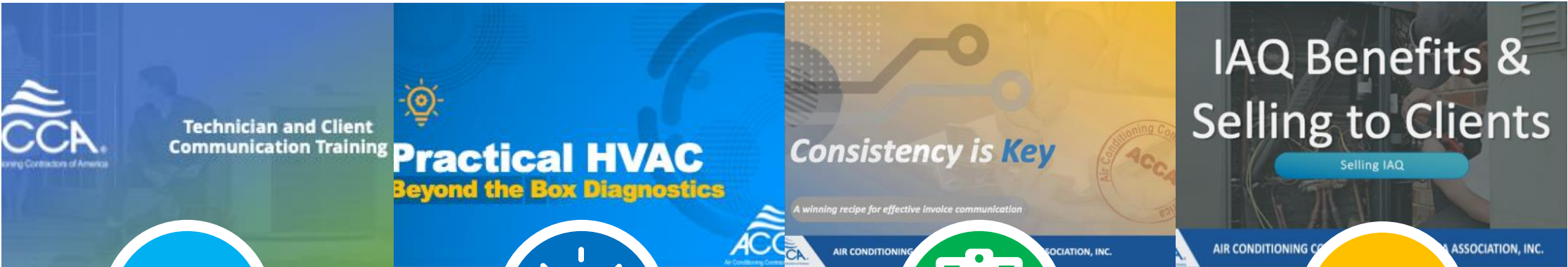


Manual S

Making It Super

- Expanded Definitions
- New Flowcharts
- Code Compliance Documentation
- Improved guidance for Heat Pumps

ACCA's Soft Skills Training



TACCT

Refine consumer communication skills



Practical HVAC

Best practices to increase technician competence



Consistency is Key

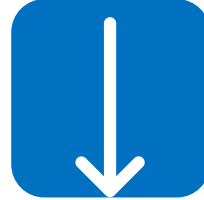
The importance of standardization, documentation, and consistency



Tech Rehab

New technical series created for HVAC contractors

ACCA's Soft Skills Training



REDUCE CALL-BACKS



REDUCE LIABILITY



INCREASE REVENUE



PROTECT BRAND INTEGRITY

Contact Information



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Caroline Hazard
Building Performance Association

BUILDING PERFORMANCE ASSOCIATION: ADVANCING WORKFORCE DEVELOPMENT

- **10K+ member organization of building performance professionals:**
 - contractors, non-profits, manufacturers, distributors, trainers, program implementers
- **Strategic Partnerships and Coordination**
 - Building Performance Institute
 - DOE, WAP
 - E4TheFuture, IREC, NEEP
 - State & Regional Affiliates
 - National & Regional Events



The future
of our
industry
**depends on
our people.**

www.building-performance.org

WFD NEEDS ASSESSMENT TOP FINDINGS...

Awareness of Building Performance Industry
Career Opportunities

Ability to Find, Hire, and Retain Workers

Challenges with Access to and Training Delivery
Methods

Need for Augmentation of Training Content



2020-21, engaged **over 800 members and industry stakeholders** via online surveys, video conference meetings, group sessions, and one-on-one interviews

KEY ACTIONS TO TAKE

- **Strengthen our industry's collective voice**
 - ✓ Raise awareness
 - ✓ Embrace tactics for equitable access and representation
 - ✓ Connect with sister trades and institutions outside our bubble
- **Connect the talent pipeline**
 - ✓ Enhance methods to find and attract candidates
 - ✓ Cultivate connection between trainees and job opportunities
- **Bolster employee retention**
 - ✓ Address benefits and wages
 - ✓ Develop an organizational culture of appreciation
 - ✓ Offer (re)training for management, office staff, and installer crews

Training & Careers Hub



<https://bpa.connectedcommunity.org/training-center>

HVAC RESOURCES



Certificates

Building Science Principles

- Site Supervisor
- Healthy Housing Principles

Core Certifications

- AC & Heat Pump
- Heating Professional
- Infiltration & Duct Leakage

<http://www.bpi.org>

April 11-14, 2022 | Nashville, TN



HVAC TRACK

19 sessions, including:

Full day Heat Pump Workshop (Monday)

Transitioning from Home Performance to Decarbonization

Designing and Installing Ducts for High Performance

Technical Sessions on Ventilation Sessions, Installation, and more...

<https://events.building-performance.org/national/>

Dan Lawlor
EPA ENERGY STAR



Introduction

- Dan Lawlor – U.S. EPA ENERGY STAR
- ENERGY STAR Objectives
 - Develop and promote ENERGY STAR ASHP specification
 - Identify and address barriers to increase demand for ENERGY STAR certified air source heat pumps
 - Facilitate and disseminate best practice education for installers
- Contact: Lawlor.Daniel@epa.gov



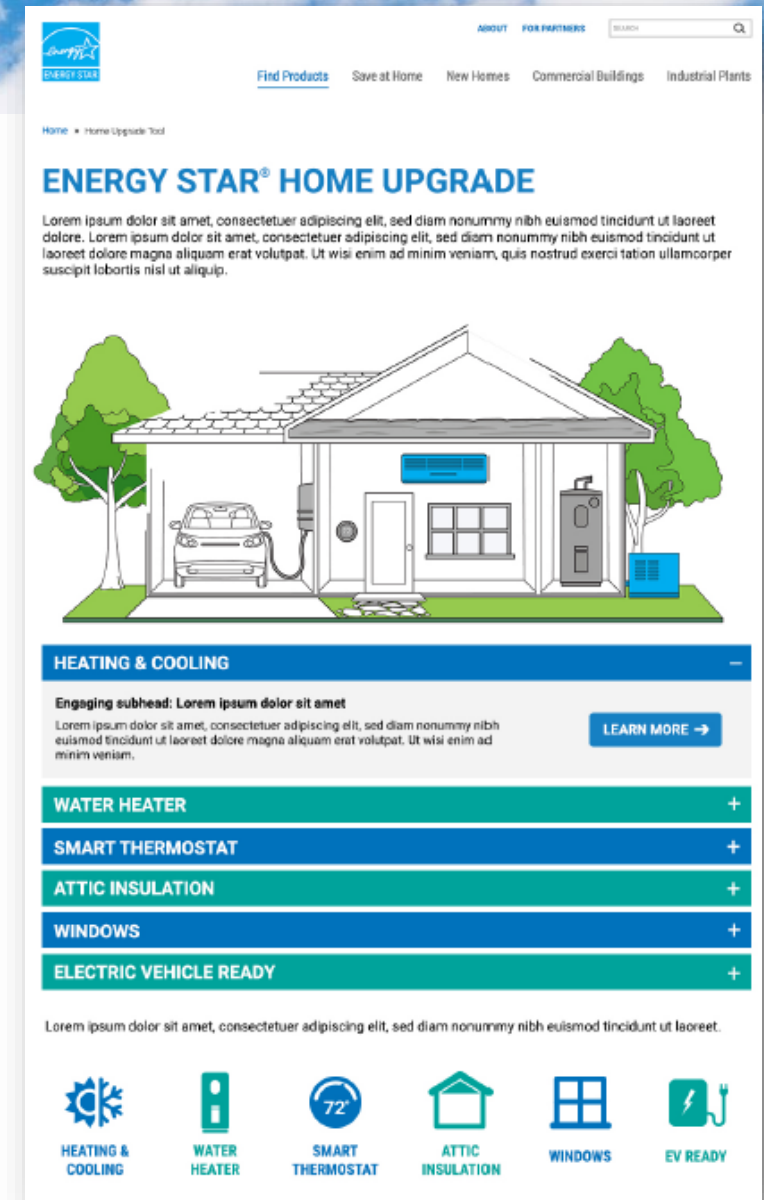


ENERGY STAR V6.1 Installation Capabilities

- Installation Capabilities:
 - Recent NREL research estimated that AFDD could save US 12 TWh/yr
 - Measures in the CAC/HP Version 6.1 specification advance this work
 - Criteria is optional, but products that meet criteria will be highlighted on the ENERGY STAR website. Centrally ducted CAC/HPs need to provide at least three and mini-splits and multi-splits at least two of the capabilities.
 - Coordinated with recent ACCA/RESNET Standard 310: HVAC Installation Grading

ENERGY STAR Home Upgrade Web Tool

- The ENERGY STAR Home Upgrade Tool helps consumers navigate the upgrade process
 - Provides information about each potential upgrade
 - Can highlight contractors with specific certifications
 - Provides contractors with a framework to discuss whole home upgrades



Maddy Salzman
DOE Building Technology Office

U.S. DEPARTMENT OF
ENERGY

Office of
**ENERGY EFFICIENCY &
RENEWABLE ENERGY**

Capacity Building & Developing New Talent for Advanced Heat Pumps

Madeline Salzman
Management & Program Analyst
Building Technologies Office



Clean Energy Workforce Vision & Goals

Clean Energy Workforce Vision:

*The United States has a **nationally-representative** workforce of **sufficient size, skill, and compensation** to carry out an equitable transition of America's energy infrastructure to achieve net-zero greenhouse gas emissions no later than 2050.*

Goal of Efforts:

To support this vision, EERE will work to increase awareness of the clean energy workforce, support strong skills development among those that make clean energy deployment possible, increase ease for new people to enter the clean energy workforce, and support action that increases growth and stability of clean energy sectors.



[Office of Energy Efficiency & Renewable Energy](#) » [About the Office of Energy Efficiency and Renewable Energy](#)

EERE's mission is to accelerate the research, development, demonstration, and deployment of technologies and solutions to equitably transition America to net-zero greenhouse gas emissions economy-wide by no later than 2050, and ensure the clean energy economy benefits all Americans, creating good paying jobs for the American people—especially workers and communities impacted by the energy transition and those historically underserved by the energy system and overburdened by pollution.


Strategy to Address Challenges

Goal: Ensure career pathways for a diverse and qualified building efficiency workforce that enable high performance buildings nationwide.



Workforce Development Activities

Analysis for Strategy Development



Background Research and Information to Support a Building Technologies Office Workforce Development Strategy


Sarah Truitt and Lucas Phillips, National Renewable Energy Laboratory

Madeline Salzman, U.S. Department of Energy Building Technologies Office

NREL is a national laboratory of the U.S. Department of Energy Office of Energy Efficiency & Renewable Energy. Operated by the Alliance for Sustainable Energy, LLC. This report is available at no cost from the National Renewable Energy Laboratory (NREL) at www.nrel.gov/publications. Contract No. DE-AC36-89OR21400

Internal Report
January 2020

Research & Development Funding Opportunities



Advanced Building Construction Initiative

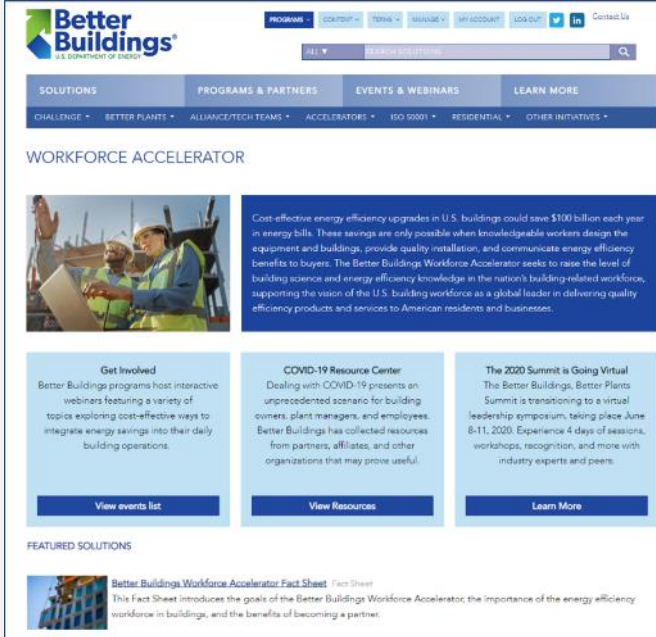
Home » Advanced Building Construction Initiative

The Advanced Building Construction (ABC) Initiative integrates energy efficiency solutions into highly productive U.S. construction practices for new buildings and retrofits.

What is ABC?
Learn about BTO's efforts to develop energy efficiency technologies and modernize U.S. construction and renovation practices.

[VIEW MORE](#)

Industry & Stakeholder Partnerships



Better Buildings
U.S. DEPARTMENT OF ENERGY

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WORKFORCE ACCELERATOR

Cost-effective energy efficiency upgrades in U.S. buildings could save \$100 billion each year in energy bills. These savings are only possible when knowledgeable workers design the equipment and buildings, provide quality installation, and communicate energy efficiency benefits to buyers. The Better Buildings Workforce Accelerator seeks to raise the level of building science and energy efficiency knowledge in the nation's building-related workforce, supporting the vision of the U.S. building workforce as a global leader in delivering quality efficiency products and services to American residents and businesses.

Get Involved
Better Buildings programs host interactive webinars featuring a variety of topics exploring cost-effective ways to integrate energy savings into their daily building operations.

[View events list](#)

COVID-19 Resource Center
Dealing with COVID-19 presents an unprecedented scenario for building owners, plant managers, and employees. Better Buildings has collected resources from partners, affiliates, and other organizations that may prove useful.

[View Resources](#)

The 2020 Summit is Going Virtual
The Better Buildings, Better Plants Summit is transitioning to a virtual leadership symposium, taking place June 8-11, 2020. Experience 4 days of sessions, workshops, recognition, and more with industry experts and peers.

[Learn More](#)

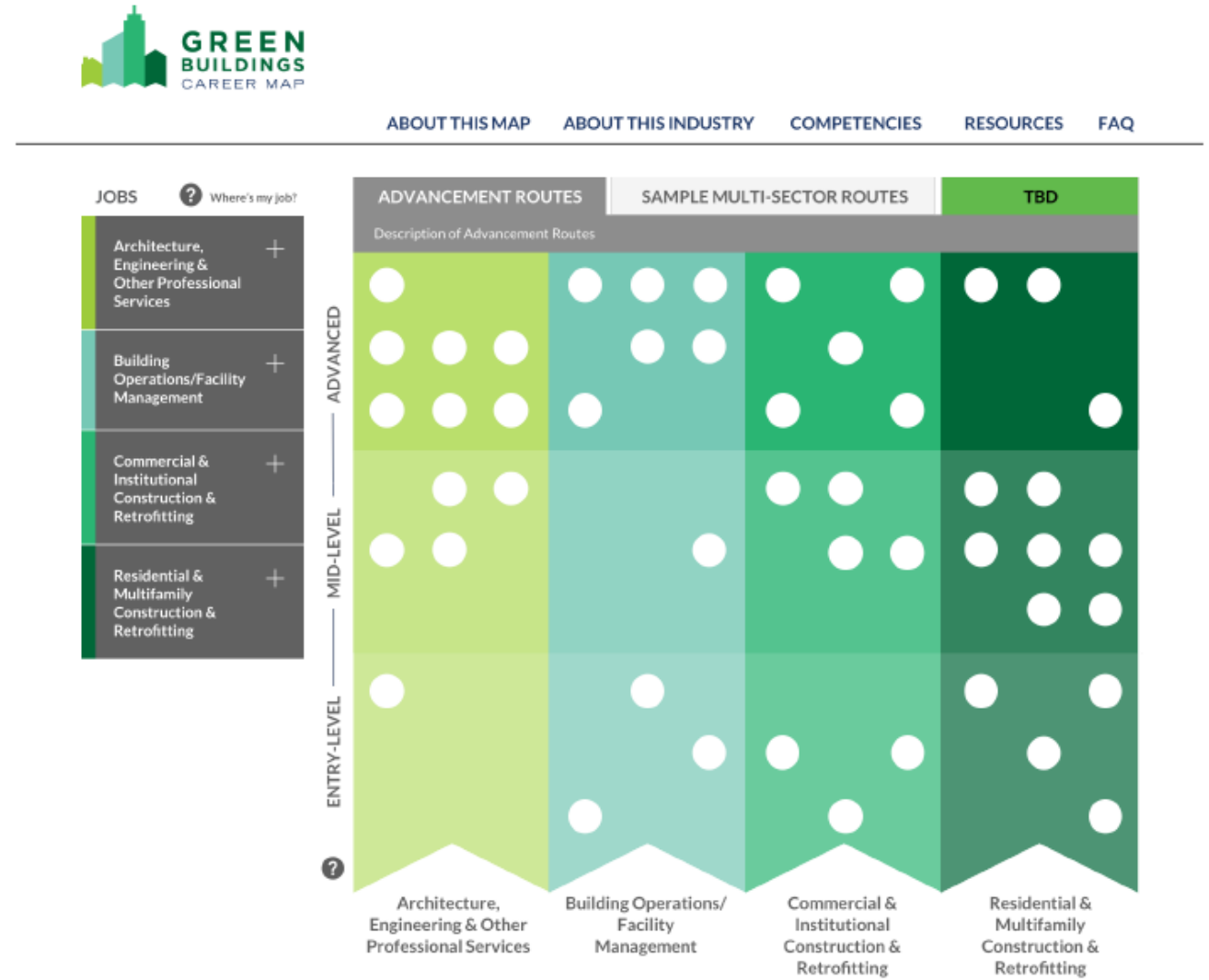
FEATURED SOLUTIONS

Better Buildings Workforce Accelerator Fact Sheet Fact Sheet
This Fact Sheet introduces the goals of the Better Buildings Workforce Accelerator, the importance of the energy efficiency workforce in buildings, and the benefits of becoming a partner.

Activities Supporting the Advanced Heat Pump Workforce

Green Buildings Career Map

- Information on 50+ careers across various sectors supporting green buildings
 - HVAC Contractor with Heat Pump Expertise
 - Heat Pump System Design Engineer
- Interactive webpage featuring career pathways, salary information, and educational requirements
- Developed by IREC as part of Advanced Building Construction funding award



Activities Supporting the Advanced Heat Pump Workforce

Developing & Deploying New Training Modules

Frontier Energy & International Center for Affordable Sustainable Technology (ICAST)

- Awarded projects working with Engage! Strategies, Santa Fe Community College, and industry partners to develop and pilot test new education & training materials on heat pump technologies for residential buildings
- Developed products will achieve Creative Commons licensing and will be available for others to use
- Builds on other awards developing entry-level training content for high school students and continuing education for building energy professionals



Laure Jeanne
Interstate Renewable Energy Council

Interstate Renewable Energy Council (IREC)



IREC builds the foundation for rapid adoption of clean energy and energy efficiency to benefit people, the economy, and our planet.

Laure-Jeanne Davignon
VP Workforce Development
laurejeanne@irecusa.org
www.irecusa.org

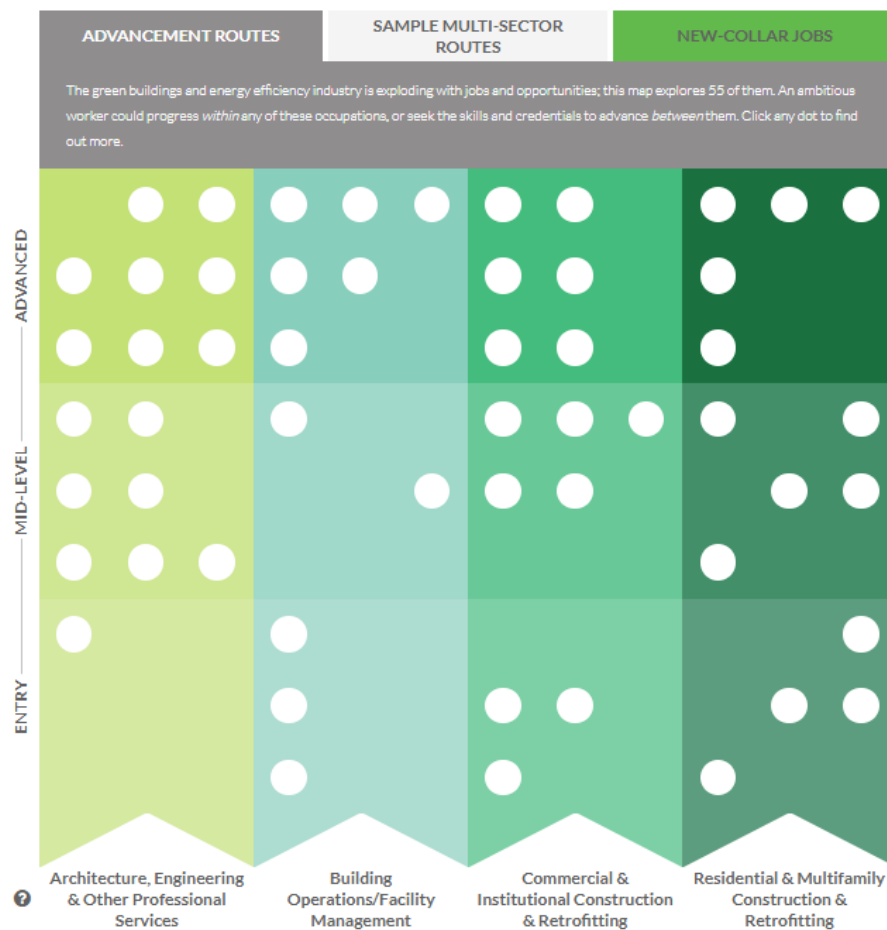
Career Maps


[ABOUT THIS MAP](#)
[ABOUT THIS INDUSTRY](#)
[RESOURCES](#)
[FREQUENTLY ASKED QUESTIONS](#)

JOB

Where's my job?

Architecture, Engineering & Other Professional Services	+
Building Operations/Facility Management	+
Commercial & Institutional Construction & Retrofitting	+
Residential & Multifamily Construction & Retrofitting	+



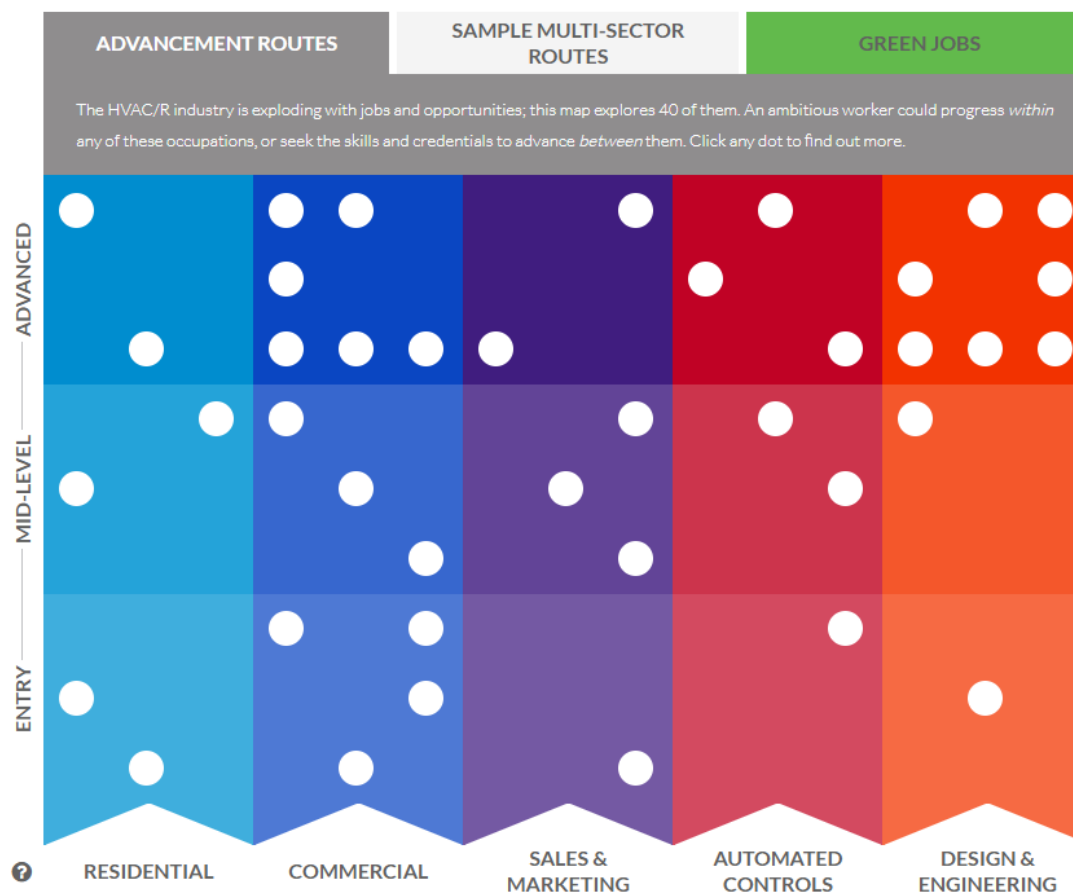
Career Maps


[ABOUT THIS MAP](#)
[ABOUT THE INDUSTRY](#)
[TRAINING](#)
[RESOURCES](#)
[FAQ](#)

JOB

[Where's my job?](#)

RESIDENTIAL	+
COMMERCIAL	+
SALES & MARKETING	+
AUTOMATED CONTROLS	+
DESIGN & ENGINEERING	+
GREEN JOBS	+



Building the Talent Pipeline

NATIONAL
CLEAN ENERGY
WORKFORCE
ALLIANCE



Cross sector effort uniting all clean energy workforce stakeholders focused on solutions to:

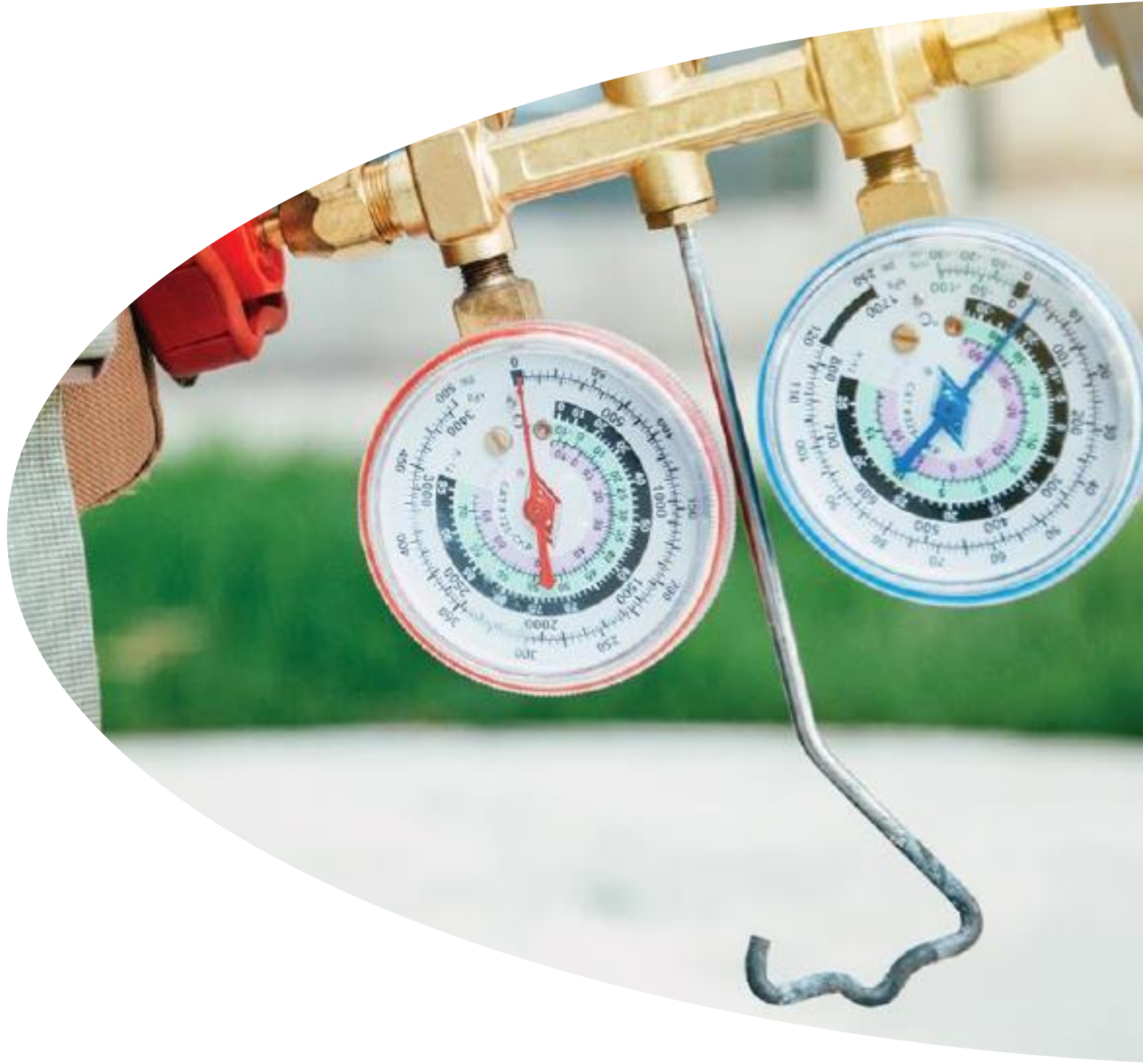
- Reach youth and transitional workers with messaging about clean energy careers (Energy Heroes)
- Integrate ASHP and other clean energy technology into existing educational and professional development frameworks
- Support HVAC and other companies in including clean energy technologies as a winning business strategy

Jason Thomas
Carrier



ADVANCED HEAT PUMP COALITION

Jason Thomas
Director, Regulatory Affairs
Jason.M.Thomas@carrier.com



Increasing Technician Capacity



KEY PROGRAM MESSAGES



TRAINING

Many companies will pay you while you learn on the job.



COMPETITIVE SALARY

2018 median pay was over \$47K/year* with the chance to earn more.



GREAT BENEFITS

Most employers offer paid vacation, healthcare benefits and 401(k).



DIGITAL TOOLS

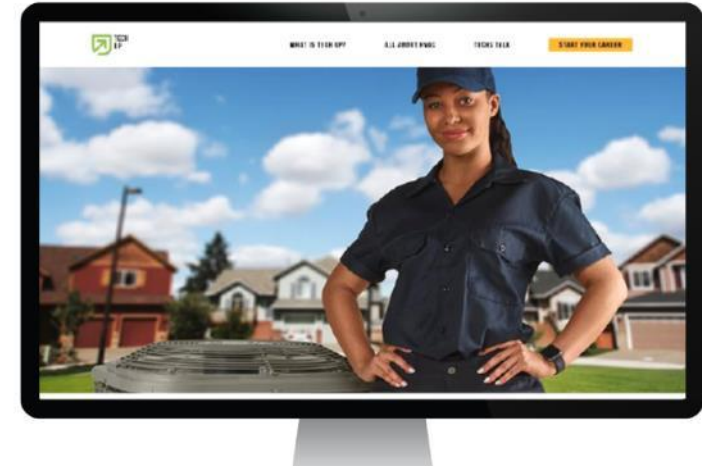
Learn new skills with virtual-reality training and digital apps.



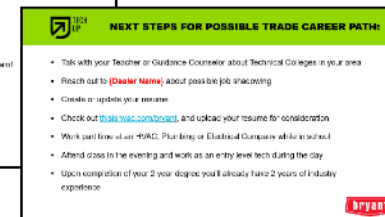
BE YOUR OWN BOSS

You'll have the chance to move up as you learn and progress.

* <https://www.bls.gov/ooh/installation-maintenance-and-repair/heating-air-conditioning-and-refrigeration-mechanics-and-installers.htm#tab-5>



ThisisHVAC.com



Opportunity

Job Fair

Custom Material

Training



Proprietary and Confidential

Improving Industry Skills

The screenshot displays the MY Learning Center website interface. At the top, the header includes the MY Learning Center logo, a search bar, and navigation links for Cart, Help, and My Account. A left sidebar contains icons for Home, Learning Paths, Courses, and Tech Docs. The main content area, titled 'Learning Paths', features a grid of nine cards, each representing a different career path with its respective number of online courses. The cards are: Business Owners (9 Online Courses), Customer Service Representative (15 Online Courses), Financial Operations (10 Online Courses), General Safety Training (8 Online Courses), Marketing Manager (10 Online Courses), People Management (9 Online Course), Sales Consultants (11 Online Courses), Service Managers (8 Online Course), and Technician HVAC Concepts (7 Online Courses). At the bottom of the grid, there is a pagination control showing 'Page 1 of 2' and an 'Items Per Page' dropdown set to 9.

Learning Path	Number of Online Courses
Business Owners	9
Customer Service Representative	15
Financial Operations	10
General Safety Training	8
Marketing Manager	10
People Management	9
Sales Consultants	11
Service Managers	8
Technician HVAC Concepts	7

<https://www.mlctraining.com/>

Martin Luymes
HRAI



Workforce Development Plan for the HVACR Industry in Canada

Accelerating Preparedness for the Low Carbon Economy

MARCH 8, 2022

Martin Luymes
mluymes@hrai.ca
800-267-2231 x235

Policy Context

- ❖ Pan-Canadian Framework
- ❖ Fed/Prov “Market Transformation Roadmap”
- ❖ Ongoing Province-level discussions on trades and apprenticeship issues
- ❖ Employment and Social Development Canada (ESDC)
Sectoral Initiatives Support Programs

Workforce Development Plan

Three Key Elements

1. Establishing appropriate trades training regulations in all provinces

- Most provinces have compulsory trade (R&AC) requirement for HP installers
- But focus is primarily commercial/ICI (4-5 year apprenticeship program)
- Two provinces have *residential* program well-suited to needs of residential HP installers
- Goal: duplicate this model in all provinces to create “red seal” designation
- This will create clearer “pathways” and facilitate inter-provincial mobility of workers

Workforce Development Plan

Three Key Elements

2. Upskilling/re-skilling existing industry personnel (e.g.)

- Making the switch from natural gas to heat pumps (online program)
- Equipment sizing and selection (design)
- Understanding the use of new refrigerants (safety awareness)
- Understanding unique requirements of GSHPs (partnership with IGSHPA)
- *Selling carbon reduction* benefits, not just energy efficiency

Workforce Development Plan

Three Key Elements

3. Training for Employers (Contractors)

- Understanding the opportunities arising from the energy transition
- Re-orienting businesses to include new activities (whole home retrofits/"HVAC 2.0")
- Best practices for attracting, training and retaining employees (guidebook)
- How to work with government/utility programs

Questions and Discussion

Next Workgroup Calls

WG #1 – Improved Test Procedure and QPL

- March 23rd at 3PM Eastern
- April 20th at 3PM Eastern

WG #2 – Roadmap and Manufacturer Engagement

- April 12th at 12PM Eastern

WG#3 – Best Practices – last meeting

- TBD

To join a workgroup email Paul.Raymer@icf.com

Steering Committee Meets Quarterly

- May 20th at 2PM Eastern

Thank You

Special thanks Midwest Energy Efficiency Alliance for hosting a website