

Heat Pump Installation Requirements

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

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 low-to-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 6.3. Households seeking to install heat pump equipment should work with their Participating Contractor to leverage additional funding through utility rebates and other offerings if available.

Customer Requirements:

To be eligible for incentives, the home must be a 1-4 family with the residents/tenants paying the utility bills. The project must be located in SBC territory (municipal electric and PSEGLI customers are not eligible). In addition, the household must be either Tier 1 or Tier 3 income eligible.

Minimum Project Requirements:

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

1. Incentive funding is available.
2. The home must meet the building envelope standards outlined in Table 1. below.
3. The existing primary HVAC system must be older than 5 years.
4. The heat pump should cover 90-120% of the building load. Whenever possible, the existing heating system should be removed. Cases where the existing heating system can remain include:
 - a. Installing ASHP split system in a home with hydronic heat where radiator and boiler removal is cost prohibitive.
 - b. A situation in which the heat pump can cover at least 90% of the load of the home but for technical reasons cannot attain 100%. In these cases the contractor should verify the project appropriateness with the program and outline steps taken so the existing system will only be used in emergency situations.
5. Only the first 60,000 Btus of the heating system will be subsidized.
6. For homes that heat with oil, propane, coal, electrical resistance, kerosene, pellets, and wood the project does not have to pass a total project savings for approval.
For homes that heat with natural gas, the existing equipment must be 80% efficient or below and the project should show a net utility bill savings of 10% or greater for approval.

Building Envelope Standards:

The program will use the below levels as the minimum level of insulation a house 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
Walls	R-14 ¹
Attic	R-30 Average ²
Attic Hatches	R-20
Pull-Down Stairs	R-13
Air Tightness	7 ACH ³
Mobile Home Walls	R-6
Mobile Home Attic	R-24
Mobile Home Belly	R-21

¹ 2x4 Cavity filled to capacity.

² Average insulation of total attic area- some areas might have less than R-30 if the total average of the combined attics is R-30.

³ Houses should be tightened to at least 7 ACH to ensure proper heating from heat pumps. If the contractors cannot perform a blower door test, they must use EmPCalc to estimate the air leakage.

Project Considerations:

Any additional work needed for panel box upgrades or distribution systems should be itemized and included in the workscope proposal for the heat pumps.

Distribution System

The current distribution system should be considered when selecting a system. In some homes, major distribution improvements will have to be made. Incentives will have to be balanced with the overall system cost (for instance, it may be more economical to install mini splits rather than a central system with duct improvements). In addition, the homeowner’s preference should be considered when making these decisions.

Panel Boxes

As the program moves to electrify older homes, installers will encounter older panel boxes with insufficient amperage for heat pumps when coupled with existing electric stoves and dryers. Preliminary information indicates that panel boxes 100 Amps and smaller should be upgraded. If the home requires greater than 100 Amp service, then a NEC worksheet must be completed indicating the need for the larger service. Project submission documentation must provide a photo of the pre-existing panel box and an invoice for the replacement panel box. Panel box work may include risers and other measures associated with the main electrical supply, including permits. Individual supply lines and boxes for the heat pump should be included in the cost of the heat pump.

Heat Pump Water Heating

Heat Pump Water Heaters (HPWH) should be installed whenever practicable regardless of the existing system fuel source. Heat Pump Hot Water Heaters should be installed in an unconditioned space, such as a basement, as long as space allows in accordance with manufacturer's installation guidelines. In some homes, such as slab on grade and mobile homes, this may not be possible at this time. Electric resistance water heaters should only be installed when the current system is non-functioning and installation of a HPWH is not possible.

Cooling

With more extreme weather from climate change there is also a large health benefit in preventable heat related illness with heat pumps. One of the main benefits of adding heat pumps to a home is the addition of highly efficient cooling. There may be operating cost increases for homes with no cooling, which the Participating Contractor should educate the customer on. In most cases there will be economic and health benefits in replacing old window unit air conditioners with heat pumps. Mandatory recycling to EPA guidelines of existing window units is required when installing heat pumps.

Project Submission:

In addition to the standard project completion paperwork, Heat Pump projects must also include the following required documents as part of the project submission process:

1. Heat Pump Installation Acknowledgement Form (Attachment 1)
2. LMI Heat Pump Certificate of Completion (Attachment 2)
3. Panel Box Photo (Required if Panel Box Upgraded)
4. Panel Box Invoice (Required if Panel Box Upgraded)
5. Heat Pump Equipment Invoice(s)
6. NEC calculation sheet if panel box being upgraded is >100 Amps (Attachment 3)
(Required if Panel Box Upgraded)

Participating Contractors must inform program if additional rebates are being utilized on the project.



ATTACHMENT 1

Heat Pump Installation Acknowledgement Form

ACKNOWLEDGMENT FORM

Heat Pump Installation



I, _____ residing at _____ acknowledge the following regarding the installation of a heat pump system in my home:

1. Overall energy cost reductions are not guaranteed, and my energy bills may increase following the installation of a heat pump system. Energy costs depend on a variety of factors, including usage, annual temperature variations, and how well my home is insulated/air sealed. I understand my energy bills may increase; however, I choose to have a heat pump system installed for one or more of the following reasons (please initial all that apply):

_____ My home does not have pre-existing full house air conditioning and adding full house air conditioning could add extra utility expenses.

_____ A heat pump would alleviate a health and safety concern in my home.

_____ I'm interested in having a heating system with a low carbon footprint.

_____ Other: _____

2. If I receive bill payment assistance through my utility or the Home Energy Assistance Program (HEAP), the shift in primary heating fuel source from a fossil fuel to electric may impact the level of bill payment assistance received. I will notify my utility and county Department of Social Services that I have installed a heat pump and have changed my primary fuel to electricity.

3. Heat pumps operate differently from traditional boilers and forced air furnaces. In order to maintain comfort in my home I may have to learn how to operate my thermostat differently. I understand that my HVAC contractor will instruct me in the proper use of the heat pump and its thermostat.

Home Owner (Printed) Date

Home Owner (Signature) Date

Contractor (Signature) Date





ATTACHMENT 2

LMI Heat Pump Certificate of Completion

Certificate of Completion

LMI Heat Pump Projects

EmPower New York Assisted Home Performance with ENERGY STAR®

Customer Name: _____ Contractor Name: _____

EmPower ID#: _____ AHP ID: _____

Contractor: I, _____ attest that all measures completed by my company for EmPower New York/ Assisted Home Performance adhere to current standards defined by the Building Performance Institute (BPI) and the current EmPower New York/ Assisted Home Performance Program Guidelines. I further attest that for all Home Performance designated projects, I have conducted the appropriate Combustion Appliance Zone (CAZ) testing and left the home in a safe condition as per BPI Standards.

I attest that I have educated the customer on the use of their heat pumps and any effect they may have on their utility bills. The customer has signed the NYSERDA attestation, and it will be completed in project completion paperwork.

I attest that this project adheres to the [NY Clean Heat program Guidelines](#), that a Manual J has been performed for this home, and that I or the NYS Clean Heat contractor will be applying for a reimbursement from the NY Clean for a utility heat pump rebate.

I attest that my company is responsible for collecting the utility rebate for this project and I will not hold the customer responsible for the contractor's failure to collect these funds. I will also not place a lien on the customer's property for outstanding funds that were promised as a utility rebate.

Company Authorized Signatory: _____ Date: _____



ATTACHMENT 3

NEC Calculations Sheet



**NEC Standard Electrical Load Calculation for Single Family Dwellings
(Only for Service Ratings of 120/240V, 225 Amps Max)**

Owner: _____ Location: _____

Total Floor Area of Dwelling(NEC 220.12) _____ SQFT.

Factor	Quantity	Volt Amperes(VA)	
“General Lighting”			
1. General Lighting (SQFT X 3 VA/SQ FT (Table 220.12))	3 X sqft.		
2. Small Appliance Circuits (1500 VA per circuit) (NEC 220.52(A)) (minimum 2)	1500 X		
3. Laundry Circuit (1500 VA per circuit) (NEC 220.52(B))	1500 X		
4. Total General Lighting Load (Add lines 1, 2 & 3):			
5. First 3000 VA @ 100%:		3000	
6. Total General Lighting Load – 3000 = _____ @ 35%=			
7. Net General Lighting Load (Per NEC 220.42) (Add lines 5 & 6):			
*Fixed Appliances(if insufficient space, use back):	YES	NO	
• Garbage Disposal			
• Bathroom Fan			
• Microwave			
• Dishwasher			
• Other:			
• Other:			
Total			
8. 3 or less Appliances, Total Appliance VA; 4 or more Appliances, 75% of Total Appliance VA (NEC 220.53):			
*Other Loads (including motors, EV charger(s), etc.)	YES	NO	Nameplate Rating(VA)
9. Electric Range (8000VA or Nameplate)**			
10. HVAC			
11. Electric Oven			
12. Electric Dryer (5000 VA minimum)**			
13. Electric Vehicle Charger	✓		
14. Other:			
15. Other:			
16. 25% of largest motor (NEC 430.24)			
Total Service Load Volt-Amperes (VA) (Add lines 7, 8 & 9 thru 16) =			
Total Service Load Volt-Amperes / 240-volts = Amperes			
***Service Rating (Amperes)=			

- * For every “YES” answer, indicate VA rating of equipment
- ** Nameplate rating must be used if larger
- *** Service Rating shall be greater than or equal to the Service load

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