Single Family Residential Program Update

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EmPower + Residential Energy Assessments (REA) Comfort Home

NEW YORK STATE NYSERDA

October 4, 2024

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Agenda



Clean Heat Connect

Online Demonstration

Comfort Home

NYHEP Transition

Residential Energy Assessment

• E-mail notifications

EmPower+

- No Heat Summary
- MyEnergy Training Schedule
- Revised Test-out Form is Live
- Heat Pump Updates
- Heating Equipment Update
- Reminder Photo Requirements
- Reminder Accessing Case Records

Clean Heat Connect

Clean Heat Connect

Partners:

- 8 Manufacturers, 14 Distributors Plan to grow to 30 partners this year
- Website:
 - 26,773 Total Visits
 - 9,797 Total visitors
 - 32,463 Clicks on Resources & Trainings
 - 1,255 NYS Clean Heat Participating Contractors
- Over 30 resources and market interventions developed
- Q3 2024 117 contractors engaged, 719 individual contacts through 11 events/trainings

Partners – Distributors

ABCO^{*} HVACR Supply + Solutions

























Partners – Manufacturers





Haier











HEATING & AIR CONDITIONING

SAMSUNG



BOSCH

Clean Heat Connect

https://CleanHeatConnect.ny.go

RESOURCES TRAININGS

Heat pumps are the future of residential heating in New York. Don't be left behind. The Clean Heat Connect website has helped:

9,797 Total Visitors 26,773 Total Visits

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32,463 Clicks on Resources & Trainings 1,255 NYS Clean Heat Participating Contractors

Clean Heat Connect

Clean Heat Connect is a network of distributors and manufacturers dedicated to expanding the adoption of heat pumps in homes across New York State. Find distributor and manufacturer hosted trainings, learn about sales and marketing strategies, and explore resources from NYSERDA, NEEP and trusted partners.

LEARN MORE



Installer Reference Materials

Review these resources to select the right heat pump for the job and install it for efficient operation and customer satisfaction.

- Heat Pump Home Runs
- IRA 25C Tax Credit Guide
- Refrigerant Regulation: The Transition to Low GWP Refrigerants
- <u>Air Source Heat Pump: Efficiency Ratings Explained DOE</u>
 <u>Appendix M1</u>
- NYSERDA Workforce Development Opportunities
- Green Jobs Green New York Financing
- Heat Pump Planner
- Don't Oversize
- ASHP Cold-Climate Duct Evaluation Guide
- Installer's Guide to Assessing Residential Electrical Service
- Protection from Electrical Surges
- Project Pricing Checklist
- <u>NEEP Cold Climate Sizing Support Tools</u>
- NEEP Sizing and Selection ASHP in Cold Climates
- <u>NEEP Installing ASHPs in Cold Climates Guides</u>
- ASHP Commissioning Checklist
- Snow Deflector Products
- Flare Fitting

Installer	Reference Materials
NYS Cle	an Heat Materials
Become	a NYS Clean Heat Contractor
Marketi	ng Tools & Materials

Technical Resources



Air Source Heat Pumps Don't Oversize





Oversizing a heat pump may result in comfort and cost issues

Applying specific strategies can help identify or prevent oversizing and the adverse effect it can have.

How Oversized is Oversized?

The impacts on energy use and comfort begin when air source heat pump systems are sized at 120% of the building load*. Severe impacts of oversizing can begin when systems are sized above 150%. At a certain point, the system may be entirely unable to achieve heating or cooling. For the homeowner, oversized heat pumps are costly, they reduce comfort, and they're more problematic than an oversized fossil fuel furnace or boiler.

Operational Issues

Low-Load Cycling*

Low-load cycling occurs when the minimum capacity* of the heat pump is higher than the heating or cooling load of the home. Because the system is removing/adding more heat than the home needs, the system will repeatedly cycle on and off. This results in inefficient operation, high energy bills, and increased wear to the heat pump's mechanical components.

Purge Cycling

Frequent low-load cycling over an extended period can drive the compressor into a purge cycle. During low-load cooling calls, some liquid refrigerant may not boil into a vapor while passing through the indoor coil. To prevent the excess liquid refrigerant from entering the compressor and damaging it, the system purges it. While purging, the system cannot respond to a cooling call, which leaves occupants uncomfortable. Extreme oversizing situations may force the system to start purging almost immediately after the start of a new cooling call, leading to a never-ending purge cycle. When stuck in a purge cycle, the system will have a high electric draw without providing meaningful cooling.

Comfort

An oversized system can push hot/cold air towards the thermostat or ductless head's temperature sensors before mixing evenly into the space. In these cases, the heat pump may falsely sense that the room's thermostat setting is satisfied and turn off the heat pump prematurely. This leads to uneven air temperatures throughout the house.

Dehumidification

Heat pumps dehumidify the air as they cool. In theory, a larger system would be able to wick more moisture from the air than a smaller system would. However, the process of dehumidification requires the heat pump to run for an extended period. Oversized systems have shorter run times and may fail to dehumidify the space.



Cost Issues

Upfront Cost: A higher capacity heat pump will have more upfront equipment costs than its right-sized counterpart. Installation costs may also be higher, especially if additional outdoor compressors or indoor units are needed to provide that capacity.

Energy Usage, Inefficiency, and High Bills: An oversized heat pump will be more expensive to operate. Inverter-driven heat pumps are most efficient when they are operating within their modulating zone* typically between 40% and 80% of full capacity. An oversized system will have more hours during which the load is below its minimum capacity, resulting in lowload compressor short cycling. Like most machines, heat pumps are least efficient when first starting up. Also, each time a heating/cooling call ends, the compressed refrigerant in the line stops moving and never reaches a distribution unit to heat/cool the house, wasting energy many times with each short cycle. The combination of short cycling and wasted effort leads to an overall efficiency penalty of as much as 25% during periods of low-load cycling.

Shorter Equipment Lifespan: Constant cycling stresses the equipment and increases wear and tear. This can lead to premature breakdown of mechanical components such as fans, the compressor, or valves, resulting in extra repair costs and early replacement.



How to Avoid Oversizing

Conduct an ACCA Manual J Load Calculation: Conduct your own sizing calculation and product selection using an industry approved method like ACCA Manual J, S, and D. Avoid using rules of thumb or replacing a system for a like-sized system without completing your own sizing calculation. Even if the previous system size was appropriate when it was installed, the home may have undergone weatherization or other improvements. Many fossil-fuel furnace and boiler systems are oversized themselves.

Use the Correct Design Temperature': Always use a design temperature that is appropriate for the location. ASHRAE and ACCA each publish recommended design temperatures by county and weather station that are based on historical weather data. Reference the ENERGY STAR Design Temperature Limit Reference Guide (2019 Edition) online.

Complete Building Take-Offs: Assess the entire building by measuring ceiling height, wall area, window area, roof and floor area. Conduct accurate take-offs' to estimate the insulation R-values, assembly details, and window U-values. For accurate cooling loads, capture the direction that each window and wall faces. South- and west-facing surfaces gain more heat from the sun. Remember that surfaces (walls, ceilings, floors) shared between conditioned spaces are adiabatic, which means they do not lose or gain heat and should not be included in the Manual J model. Conduct a blower door test to accurately assess the air tightness of the building.

Prepare for the Building's Future: Ask the homeowner what their plans are for the next 5–10 years of the home. Will they be adding insulation, re-siding, replacing windows, air sealing, remodeling, constructing additions, or completing other weatherization upgrades? Does the home have a high amount of air leakage or poor insulation? Consider planned weatherization efforts while conducting a Manual J to size for both now and the future so the system can operate efficiently for its entire life.

Look for Systems with Higher Turndown Ratios: A heat pump with a high turndown ratio* can provide all necessary heating and cooling while also having the ability of supplying low loads to the space. This helps maximize the time that a heat pump operates efficiently and minimizes or eliminates the time spent low-load cycling. Use tools such as the NEEP ccASHP Product List to identify equipment that will operate efficiently.



The Heat Pump Installer's Guide to Assessing Residential Electrical Service

Best practices and procedures for assessing a home's electrical capacity prior to heat pump installation.



Determining 100-Amp Minimum Service Capacity at a Glance



I. Weather head is a weatherproof service drop entry point where overhead power enters a home.

2. This chart may not be sufficient to determine service capacity and an electrician should be contacted for an occurate assessment.

High, Low, and Rated Capacity

If a home was built in the last 50 years, there may be electrical panels that can accommodate higher-capacity service but are wired from lower capacity. For example, an electrical panel with a 200-amp capacity may only be wired from 100-amp service. In such cases, the existing panel can stay when upgrading the service capacity, saving the homeowner replacement costs.

The rated potential capacity of the panel can be found on a sticker or tag inside the door. Alternatively, you can count the breaker spaces.

Twenty spaces indicate 100-amp rated capacity, 30 spaces indicate 150-amp rated capacity, and 40 spaces indicate 200-amps. There are 200-amp panels explicitly designed for tandem or half-space breakers.



Label inside electrical panel





For Heat Pump Contractors

How to select and document equipment that meets the IRA's 25C tax credit

The Inflation Reduction Act (IRA) of 2022 provides for federal income tax credits for the installation of qualifying heat pumps. The IRA's Energy Efficient Home Improvement Credit – Section 25C – provides up to \$2,000 annually in tax credits to lower the cost of a heat pump installation by up to 30 percent. Products must meet the Consortium for Energy Efficiency's (CEE) most efficient tier for the North/ Canada region to be eligible for 25C tax credits:

CONFIGURATION	LEVEL	SEER2	EER2	HSPF2	COP@5°F	CAPACITY RATIO
Ducted	CEE Tier 1	≥15.2	≥ 10.0	≥ 8.1	≥ 1.75	≥ 58% at 17°F/47°F
Ductless	CEE Tier 2	≥16.0	≥ 9.0	≥ 9.5	≥ 1.75	or ≥ 70% at 5°F/47°F

Table 1: CEE's Most Efficient Tier ASHP Product Specification

The NYS Clean Heat program provides customer rebates for any heat pump listed on the NEEP Cold Climate ASHP List and installed by a participating contractor. **Many heat pumps will qualify for both the NYS Clean Heat rebates and the IRA's 25C tax credit**. To determine the 25C tax credit's maximum value, the household would report the amount paid or incurred during the taxable year; i.e. the installation cost after the incentive has been applied.

Max out your customer's incentives

- Look for products that meet both criteria: a) NEEP listed for NYS Clean Heat and b) CEE's most efficient tier for 25C tax credits.
- Filter products using the NEEP Cold Climate ASHP List Eligible for Federal Tax Credit for the North climate filter (https://ashp.neep.org/#J), or cross compare on CEE's directory (https://www.ahrinet.org/certification/cee-directory)
- Provide the homeowner with the ASHP model number(s) and Air-Conditioning, Heating, and Refrigeration Institute (AHRI) reference number(s) on your customer invoice for their records.
- Inform the homeowner that they can apply for the Energy Efficient Home Performance Credit – Section 25C – on their tax returns. Prior to this, they should consult with their tax advisor.
- The homeowner should list the total NYS Clean Heat project purchase price less the incentive.
- The homeowner will be eligible to receive 30% of the cost, up to \$2,000, as a tax credit.
- The household must have sufficient federal tax liability to receive the credit.



Under the same tax provision, households can save 30 percent of the cost of electric service upgrades associated with heat pump installation, deducting up to \$600 annually.

The credit covers improvement to, or replacement of, a panelboard, sub-panelboard, branch circuits, or feeders that have a load capacity of at least 200 amps.



Air Source Heat Pump **Cold-Climate Duct Evaluation Guide**



Evaluate the Duct System Before Heat Pump Installation

Adequate duct sizing, air-sealing, and insulation are essential for a heat pump to operate efficiently and maintain comfort. Heat pumps supply warm air as opposed to the hot air that comes from an existing furnace. When repurposing existing ducts, it may be necessary to size the trunk and/or branches larger to provide the heat load of each room. In many cases the existing ducts were oversized initially and therefore will still work for the heat pump. To optimize the heat pump performance and customer satisfaction, installers must inspect and test the existing ductwork to determine if they can be repurposed as-is, need to be modified, or need to be replaced entirely by new ductwork.

This guide will help contractors make the decision to

replace, decommission, modify, or reuse existing ductwork. Homeowners can be reluctant to spend extra for the necessary changes to their duct system. Using this process allows you to confidently recommend changes and provide authentic reasons to backup your recommendations.

Why do Ducts Matter?

Perfectly sized ducts go completely unnoticed; supplying the correct amount of conditioned air to each zone without straining the system. Improperly sized ducts, however, can cause lack of comfort, hot and cold zones, vibrations, loud popping sounds known as oil canning, and decreases in efficiency. Excessive bends and compressions greatly restrict airflow through the ducts. Compressions of just 15% can decrease pressure by 400-800%.

If left unaddressed, the complaints a homeowner had about their existing system will likely carry over to their new heat pump. Fix these issues to avoid callbacks and increase customer satisfaction



USE EXISTING

If the ducts are in good condition, pass a visual evaluation, are within the acceptable range of total external static pressure (TESP), are sized to provide sufficient airflow for the heat pump, and do not have leaks or gaps in insulation.

If the ducts have minor deficiencies like leaks or gaps in insulation, if small adjustments can be made to balance the system, or if registers blow air directly onto occupants.

REPLACE OR DECOMMISSION

If the ducts are showing substantial signs of aging (rust or degrading materials), if the duct capacity is too small for the heat pump, or if the ducts are uninsulated in unconditioned spaces and insulation cannot be added.

Verify Duct Balancing

A properly balanced duct system will distribute the correct amount of heating and cooling to each room. Minor adjustments can be made with dampers, but installing a heat pump provides the opportunity to comprehensively balance the duct system. A Manual J must be completed to calculate the loads of each zone.

The suggested method to balance a system is to compare the zonal load of the room to the measured airflow:

- 1. Turn the fan on high and use a balancing hood or anemometer to measure CFM at each register
- Calculate the total airflow into each room
- Divide each room's airflow by its design load to get the room's balancing ratio (CFM/BTU)



- Less than average = More airflow needed
- More than average = Less airflow needed

Perform Manual D calculations to size ducts for airflow appropriate to the zonal loads, verify changes, and balance the system for complete comfort from the heat pump.

Test the Ductwork

Air flow

To assess duct condition and airflow, measure the duct airflow and compare to the heat pump manufacturer's rating. Measure the airflow at each register using a balancing hood or anemometer. Compare this value to the expected airflow and balance the duct system.

Cost of Duct Replacement

Some duct systems will not be adequate to reuse or fix for the new system. At this point, the homeowner must decide if they would like to replace the ducts or decommission them and install ductless heat pumps instead. Cost is often a driving factor. Consider these factors when providing an estimate:

- Removal of existing ducts
- New vents and registers
- Air sealing
- Insulating
- Duct material
- Duct location
- Permits

Duct Retrofit Best Practice

- Interview the homeowner
- Visually evaluate the ducts
- Confirm duct capacity meets heat
- pump needs
- Non-diagnostic commissioning

Duct leakage

Duct leaks waste energy by letting hot or cold air escape to the surroundings. Leaks force HVAC systems to expend more energy to maintain comfort. On average, 25% of air is lost through leaks which equates to a 25% increase in energy use. Conduct a duct leakage test to measure airflow and identify leaks. Seal leaks detected through the visual inspection prior to testing the system for leakage.





- All + and + + items
- Assess duct leakage with duct-blaster or blower door and pressure pan
- Complete a Manual D and compare to existing ducts

All + items

(TESP)

hood

Verify duct balancing

Check total external static pressure

Measure airflow at registers with flow-

Heat Pumps: Protection from Surges



Modern heat pumps rely on sophisticated electronics featuring circuit boards equipped with power-control circuits. These circuits convert alternating current (AC) into variable-frequency direct current (DC) signals, enabling compressors to adjust speed according to heating or cooling demands. Sensors and microprocessors manage the behavior of the compressor, fans, and refrigerant metering valves. This coordination optimizes system performance.

The advanced microprocessors and circuit boards integral to cold-climate heat. pump operation are susceptible to electrical surges from the grid or household appliances. Whether through a catastrophic event or a series of low-level surges over time, electrical surges can render the system either partially impaired or completely inoperable. In such cases, a damaged circuit board cannot be repaired and must be replaced. Install a surge protector to protect your customer's investment and reduce your time spent on call backs.

Electrical Surges

An electrical surge, also known as a transient, refers to sudden fluctuations in voltage, current, or transferred energy within an electrical circuit. These surges typically occur when the flow of electricity is abruptly interrupted and restarted, or when electrical energy is sent back into the system from an external source.

WHERE ELECTRICAL SURGES COME FROM:



Power transients in other large equipment (refrigerator or air conditioner) on the same circuit

> Malfunctions caused by power providers



Electromagnetic pulses

Inductive spikes

Surge Protectors

Surge protectors can safeguard against electrical surges to protect equipment and reduce callbacks. When a surge exceeds the maximum rated voltage of a surge protector, the device either limits or removes voltage to the protected equipment, effectively shutting it down, akin to a circuit breaker tripping.



Whole-Home Protection

Whole-home surge protection systems are designed to detect irregularities in electrical currents, ranging from lightning strikes to minor fluctuations in voltage. When such irregularities are sensed, these systems swiftly divert excessive voltage into the ground before it can reach a home's electronics, thereby safeguarding them from damaging spikes.

Notably, the 2023 National Electrical Code (NEC 230.67) mandates the installation of whole-home surge protection systems in new homes and when electrical service equipment is upgraded or replaced, underscoring the importance of these systems in modern residential electrical infrastructure.

Surge Protection Best Practices







Protect against surges from the grid and surges from within, with both whole-home and component protection.

Best

Component Protection

While main panel surge protection helps against external surges, it may not cover internal surges. In contrast, component surge protection is installed directly at a specific location along the heat pump's circuitry - typically at the electrical disconnect, but also possibly at the main panel - to protect the heat pump directly and specifically from all forms or surge. Some electrical disconnect boxes come with surge protection integrated within, others can be paired with a component surge protector at the disconnect.

Note - this is different from a ground fault circuit interrupter (GFCI) which may also be included in the electrical disconnect but does not protect from line surges.

Component surge protectors, starting at \$50, will help prevent thousands of dollars in damage and time spent on call backs repairing a heat pump. Protect your customer's investment, protect your callback and warranty response budget. Talk to your distributor about what they recommend, and offer surge protection devices with all your heat pump installations.





surge protector



Figure 3: External surge protector







Figure 1: Whole-home surge protector

Heat Pump Home Runs

Heat Pump Home Runs is a set of winning design strategies for full displacement heat pump installations. Contractors can view heat pump design options for various common home types and be reminded of key technical considerations to review on each job.

- <u>1-story Ranch (PDF)</u>
- <u>1-story Extended Ranch (PDF)</u>
- 1.5 Story Cape Cod (PDF) []
- <u>2-story Colonial (PDF)</u>
- Manufactured (PDF) [2]
- Townhouse (PDF) [2]





Heat Pump Home Runs

Air Source Heat Pump

→ 1.5 Story Cape Cod Home



Cape Cod-style homes are 1.5 stories with living space on the first floor and bedrooms on the second floor. Often, they don't have dedicated returns on the second floor, making ductless heat pumps the best option upstairs. Tip: run refrigerant lines through knee walls!

NYS Clean Heat

Existing Duct Work Evaluation

If the answer to any of the questions below is "no" then the distribution system is not in good working order and likely needs modification or replacement to accommodate a ducted heat pump.

- » Is the duct system obviously noisy with the fan on?
- » Is the duct work sealed?
- » Is the duct work free from panned or cavity returns?
- » Does the current duct system provide adequate airflow for heating with a heat pump?

Follow Best Practices!

» Measure system airflow to get a baseline

» Perform a Manual D to determine required duct sizing

Which heat pump design is right for this house?

Is the ducted distribution in good working order (or can be functionally modified in place)?



Yes

Recommendation – Ducted + Ductless: Ducted system using existing ducts where possible. Use additional ductless to serve bedrooms on second floor.

No, does not have duct work or in it is in poor condition.

Recommendation -

systems to serve each

Several ductless

zone of the house.

Ductless:



 a calculation.
 » Look for opportunities to reduce the load with air sealing and insulation.

Learn More About System Design Recommendations

Ducted + Ductless Considerations

» Evaluate supply and return duct work.

- » If there is no existing central AC, evaluate the electric panel capacity.
- » If there are no dedicated returns on the second floor, modify the duct system to serve the first floor only.
- » Install ductless units on the second floor. Cape Cods often have low ceilings and small attics. A compact ducted unit installed in the knee wall that serves both bedrooms is a good solution.



Ductless Considerations

- » Evaluate the electric panel capacity.
- » Install multiple single-zone heat pumps for the easiest way to match capacity to load.
- » Install compact ducted units in the knee wall to serve both bedrooms if there are low ceilings and a small attic.
- » Avoid over-zoning: using multiple ductless heads for a given outdoor unit requires careful sizing around the min and max capacity of the unit and the load served.



Electric Panel Capacity Evaluation

Panel upgrades add significant cost to a job. Use the tips below to evaluate the likelihood a panel upgrade is needed.

- » If the home already has central AC panel capacity is probably adequate.
- » If the house is served by a 100 amp panel an upgrade is likely required.
- » If there are fewer than 2 empty breaker slots available, discuss the below options with an electrician. Options by cost:
- \$ Support another load with a tandem breaker and use thin double-pole breaker for heat pumps.
- \$\$ Add a subpanel to combine loads to free up space on the main panel.
- \$\$\$ Use an automatic circuit sharing device such as
- NeoCharge, Dryer Buddy and others.
- \$\$\$\$ Upgrade to a larger panel.



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About NEEP

On behalf of clean energy and energy efficiency stakeholders, NEEP is pleased to host the Cold Climate Air Source Heat Pump (ccASHP) Product List. This Product List was originally launched in 2015; for more on the background, visit the ASHP Initiative. The list includes ASHP systems that meet the latest version of the ccASHP Specification. The voluntary specification includes requirements for both performance levels and a series of reported performance standards.

Please note that being listed does not necessarily mean a product is appropriate for all cold climate applications. Consumers, contractors, and designers should review building loads, equipment capacities at design temperatures, and other important factors before selecting equipment. Visit NEEP's Installer and Consumer Resources for more information.

Ready to search the list?



DISCLAIMER- Some of the performance values reported as part of the Cold Climate ASHP Specification are NOT derived from industry standard test procedures or third-party tested/verified (e.g. performance values at 5°F). Performance in some instances may be represented by manufacturer's engineering data. This site also uses cookies to improve consumer experience.

Refrigerant Regulations



The Transition to Low Global Warming Potential Refrigerants

What changes are happening?

The United States Environmental Protection Agency (EPA) is phasing out hydrofluorocarbon (HFC) refrigerants as part of its focus on reducing environmental harm. HFC refrigerants are currently widely used, however, they are being phased out because of their high global warming potential (GWP). HFCs are powerful greenhouse gases. They take an average of 15 years to decompose in the atmosphere and can absorb thousands of times more energy than carbon dioxide.

The American Innovation and Manufacturing Act of 2020 (AIM Act) and It's Regulations

- · Enacted by Congress in 2020 as an effort to reduce HFCs
- Reduce HFC consumption by 85% by 2036 through production and trade caps
- Facilitate a transition to next-generation refrigerants
- Regulate the reclamation of HFCs to minimize atmospheric release

How does this affect heat pumps?

The AIM Act regulations will limit both the availability and installation of heat pumps that use R-410A and other high GWP HFC refrigerants. Through its refrigerant production limits, it will also impact the availability and price of refrigerant itself – for both new R-410A installations and recharges. The new suite of lower GWP refrigerants cannot be used as a drop-in replacement.

EPA Dates to Know

Starting January 1, 2025, heat pumps using refrigerants with GWP>700, including R-410A, cannot be imported or manufactured.

Starting January 1, 2026 they cannot be installed.

AIM Act HFC Refrigerant Consumption Stepdown²



Manufacturing volume caps, relative to 2019, are enacted to reduce the production of HFCs. As less volume is produced, reclamation will become more important and the cost to recharge of systems will increase.

New York State Proposed Regulation

New York State Department of Environmental Conservation (DEC), as the agency regulating refrigerant emissions in New York State, recently proposed amendments to a regulation titled 6 NYCRR Part 494, "Hydrofluorocarbon Standards and Reporting." DEC is in the process of reviewing comments to the amendment proposal and assessing alternatives suggested by the comments. DEC outreach communications make it clear that, while the DEC proposed regulation differs from EPA regulations, it is intended to align with the AIM Act. Follow DEC announcements to see how the final rule may impact refrigerant availability and use.

— Meet the New Refrigerants —

The replacements for R-410A and other high GWP HFCs come from a family of refrigerants with higher flammability potential. ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) assigns refrigerants a safety classification based on their toxicity and flammability. The new refrigerants – R-32 or R-454B for most manufacturers – have a classification of A2L.

Refrigerant GWP Table

Refrigerant	Classification	EPA SNAP approved for Residential and Light Commercial AC and HPs	GWP100 Standard*
R-410A	A1 (no flame propagation)	Previously	2090
R-454B	A2L	Yes, as of May 6, 2021	470
R-32	(Lower flammability)	Yes as of April 28, 2023	675
R-290	💫 A3	Pending	3
R-441A	🚰 🏠 (Higher flammability)	Pending	5

Note: A3 refrigerants may be used in packaged heat pumps in the future.

"GWP100 is from the Intergovernmental Panel on Climate Change (IPCC) 2007 Assessment Report (AR4)

What are the safety requirements of A2L and A3 refrigerants?

While new to heat pump applications, A2L and A3 refrigerants have an extensive history of safe and effective use in selfcontained window HVAC units, car ACs, and refrigerators. These refrigerants are safe to use when handled properly and installed in equipment designed for them. ASHRAE Standard 15 provides safety requirements for these systems that include precautions such as non-sparking materials. The 2024 International Mechanical Code (IMC) Chapter 11 contains codes and standards for flammable refrigerant in residential spaces, requiring protection against physical damage to refrigerant lines.

Review these standards to ensure they are met. Refer to the manufacturer for safety requirements for the heat pump in question and to learn more about the refrigerant they will be using.

It is crucial to:



Ventilate - Conduct all servicing in a wellventilated area. Eliminate • Ensure no ignition sources are present.

- Properly ground the system.
- Keep a class B rated dry powder fire extinguisher on-site during work and transportation.

Always review the relevant safety data sheet (SDS) and the original equipment manufacturer (OEM) manual before starting work and use the correct personal protective equipment (PPE).

Do installers need new tools and equipment?

Yes, according to ASHRAE, electronic tools and testing equipment must be rated for use with flammable refrigerants. The four tool categories that require A2L compatibility are gauges and manifolds, recovery machines, vacuum pumps, and leak detectors.

Not all refrigerants will be compatible with polyolester oil (POE). Ensure the selected refrigerant oil is compatible with the refrigerant being used.

Do installers need additional training?

Yes, installers should take A2L specific trainings to learn safe installation, storage and transportation practices. These training courses are offered by equipment manufacturers.

Are A2L refrigerants drop-in matches?

No. A2L refrigerants cannot be used as direct replacements for A1 refrigerants in existing heat pumps. A2L refrigerants can only be used in equipment designed for them due to the refrigerants operating at different pressures and required spark-prevention features.



A2L refrigerants should not be freely vented. They have low GWP but not zero.

¹ GWP measures how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO2).

² https://www.epa.gov/climate-hfcs-reduction/frequent-guestions-phasedown-hydrofluorocarbons

New York Department of Environmental Conservation Climate Change Regulatory Revisions: https://doc.ny.gov/regulatory/regulations/proposed-emergency-recently-adopted-regulations/climate-change

CHC-CON-refrigerantchanges-fs-1-v1_06/24



Installation Resources

ASHP FIELD ASSESSMENT HOT LIST

Clean Heat Connect



NYS Clean Heat's ASHP field assessments verify installed heat pumps operate as intended. Improve your ASHP assessment scores by following the tips below:

INDOOR UNIT CLEARANCES

SNOW-PROTECTION

Prepare for Snow - from Above and Below

- Outdoor units must be positioned so they do not get buried in snow. Use risers, stands, or wall-mounts either 6", 12", or 18" based on the location.
- Place the unit under a deck or porch roof.
- 2) Outdoor units must be protected from excessive snow and ice from above. An asphalt roof, with a working 🔶 —
- gutter is sufficient with vertically-aligned fans. Roof slides and sluffs can block airflow and damage the fan
- blades. Instead: · Place the unit on a gable end, with no snow or rain drip.
- · Place the unit completely under an eve overhang so the drip line misses the unit
- . Cover the unit with a snow-shield (ensuring sufficient airflow).
- CLEARANCE Room for Airflow and OWNER-EDUCATION Maintenance Follow the Installation Train to Operate and Maintain Manual to ensure all clearances are met.

· Train homeowners how to operate and maintain their new system. · Supply homeowners with all product manuals and warranty documentation.



REFRIGERANT LINE PROTECTION Unit to Unit Coverage · Insulate the entire line - all the way to the connections indoor and out. Use UV protective products or sheathing for all sun-exposed lines.

OUTDOOR UNIT

Each assessment receives a score and an associated Site Assessment Report. Any non-conformances observed will be shown in a Corrective Action Report.



CONDENSATE LINE ۵.

Direct condensate drains to a safe location that does not cause water damage or a slip hazard.

SAFE ACCESS 9

Ensure the Homeowner can access all units without avoidable risk.

DUCTWORK

Properly support all lines.

Seal all ducting. Ducts are insulated or in conditioned area.

g ELECTRIC DISCONNECT Install an electric disconnect for the outdoor unit.

CHANGE ORDERS

e

Double-check that the system on the incentive application is the one installed - indoor and outdoor units. No last second swap outs.

Statewide Heat Pump Program Recommended Air Source



Heat Pump Commissioning Checklis

This is not a required NYS Clean Heat Program Form, it is a helpful checklist that should be completed on every job to ensure a quality installation.

-	-	 _	
100			Inchestor.
1 141			100 000 0000

Site Owner Name

Account Number

Model Number

Manufacturer

Heat Load Served by ASHP (check only one)

ASHP project serves Full Load Heating (90% and 120% of design heating load)

ASHP project serves Partial Load Heating

I confirm that I have used the following tools to calculate the home's heating and cooling loads (select all that apply)

ACCA Manual J ACCA Manual S ACCA Manual D Code Approved Equivalent

	Installer to complete. Check Done or N/A Column. Fill in blanks.							
Done	NA	Item Description						
	Heat Pump Units							
		Outdoor unit height above grade (inches) to avoid snow line:						
		Outdoor unit is under roof drip line and is protected by ice/snow shield.						
		Outdoor unit was measured to be level and is fastened to structure or mechanical pad.						
		Outdoor unit has unobstructed airflow as required by manufacturer.						
		Indoor unit has clearance for service and operation as required by manufacturer.						
		Indoor unit is properly located, properly fastened to structure, and is level.						
		Condensate line is supported approximately 4 feet, is pitched to outlet, and drains water.						
		Line Set						
		Diameter of line set						
		Minimum line set length per manufacturerMaximum Length						
		Maximum line set length permitted by manufacturer for factory charge						
		Maximum line set vertical difference per manufacturer						
		Installed line set lengthInstalled vertical difference						
		Line set length exceeds manufacturer's requirements for factory charge						
		Refrigerant added: PoundsOunces						
		Line set purged with N ₂ Pressure tested with N ₂ Evacuated to 250µm or per manufacturer.						
		N, test pressure (PSIG)Test duration (minutes)						

Done	NA	Item Description				
		Vacuum Level (µm) Vacuum duration (minutes)				
		Brazing joint(s) was required. N ₂ purge used during brazing operations.				
		Flare connection tightened per mfg.'s recommended torque. Torque setting				
		Line sets and units were sensed with refrigerant detector and no leaks were found.				
		Insulation completely covers line sets. Insulation UV protection provided exterior of building.				
		Floor/Wall/Ceiling pipe penetrations are sealed.				
		Operation/Controls				
		Unit(s) were operated in heating and cooling modes to verify proper operation.				
		Continuous fan function disabled.				
		If installed, the dual fuel outdoor cutoff control is functioning as designed to optimize use of ASHP for heating.				
	Ducted Units					
		Design airflow Design discharge static pressure				
		Measured airflow Measured static pressure				
		Ducts were sized to ACCA Manual D or equivalent.				
		Ducts are sealed, and no leaks are evident.				
		Any ducts outside condition space are insulated. Please refer to IECC/IRC sections R403.3.1, R403.3.2, and R402.4.11 for industry standards.				
		Information to Site Owner				
		I have provided an Owner's Manual for the Heat Pump to the Site Owner.				
		I showed the Site Owner how to control the Heat Pump including turning on and off, adjust the temperature, and switch between heating and cooling, I explained preventive maintenance requirements including how to clean and/or change the filter. I showed the Site Owner what alarms look like when the heat pump is not functioning properly.				
		I provided the Warranty to the Site Owner. The Site Owner understands who to contact for service.				
		I have informed the Site Owner that I am a participating contractor in the NYS Clean Heat Statewide Heat Pump Program and therefore a Quality Assurance field inspection of the installed Heat Pump may be conducted.				
		When applicable, the Site Owner's Invoice demonstrates the incentive amount(s) being passed onto them.				

Installer Name

Date



Installation

Learn the best installation techniques from professional heat pump installers.

Featured Videos:

- Flare Fitting
- Sizing, Design, and Product Selection
- Installation Challenges
- Installation Successes

Flare Fitting

EXPLORE THIS SECTION

Calendar

Installation

Sales



Sizing, Design, and Product Selection

Marketing Resources

Marketing Tools & Materials

Find best practices to better market and sell cold climate heat pumps.

Heat Pump Planner

The NYSERDA Heat Pump Planner can be used to show customers how heat pumps might look in their home. A short quiz shows consumers the likely configurations that work for their home type. The planner is best used as an introductory tool to show the different indoor unit possibilities and configurations.

Explore the Heat Pump Planner

EXPLORE THIS SECTION

Installer Reference Materials

NYS Clean Heat Materials

Become a NYS Clean Heat Contractor

Marketing Tools & Materials

Manufacturer/Distributor Partners

NEEP Air Source Heat Pump Buying Guide

This overview is best for customers that like to do their research before committing. It gives them an overview of the technology and questions to ask their contractor. By hitting all the points in Part 2 How to Proceed - Shop Like a Pro - you will come off as being thorough and having the customer's best interest in mind.

Air Source Heat Pump Buying Guide

NYSERDA Residential Customer-Facing Materials

- Heat Pumps Residential: Buyer's Guide [PDF] [2]
- Heat Pumps Residential: Why Air Source Heat Pumps are a Better Choice You Compare [PDF] [2]
- Heat Pumps Residential: Options [PDF] []
- Heat Pumps Residential: Best Practices for Your New Heat Pump [PDF]
- Heat Pump Water Heaters: For Residential Properties [PDF]. C

NYS Clean Heat

NYS Clean Heat Materials

NYSERDA and the NYS Electric Utilities have compiled a wide variety of resources to assist the NYS Clean Heat Participating Contractor Network. The clean heating and cooling solutions offered through NYS Clean Heat will help residents, small businesses, and commercial and multifamily building owners reduce their energy usage and cost.

- Program Manuals Find program details and requirements.
- CHG&E, NGrid, NYSEG, O&R, and RG&E (PDF)
- Con Edison (PDF) [2]
- <u>Enrollment Poster (PDF)</u> [2] For distributors to display in their showrooms as a quick reference guide for installers interested in becoming NYS Clean Heat participating Contractors.
- Correct and Avoid Field Assessment Non-Conformances (PDF)

 C Outlines the best practices for correcting the most common non-conformances identified in NYS Clean Heat Site Assessment Reports for ASHP Installations, and how to avoid these non-conformances in future reports.
- Why Air Source Heat Pump Field Assessments Matter (PDF). C The NYS Clean Heat QAQC field assessments ensure the highquality installation of program-incentivized air source heat pumps, which leads to optimized energy efficiency, greater comfort, lower operating and maintenance costs, and longer equipment lifespans. Installations that can fulfill all items of the NYS Clean Heat fieldassessment checklist support a positive public perception of heat pump technology, higher adoption rates of clean heating technologies, and in turn more business for contractors.

There are many more resources available through NYS Clean Heat, including working group meeting recordings, links to Green Jobs -Green NY Financing, training requirements, program forms, detailed

EXPLORE THIS SECTION

Installer Reference Materials

NYS Clean Heat Materials

Become a NYS Clean Heat Contractor

Marketing Tools & Materials

Manufacturer/Distributor Partners

It pays to participate

Earn incentives on air-source heat pump and heat pump water heater technology, and build your business with the NYS Clean Heat Program.





Here's how:

- Select and purchase eligible equipment depending on your customer's needs and Manual J calculations.
- 🛇 3. Install eligible equipment for a Central Hudson Gas & Electric customer. See eligibility requirements on back.
- ♂ 4. Submit projects on the NYS Clean Heat Program online portal and get paid!

Learn more at cleanheat.ny.gov/contractors.

Customer rebates and contractor rewards available:

Category Number	Technology	Incentive	Total Incentive	Participating Contractor Reward ¹
2	ccASHP: Full Load Heating	\$/10,000 Btu/h of maximum heating capacity at 5°F, as documented on the NEEP Product List ²	\$500	\$300/project
2A	ccASHP: Full Load Heating w/ Integrated Controls	\$/10,000 Btu/h of maximum heating capacity at S°F, as documented on the NEEP Product List ²	\$700	\$500/project
28	ccASHP: Full Load w/ Decommissioning	\$/10,000 Btu/h of maximum heating capacity at 5°F, as documented on the NEEP Product List ²	\$1,000	\$500/project
2E	Air-to-Water Heat Pump	\$/10,000 Btu/h of heating capacity at the condition of 5°F ambient and 110°F leaving water temperature, or ASW110, as documented by the New York AWHP Qualified Product list (AWHP QPL) ²	\$500	\$300/project
5 Retail	Residential Rated Heat Pump Water Heater (HPWH)	\$/Unit ^a	\$1,000	N/A
5 Midstream	Residential Rated Heat Pump Water Heater (HPWH)	\$/Unit ^a	\$1,100	\$50/unit (Contractor) \$50/unit (Distributor)

Save your customers money while earning some for yourself! Questions? Email an account manager:

Matt Siano	Elizabeth Lagerstrom
Matthew.Siano@icf.com	Elizabeth.Lagerstrom@icf.com
Lauren LaBarbera	John Pfeiffer
Lauren.LaBarbera@icf.com	John.Pfeiffer@icf.com

¹ Total Incentive to be limited to 120% incentive is (Maximum Heating Capacity x 1.2)/HP String Ratio, See Equipment Sizing Requirements in Appendix 2 of the program manual for additional details.

² Contractors who receive this reward are not required to be Clean Heat Participating Contractors.

¹Contractors who are submitting applications with both air-source heat pumps and HPWH cannot receive the \$100 additional reward.

New Resources – Coming Monday

- > Adding Heat Pumps to Your Business
- > Reduce Over-zoning
- > Multi vs Single Head Systems
- > Comfort and Health Sheet

Comfort Home

Comfort Home System Update

- In early 2024, we announced an upgrade from Compass to NYHEP.
- We heard your feedback about usability, system efficiency, and a desire to keep Comfort Home as simple as possible.
- We've built more time into our schedule for testing.
- We challenged the team to streamline as much as possible.
- We're including a soft transition / ramp up period with training and extended support.
- We're planning to migrate approved work from Compass to NYHEP.

Comfort Home System Update

- Testing is underway.
- Optimization taking place to streamline the data entry as much as possible while still meeting our reporting requirements.
- Our original schedule may move outward.
- We are still planning for a soft transition period during which contractors can use NYHEP or Compass.
- If we aren't able to start the soft transition in late October, we are planning to extend the soft transition period into early 2025. The firm cutover date to NYHEP will move to early 2025. This will minimize changes during holiday season.

Question:

If there aren't any approved Comfort Home contractors in a county, can a contractor from a neighboring county complete Comfort Home program work?

YES.

Comfort Home doesn't limit work by geography or even check that contractors are submitting work that's in their market.

The list of counties for each contractor is just for the convenience of customer searches on our website. We don't limit contractor's work territories.

If contractors are doing work outside a previously submitted set of counties, they can update their list of counties served by emailing the Comfort Home inbox at

ComfortHome@nyserda.ny.gov



REA Enrollments in Assessment Submission Step for 60 Days – New NYHEP Feature

- NYHEP will be configured to automatically cancel an REA enrollment that has been Open in the Assessment Submission step for 60 days.
- Upon cancelling the enrollment, an email will be sent to the primary Trade Ally contact listed in the Trade Ally Information section of the Applicant Information tab within the Assessment Submission step.

Trade Ally Information						
	Primary	Trade Ally	Туре	Employee	Phone	Email
	Yes	Test Contractor Two	Contractor	Employee, Two	(555) 555-5555	@launchcg.com
Add Remove Add New						

- All new enrollments created after enabling this feature will be subject to cancelling if the enrollment is open for 60 days in the Assessment Submission step.
- Release of this feature will occur in the next couple of months and an announcement on the NYHEP home page will be posted.
- If an enrollment needs to be reopened after it gets cancelled, please reach out to Contractor Support at support.residential@nyserda.ny.gov or 800-284-9069.

REA Enrollments in Assessment Submission Step for 60 Days – New NYHEP Feature

- In addition to this feature, a clean up effort of cancelling REA enrollments in the Assessment Submission step for more than 60 days will be completed.
- If your company has open enrollment(s) older than 60 days in the Assessment Submission step, you will receive an email with a list of the enrollment numbers that will be cancelled.
 - Contractors can cancel enrollments on their own using the 'Cancel' outcome selection, then clicking 'Process' within the Assessment Submission step.

Assessment Submission - Applicant Information - New				
🌼 Process 🚽 Save 🔇 Close 🥏 Expa	and All <i>之</i> Collapse All <u>国 E</u> nrollment i	Profile 🔹 Double Dip Report 😭 Update Customer		
Processing Information Community Hub - Trade Ally	Community Hub - Employee	Outcome		
		Cancel		
General Application Information		~		
Application Date	Reference Number	Assessment Complete		
09/04/2024 🧬	1057196	Cancel		



No-Heat Guidance



EmPower+ No Heat Requirements and Updates

- Section 5.9 Program Manual provides the current No-Heat guidance
- EmPower+ can provide assistance to customers in no-heat situations but the program *is not designed* as an emergency no-heat program.
- The OTDA Heating Equipment Repair or Replacement Program opens on October 1 and should be the first referral for customers.
- No-heat equipment replacement project incentives are available up to the program heating incentive caps for Tier 1 (Low-Income) and Tier 3 (Moderate-Income) projects referenced below.

Tier 1 (Low-Income) - Furnace-Not to exceed \$6,000 per system

Tier 1 (Low-Income) - Boiler- Not to exceed \$10,000 per system

Tier 3 (Moderate-Income) - Furnace/Boiler \$2,000 per heating system

EmPower+ No Heat Eligibility

For 2024-2025 the following updates have been made to the No Heat Eligibility requirements:

- Program has removed the requirement that the heating system failure had to occur during the current heating season.
- Program now allows no-heat replacements for situations where a primary heating system has been disabled for 12 months or more and there is an alternative heating source in place

For a project to be eligible for the no-heat incentive through EmPower+ the following conditions must be met:

- The household is ineligible for or was denied HERR funding.
- The project occurs between October 1, 2024, through May 31, 2025.
- The Primary Heating Systems is deemed unsafe to operate and be non-repairable
- The heating system failure occurs at an owner-occupied primary residence of an income qualified customer

EmPower+ No Heat Eligibility (other)

If the household is owner occupied, is Tier 1 (Low-Income) income eligible and meets one or more of the below criteria, a HERR denial is *not* required

- Applicant has lived in the home less than 12 months preceding the month of application
- Applicant has owned the home less than 12 months preceding the month of application
- Dwelling is a 3- or 4-unit home
- Heating equipment is inoperable due to flood, fire, or other natural disaster
- Household is switching primary heating system from delivered fuels to heat pump technology

Heating Equipment Update

- In response to feedback from Clean Energy Hubs and Participating Contractors, NYSERDA has made updates to Section 5.18 of the Program Manual, to remove the requirement that a household must have an operational heating system in place for home performance measures to proceed.
- Section 5.18 of the Program Manual has been updated to reflect this change, effective September 27, 2024.

MyEnergy



Starting October 25, 2024, all *new* EmPower+ applications will be processed through MyEnergy

Existing NYSERDA-EmPower+ Application Portal

- Usage: Contractors can continue to use the existing portal for SQA, Dashboards, Case Tasks, and Campaign Generation. Applications that are already started or in progress can still be submitted through this portal. However, please note that 120 days after training, these in-progress applications will be archived, and you will no longer be able to complete them. Applications initiated before October 25th are to be submitted via this portal.
- Access: Your existing credentials will remain unchanged.

New MyEnergy Portal

- Usage: Beginning Friday, October 25th, all <u>new</u>
 EmPower+ and AUP (Appliance Upgrade Program)
 applications must be started and submitted through
 MyEnergy. Previously submitted EmPower+ projects
 will be visible.
- Access: Log in to MyEnergy using your existing Salesforce portal credentials.

Upcoming Training Opportunities: Contractor training for the staged cut-over will commence later this month

MyEnergy Portal Contractor Training Sessions

Four training sessions will be conducted by NYSERDA in late October and early November for Participating Contractors on MyEnergy Portal.

Separate training dates will be scheduled for Clean Energy Hubs

This training will equip participants to effectively navigate and utilize **MyEnergy**, a portal designed to enhance residential customer engagement with home and building energy efficiency and clean energy improvements. Register for 1 of the following sessions: Session #1: Mon, October 21, 9-10 am Session #2: Tue, October 22, 4-5 pm Session #3: Wed, November 6, 9-10 am Session #4: Thu, November 7, 4-5 pm

Office Hours will be announced in the coming weeks.

Revised Test-out Form is LIVE

- Updates to the EmPower+ NYHEP test-out form are live as of September 26, 2024
- No action is required on the part of contractors, the updates have been incorporated into the Test-Out Form.
- Updates to the Test-Out Form include IRA incentive estimates and utility bill savings estimates.
- If there are any questions, please contact Contractor Support at 1-800-284-9069.

Heat Pump Updates



Heat Pump Rule Changes

Additional Incentive ending November 1, 2024:

On November 1, 2024 the additional heat pump incentive of \$5,000 will no longer be available. Projects must be submitted to the workflow submission step in NYHEP to be eligible for this incentive. Projects will still be eligible for Empower+ and additional IRA HEAR funding.

Change to the Acknowledgement Form Heat Pump Installation:

NYSERDA has made edits to the Acknowledgement Form Heat Pump Installation to clarify what utility incentives are not available for EmPower+ projects. Contractors should use this form moving forward. **Heat Pump Commissioning Checklist:**

If a manufacturer's commissioning checklist is not available for the equipment being installed, a contractor may use the <u>NYS Clean Heat ASHP Commissioning Checklist</u> when submitting documents to final project submission.

Heat Pump Training Schedule

Date	Торіс
10/11/24 2hr	Manual J – Overview, including inputs & data gathering
10/25/24	Equipment Selection/ Manual D & S (NEEP tool) -Determine design heating capacity, select equipment -Avoiding oversizing -When/how to use supplemental systems- guidelines of minimum size
11/22/24	Over-sizing, Over-zoning, under-sizing with back up heat (5kw up to 20% of heating load)
12/6/24	Design and placement of the system, Value engineering principles and practices
12/20/24	Office Hours
01/04/25	 a. Exterior Equipment Placement b. Snow shields c. Condensate lines d. Dehumidification e. Avoiding mold growth in heads f. Manufacturer commissioning checklist
1/18/25	Using Manual J in Design- Putting it all together

Avoiding Common Mistakes With Heat Pump Submissions

NYHEP inputs – Existing condition – Verifications for Manual J and provided Drawings

Dwelling Information		Shell - Insulation		
**Dwelling Type Single-Family (1 unit)	Number of Units 1	** Attic 1 - Sq. Ft. 1456		**Attic 1 - Insulation Type Cellulose-Loose Fill
**Existing Siding Type Vinyl	**Year Property Built 1994	**Attic 1 - Insulation Depth (in) 14		**Attic 1 - Insulation Grade Less than 10% Voids or Compression
**Stories Above Grade	**Average Story Height (ft) 8	Attic 2 - Sq. Ft.		Attic 2 - Insulation Type
**Wind Exposure	**Predominant Basement Type	Attic 2 - Insulation Depth (in)		Attic 2 - Insulation Grade
Normal	Basement	Attic 3 - Sq. Ft.	Attic 3 - Sq. Ft.	
**Total Conditioned Space (sq. ft.) 1456	**Number of Bedrooms 3	Attic 3 - Insulation Depth (in)		Attic 3 - Insulation Grade
Shell - Windows	· · · · · · · · · · · · · · · · · · ·			
**Existing Window Type 1	**Sq. Ft. of Windows 1	Blower Door Test Completed?:	Yes	
	145 *************	Pre Air Sealing Air Infiltration (CFM50):	1429	
1312	Fiberglass-Batts	**Post Air Sealing Air Infiltration (CFM50):	1,360.0	
**Exterior Walls - Insulation Depth (in) 4	or Walls - Insulation Depth (in) **Exterior Walls - Less than 10% Void		7.3609203297	
**Exterior Walls - Wall Cavity Depth 2x4		Post Air Sealing Air Infiltration (ACH50):	7.0054945055	

Avoiding Common Mistakes With Heat Pump Submissions

NYHEP inputs – Existing condition – Verifications for Manual J, Manual S, and NEEP sheets,

**Will this ASHP project satisfy 90- 120% load (before 5/31) or 100% load per Code (on or after 5/31)?:	Ves 💌	**Cost:	\$11,000.00
**ASHP Configuration Type:	Central Ducted	**Material Cost:	\$8,000.00
**ENERGY STAR Certified:		Duct Work Cost:	
**ASHP Controls:	Integrated/Modulating	Dollar Savings:	\$1806.71
**Does the new HP meet EnergyStar's requirements for cold	Ves 🗸	Lifetime Savings:	\$27100.71
climate HP?:		Alternate Funding:	Utility WAP 3rd Party
**What percent of the heating load will this system cover?:	100%	Estimated Customer Contribution:	\$0.00
**Make:	LENNOX	**Will the Customer Contribution be overridden?:	No
**Model:	MLB048S4S-2P	Show Hidden Calculations:	No
**Efficiency Rating Standard:	SEER/HSPF		
**Replacement Cooling Efficiency - SEER:	16.1		
**Replacement Heating Efficiency - HSPF:	10.0		
**ASHP Size (rated cooling capacity) Btu/h:	47000		
**Maximum Heating Capacity 5 Degrees:	46443		
**Building Heating Load (Manual J) Btu/h:	42288		

Avoiding Common Mistakes With Heat Pump Submissions

Total Utility Funding:	\$0.00
Total WAP Funding:	\$0.00
Total 3rd Party Funding:	\$0.00
Total Customer Contribution:	\$0.00
EmPower+ Incentive Including Audit, DI, Pilot:	\$25085.96
EmPower+ Incentive Excluding Audit, DI, Pilot:	\$24192.82
EmPower+ Incentive Excluding Audit, DI, Pilot, Enabling:	\$20192.82
EmPower+ Incentive Excluding Audit, DI, Pilot, Enabling @ 80%:	\$16154.26
Health & Safety Towards Prequalification:	\$2500.00
Annual Fuel Cost:	\$5725.78
First Year Dollar Savings:	\$3315.57
First Year Savings Percentage:	57.9%
Total Lifetime Dollar Savings:	\$50642.77
Passed Project Level Cost Effectiveness:	Yes
Estimated Total HEAR Incentive:	\$14000.00
Estimated EmPower+ Incentive:	\$10192.82
Additional Funding Requested Above Maximum Incentive Amount:	\$192.82

Verify If braided funding is included:

- Supportive documentation is provided with submission
- Amounts for each funding source is accurately reflected
- Customer contribution is accurately reflected
- Verify that NYHEP funding allocation indicates correct amount in "Additional Funding Requested" and does not exceed \$5000
- Verify First Year Savings and Total Lifetime Dollar Savings are Reasonable:
 - This can be impacted by incorrect inputs on the "Usage & Fuel Information" tab

Verify project meets PLCE:

- Total lifetime dollar savings is greater than EmPower+ Incentive excluding Audit, DI, pilot, Enabling



Reminders



Photo Requirements

Workscope Submission

Single aggregated file with labeled photos.

- All exterior sides of dwelling
- Refrigerator and nameplate
- Freezer (if present) and nameplate
- HVAC (Heating and Cooling Systems, Water Heater) and associated nameplates
- Pre-existing attic insulation levels
- Other targeted measure(s) for replacement
- Exception requests

Additional Requirements for Heat Pump Submissions

- Existing heating system
- Existing ducted systems: geo-tagged photo of the existing main plenum must be submitted for project approval

Final Project Submission

Geo-tagged, time-stamped and aggregated into a single PDF document single aggregated file with labeled photos.

- All installed measures
- Project conditions resulting in the completion of a Field Change Order
- Health and safety issues identified at the start of work that prevent the installation of approved measures.
- · Areas that will be made inaccessible following the completion of work

Additional Requirements for Heat Pump Submissions

- Installed unit(s)
- Name plate with clear view of the model and serial numbers
- Removal or disabling of the existing system
- Existing ducted systems: Photo of static pressure testing being completed of the duct system with the new unit in place and the result of the static pressure test

Reminder: Geo Tagging

As of October 1, all final submission photos need to be geo-tagged to meet requirements from the Department of Energy. These photos need to be submitted as a PDF in a single file of aggregated photos. There are several options for providing photos in this format:

- 1. The PNNL Quality Install Tool provides a method for taking pictures on site, sorting them by measure and geo-tagging them. It provides a simple PDF export for the pictures.
- 2. Company Cam and other subscription photo plans provide PDF reports with geo tagged photos.
- 3. There are apps available such as gpsmapcamera.com which will display geo-tagged information on photos.
- 4. Section 8.2 of the Program Manual has been created to provide information on EmPower+ Photo Requirements for Assessments and Projects

Examples of geo-tagged Photos



Timestamp: August 10, 2023 at 01:25 PM PDT Geolocation: <u>45.5118,-122.5810</u>

Project: Bausch House - Abc Date: 8/7/2024, 12:19pm Creator:





Jul 18, 201812:59 PMGPS: 40° 43' 50.1960" N, 73° 56' 6.87 ...

Photo Requirements

Acceptable Photos

- Photo is in focus and labeled. •
- Equipment nameplate is legible, and photo labeled.
- Series of photos to show entire unit.
- All sides of dwelling. ٠





BACK OF HOUSE





SIDE OF HOUSE







6/25

Attic

REFRIGERATOR MANUFACTURER LABEL

Attic Insulation







106/24/2024. 01:44pm EDT





🛅 06/24/2024, 01:44pm EDT

8 06/24/2024, 01:44pm ED1

106/24/2024, 01:45pm ED



Photo Requirements

Unacceptable Photos

- A screenshot of thumbnail images is too small and has a low-resolution quality.
- Photos that are too dark do not allow any details to be seen.
- Unlabeled photos. Without labels it is not clear what information is being shared.
- Photos need to show the entire unit. In areas with limited space, take multiple high/low or left/right photos.







Accessing Case Records via Email

When an email is sent to <u>support.residential@nyserda.ny.gov</u>, a confirmation email will be sent to the sender.

- Subject line will mirror the original email's subject line.
- Case number unique ID for reference
- Reference code will be included at the bottom of the email unique system ID helping ensure that replies to the original email are associated with the correct case.

From: Residential Existing Homes [<u>no-reply@nyserda.ny.gov</u>] Sent: 9/26/2024 10:51 AM To: <u>test@testcompany.com</u> Subject: Test Case – Email Confirmation

Thank you for submitting a request for assistance Case #00123456 as been created in the NYSERDA Portal, and a member of our team will respond to you as soon as possible.

To expedite resolution of your case, please be sure you have provided the following information:

1.Summary of the issue, concern, or question

2.Name of the contractor/company involved with the project

3. Customer name and/or Project/Enrollment ID number

Replying to this email will automatically attach the new information to the case.

Thank you.



Accessing Case Records via Email

When a support agent accepts the case and sends a response from Salesforce, it will come to the sender as an email in their inbox. The response email will include the reference code in the subject line.

- As communication continues back and forth via email, the reference remains in the subject line. Upon resolution of the case, the support agent informs the sender that their request has been resolved and the case will be closed.
- It is important to never remove the reference code from an email or subject line. This is the linkage between your email and the case in Salesforce. If it is removed, your response will create a brand-new case, that is separate from the original one you submitted.

From: Residential Existing Homes <support.residential@nyserda.ny.gov>
Sent: Tuesday, October 1, <u>2024</u> 2:47 PM
To: test@testcompany.com
Subject: RE: Test Case – Email Confirmation [ref:!00D3

Dear Contractor,

Thank you for your request to switch enrollment # 1234567 from OTDA to IRA. It was verified that this enrollment is eligible for the switch. The enrollment is in the Workscope Submission step and is assigned to Test Company in NYHEP. Please ensure that the enrollment is reviewed for the following items:

- Ensure IRA incentives are enabled (this may require clicking the 'Save' icon multiple times
- Rework project cost allocation
- Indicate in notes that project is seeking the Value Engineered Incentives
- Add any required documentation per Section 5.10 of the Program Manual: https://hpwescontractorsupport.com/wp-content/uploads/2024/07/Section-5.10-Heat-Pump-Requirements-July-2024-r1.pdf

Once the above items are addressed, this enrollment can be (re)submitted for approval.

Your case is now closed. If you have any questions, please contact (800) 284 - 9069 or reply to this email.

Thank you, Agent Jones NYSERDA's EmPower+ Support Team

Accessing Case Records via Email

When the case is closed, the sender receives an automatic email confirming resolution of the referenced case.

From: NYSERDA No Reply <no-reply@nyserda.ny.gov> Sent: Monday, September 9, <u>2024</u> 3:42 PM To: Test Contractor <test@testcompany.com> Subject: Resolution of Your Recent Case - 00123456

Dear Test Contractor,

Your case 00123456 has been closed.

If you have any further questions or concerns related to this case or require additional support, please don't hesitate to get in touch with us.

Thank you, NYSERDA Support

Accessing Case Records Directly from Salesforce

Users logged into Salesforce can search for a specific case using the Search feature. Results will show:

- Case Number
- Subject
- Date/Time Opened
- Status
 - Open
 - Pending Contractor

 - Closed

Home Submit a New Application Projects Project Invoices Cases Project Inspections Knowledge Dashboards Case Tasks Generate Campaign

Searc	ch F	Resu	lts

C Search Feeds		Search Again i Options			
Records	Cases (1)				
Projects (0) Project Roles (0) Project Site (0)	Action Case Number Edit	Subject	Status Pending-Contractor	Date/Time Opened 9/30/2024 3:53 PM	Case Owner Alias
ases (1)				Search All	
earch All					

Search.

Search

Accessing Case Records Directly from Salesforce

Users logged into Salesforce can also navigate to the Case tab and select a View.

Use the Case information listed to identify the relevant case.

- Case Number
- Subject
- Date/Time Opened
- Status
 - Open
 - Pending Contractor
 - Pending Customer
 - Closed

YORK STATE	_					
Home Submit a New Application P	rojects Project Invoices Ca	ses Project Inspections Knowledge	Dashboards Case Tasks	Generate Campaign		
Cases Home Select the cases you want to view from the o View: Recently Viewed Cases My Created Cases Rece My Open Cases	frepdown.		Create New Case			
Case Recently Viewed Cases	Subject		Date/Time C	Opened	Priority	Status
Residential - All Cases	1000		9/30/2024 3	3:53 PM	Medium	Pending-Contracto
- Marc	terror and the second		8/7/2024 1:	51 PM	Medium	Closed
an and the			7/24/2024 1	11:41 AM	Medium	Closed
an and the			7/24/2024 3	3:11 PM	Medium	Closed
00100000			7/22/2024 8	8:34 AM	Medium	Closed
000000	and the second second		7/17/2024 1	1:39 PM	Medium	Closed

Accessing Case Records Directly from Salesforce

Upon entering the Case record the basic information is located at the top.

- Case Number
- Subject
- Case Description

The Feed tab shows all updates related to the case.

- Emails
- Case Status
- Case Owner

When a case closes the final automatic email confirming resolution of the referenced case will also be visible in the Feed.

Replies to message can be done in the Post >>>



Accessing Case Records Helpful Hints

- Keep note of your submitted cases for reference.
 - Should you need to follow up on the topic, referencing the case number allows the support agent to quickly locate the case.
- If you receive a resolution case email but you are unsure of what it is related to, search your inbox for the case number to locate the original confirmation of submitting the case. This will have the subject line.
- When submitting cases, ensure that the subject line is relevant and specific to the topic you are addressing.
- Include enrollment numbers and/or application numbers.



Questions?

