

Heat Pump Installation Requirements

The following outlines the eligibility and project requirements for heat pump installations, which include air-source heat pumps (ASHP), ground-source heat pumps (GSHP), and heat pump water heaters (HPWH) in existing Tier 1 (Low-Income) or Tier 3 (Moderate- Income) 1-to-4 family homes. Heat pump equipment must meet the minimum program efficiency requirements referenced in the Eligible Measures list found in Section 5.15 in the [Program Manual](#).

Customer Requirements

To be eligible for incentives, the home must be a 1-4 family with the residents/tenants paying the utility bills including for electricity, utility natural gas, propane, oil, kerosene, wood pellets, or wood.

Project Eligibility Requirements

To be eligible for heat pump equipment incentives, the following criteria must be met:

1. Projects cannot receive both EmPower+ and NY Clean Heat Funding. Participating Contractors must inform the program if ANY additional funding is being utilized on the project.
2. The home must meet the building envelope standards outlined in Table 1 below. The standards can be met either prior to the heat pump project or by the completion of the project.
3. The existing primary HVAC system must be older than 5 years.
4. Program funding is for the addition of heat pump technology to an existing home and not for updating or replacing existing heat pumps and heat pump water heaters.
5. Heat pump systems shall be designed following the [NEEP Guide To Installing Air-Source Heat Pumps in Cold Climates](#).
6. All projects with air source and ground source heat pumps must meet a 20% energy cost savings requirement. The savings will be calculated using the fuel usage and cost of the pre-existing heating fuels and electricity compared to the estimated electricity usage and cost for the home after the project is complete as calculated by the TRM calculations in NYHEP. If a project has less than 20% savings there will be a tertiary review process for possible approval. Contractors should include any extenuating circumstances such as health and safety in the project notes that will help with the tertiary review.
7. Savings calculations (with NYHEP data field titles)
$$(Annual\ fossil\ fuel\ use\ x\ price\ per\ unit) + (electric\ usage\ x\ electric\ rates) =$$
$$Annual\ fuel\ cost$$
$$First\ Year\ Dollar\ Saving/Annual\ Fuel\ Cost\ x\ 100 = first\ year\ savings\ percentage$$

8. **For the 2024 summer season:** NYSERDA will prioritize the conversion of homes that heat with delivered fuels such as oil and propane to heat pumps, and electric resistance heating, which present the best economic case for the customer. While state agencies will work over the next several months to assess opportunities to mitigate energy burden impacts for additional lower-income New Yorkers when converting to heat pumps, homes with existing natural gas heating equipment are not eligible for replacement with a heat pump. The amount of customer out of pocket expenses and the relation to energy affordability will also be assessed over the 2024 summer season.
9. The cost of the heat pump may include any the following system components:
 - a. Distribution system installation, modification, and repair
 - b. Controls and control systems
 - c. Racking, mounting, and shielding components necessary to meet code and manufacturer's installation requirements
 - d. Line set insulation and conduit
- e. Electrical upgrades to the service panel and/or other wiring repairs and improvements necessary to install the heat pump may be included in the overall work scope but costs for these measures should be itemized separately from the heat pump system itself.

Air Source/Ground Source Heat Pump Project Requirements

1. Participating Contractor must complete an ACCA Manual J or other approved heating and cooling calculation methodologies*. Applicable exceptions shall apply**. Heat pump systems must be designed using the ACCA weather station closest to the project. Contractors shall provide a copy of the house drawings used to generate the Manual J calculation showing measurements used to generate room-by-room or Block load calculations including orientation and rough sizing of windows and doors. Software generated diagrams are acceptable.
2. Participating Contractor shall refer to the Residential Heating and Cooling Load Analysis Quality Control Checklist as a best practice. At the end of the project, the Participating Contractor must attest on the Heat Pump Form, they followed this guidance for the heat pump installation.
3. The proposed heat pump system must be designed sized to meet 100-110% of the building's heating load. The proposed heat pump system may include use of a supplemental heating source to reach 100% of the building heating load. Supplemental heat sources may be designed to provide up to 20% of peak heating load up to 5kw or equivalent supplemental.
4. The existing whole house fossil fuel heating system (oil, propane, etc.) must be decommissioned. If equipment is left in the home, it must be rendered inoperable per the [Decommissioning Checklist](#). Existing wood or wood pellet stoves and electric baseboards with heating capacity greater than 50% of the home's heating load may remain as supplemental heat.

* 2020 Residential Code of NYS, Chapter 14, Section M1401.3 Equipment and appliance sizing

** One alternative sizing methodology resource, Alternate Methodology to Demonstrate Energy Code Compliance: Heat Pump Sized to Meet Heating Design Load, can be found under the Resources page of <https://cleanheat.ny.gov/resources-for-applications/>.

Air Source/Ground Source Project Documentation

Pre-Installation Requirements

When submitting a work scope for heat pump projects, in addition to the standard required Program paperwork, the following documents will also be required:

1. Detailed summary page generated by Manual J sizing software or spreadsheet designed to the ACCA weather station closest to the project.
2. House drawings that show rough measurements of windows, doors, walls either room-by-room or block drawings will be accepted.
3. Manual S or equivalent sizing software such as NEEP advanced sizing tool or the manufacturer sizing software or manufacturer specification sheet showing unit btu output at design temperature. This also must show what % of the building is covered by the installed unit(s). This % of the unit coverage can be calculated and written directly onto an uploaded document if software or specification sheet being used does not show that value.
4. AHRI certificate for GSHP's and NEEP certificate for ASHP's. Products must be AHRI and NEEP listed.
5. Photos of the existing system
6. Copies of all utility bills including delivered fuels
 - A minimum of 12 months of energy usage must be documented. When receipts for un-metered fuels such as wood, pellets, or kerosene are unavailable a customer attestation may be used to estimate consumption and cost of those fuels.

Post-Installation Requirements

1. Fully completed manufacturer's commissioning form of the [NYS Clean Heat ASHP Commissioning Checklist](#) with dates.
2. Photo of the unit installed and photo of the name plate with clear view of the model and serial numbers.
3. Heat Pump Equipment Invoice(s) if using a subcontractor for heat pump installation.
4. Photos documenting that the removal or disabling of the existing system was completed and a copy of the decommissioning form.
5. Completed NYSERDA Heat Pump Installation form.

Additional Incentive Project Requirements

Projects must be submitted in NYHEP by October 31, 2024, to receive the additional incentive.

Projects that meet the following guidelines are eligible for an additional EmPower+ incentive up to \$5,000 to offset the higher cost for homes that require larger and/or more complex heat pump systems to meet the whole building's needs. This incentive offer is dependent upon the availability of funds and rules may be modified or incentives reduced with short notice. Combined heat pump measure incentives may not exceed 100% of the total cost of the heat pump system installation, inclusive of all ancillary components, equipment, and installation costs required to support proper installation and operation of the heat pump system.

Submitted documents to determine that the design of the heat pump system has been value engineered in a manner that serves to mitigate and reduce project cost over-runs in excess of standard project incentive caps. The design of the system and selection of equipment must support the need for expanded incentives to complete a project while using value engineering strategies to minimize costs to the extent possible. Value engineering strategies should follow the guidelines established in the Northeast Energy Efficiency Partnerships [“Guide to Sizing & Selecting Air-Source Heat Pumps in Cold Climates”](#) including:

- Right sizing the heat pump system to the heating and cooling loads of the home after weatherization measures have been installed to make the home’s envelope “heat pump ready”
- Optimizing the system design to deliver heating and cooling comfort conditions using a minimal amount of equipment
- Locating installed equipment to deliver heating and cooling efficiently while minimizing distances needed to run line set and wiring
- Utilize design and equipment selection guidance to provide a system which maximizes efficiency and minimizes equipment and operational costs.

To be eligible for the additional \$5000 in EmPower+ incentives, project submissions must include documentation that value engineering strategies have been applied. The following documents are required to be considered for up to an additional \$5000 in incentives:

1. For systems where a new duct system is being installed and/or when duct modifications or replacement representing more than 50% of the total duct system are proposed, a completed Manual D as per ANSI/ACCA 1 Manual D 2016 with AHRI Certification Document is required. Modifications to existing duct systems used to improve airflow or static pressures or to connect to the new system (supply and return plenums) are not considered new ductwork and do not require a Manual D.
2. For existing ducted systems, a Geo stamped photo of the existing main plenum must be submitted for project approval. When submitting completion documentation, the contractor must submit a Geo stamped 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.
3. Floorplan showing Internal Head placement for Mini split systems as per Manufacturer’s specifications. (For mini-splits) (Required at Final Project Submission)

Building Envelope Standards

The program will use the insulation levels in Table 1. Below is the minimum level of insulation a home should have prior to the installation of a heat pump. In the event the home cannot be insulated to these levels, a heat pump should not be considered for installation through the program at this time; however, the insulation work should proceed in anticipation of a future heat pump installation.

Table 1.

Area Required	Insulation Level
1-4 Family Homes	
Attic Gable Walls	R-14
Knee Walls	R-15
Attic Roof Deck	R-28 or Fill to Capacity
Attic Floors/Open Attic	R-38 Average ¹ or Fill to Capacity
Attic Slope Ceilings	R-38 or Fill to Capacity
Attic Hatches	R-20
Pull-Down Stairs	R-13
Walls	R-14 or Fill to Capacity
Rim Joist	R-14
Air Tightness	7 ACH ²
Mobile Homes	
Walls	R-6
Attic	R-24
Belly	R-21
Air Tightness	7 ACH /12 ACH for mobile homes ²

¹ Average insulation of total attic area- some areas might have less than R-38 if the total average of the combined attics is R- 38.

² Prior to the installation of heat pump heating equipment, the contractor must verify the home is tightened to at least 7 ACH for a 1-4 family home/12 ACH for a mobile home or below to ensure proper heating from heat pumps. If the contractor cannot perform a blower door test, they must use NYHEP to estimate the air leakage.

Project Considerations

Any additional work needed for distribution systems should be itemized and included in the work scope proposal.

Distribution System

The current distribution system should be considered when selecting a system. Distribution costs, if required, will be included in the cost of the heat pump. In some homes, major distribution improvements will have to be made. Incentives will have to be balanced with the overall system cost and operational affordability (for instance, it may be more economical to install mini splits rather than a central system with duct improvements, but the mini split system may be more expensive to operate). In addition, a homeowner should be informed about the installation costs, operational costs, complexity of systems operation, and overall capacity to deliver comfort as needed when deciding on the type of system to be installed.

Heat Pump Water Heating

Heat Pump Hot Water Heaters should be installed in accordance with manufacturer’s installation guidelines and contractors should use their professional discretion when

citing them. The following are conditions for determining suitability of a project for a heat pump water heater:

1. Electrical capacity present in the current panel box or the panel box can be upgraded to this capacity when the HPWH is installed.
2. Adequate ceiling height in the basement for a HPWH.

Electric resistance water heaters should only be installed when the current system is non-functioning and installation of a HPWH is not possible. Projects cannot receive both EmPower+ and NY Clean Heat Funding.

Participating Contractors must inform the program if ANY additional funding (outside of EmPower+ based funding) is being utilized on the project.

Cooling

With rising temperatures from climate change, heat pumps can provide efficient cooling, which can prevent heat-related illness. For homes that did not have access to cooling, once installed, this equipment can increase operating costs. The Participating Contractor must provide the customer with an estimate of how their operating costs could increase, and have the customer sign the attestation on the Test Out form showing estimated first year utility cost reduction and percentage reduction before installation begins. Mandatory recycling that follows EPA guidelines of existing A/C window units is required when installing heat pumps.

Revision History

Jul 1, 2024- Under **Additional Incentive Project Requirements**, Existing language for: 2. Static pressure test for existing ductwork as per ANSIRENETACCA_310-2020_v7.1.pdf. replaced with the following: 2. For existing ducted systems, accurate measurements of the supply/return and any runoff from those plenums is required. Along with the measurements, we will need proof that the new system will work effectively with the existing ductwork by providing us with ductulator or equivalent measurements based on the CFM of the proposed unit and the size of the existing ductwork. For test out, we will require static pressure testing of the system with the new unit in place.

*Jul 1, 2024- Under **Air Source/Ground Source Project Documentation-Pre-Installation Requirements**, 7. Copies of all utility bills including delivered fuels, added "Usage must be documented, waivers are not acceptable"*

Jul 18, 2024- Under **Air Source/Ground Source Project Documentation-Pre-Installation Requirements**, 2. Manual S showing the % of load covered by the unit and % covered by supplemental heater if applicable. was replaced with 2. Manual S or equivalent sizing software such as NEEP sizing or the manufacturer sizing software for the equipment being installed that shows the % of load covered by the unit and % covered by supplemental heater if applicable.

August 2024- There were significant changes to the document and contractors were encouraged to review the entire document in its entirety. The significant changes are highlighted below:

- Manual D is only required if substantial (50%) new duct work is installed
- Drawings of the house should be accurate enough for verifying the Manual J but, exact window locations don't need to be shown- only sq/ft and type per side. Room by Room or block drawings are acceptable. Location of heat pumps are required at final project submission.
- The proposed heat pump system may include use of a supplemental heating source to reach 100% of the building heating load. Supplemental heat sources may be designed to provide up to 20% of peak heating load up to 5kw or equivalent supplemental.
- Customer attestations will be allowed when utility bills are not available.
- Photos requiring the location of the heat pumps are not required until final project submission.

September 27, 2024- Added "**Projects must be submitted in NYHEP by October 31, 2024, to receive the additional incentive.**" To the Additional Incentive Project Requirements

January 15, 2025, under **Air Source/Ground Source Heat Pump Project Requirements**, added "Participating Contractor must complete an ACCA Manual J or other approved heating and cooling calculation methodologies*. Applicable exceptions shall apply**."

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